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Session 76PD
Settling The Dust On Smoothing The Assets

Track: Pension

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Summary: This session develops a framework for analyzing the diverse family of deferred recognition methods. Using this framework, attendees learn how to assess the reasonableness of a method from both a client and a regulatory perspective, including a case study of the evolution of smoothing methods used by a particular group of plan sponsors. This session also provides an overview of automatic approval history for asset smoothing methods in the United States, including an analysis of the algebraic equivalence of various methods and the thoroughly unexpected pattern of income recognition inherent in some common methods.

MR. PAUL ANGELO: This is Session 76, which is on asset smoothing methods and is called, "Settling The Dust on Smoothing the Assets." My name is Paul Angelo; I'm a consulting actuary with the Segal Company in our San Francisco office. My co-presenter is Jim Holland from the Internal Revenue Service, and our topic is asset-smoothing methods, focusing on the regulatory history, with a good amount of sermonizing thrown in. That's my job. We'll also be going over some of the convoluted regulatory history. I'll be asking Jim, "What were they thinking?" and then maybe we'll get a hint of where the Service will be going forward in terms of reviewing applications and possible new guidance on automatic approvals.

The scope, again, is methods used to smooth fluctuations in the market value of assets. These are called actuarial asset valuation methods under IRS code Section 412(c)(2)(A). We will not talk particularly about the accounting analog of this. That's the market-related value of assets under FAS 87. We will be focusing on deferred recognition methods. That will make sense in a minute; that's a particular

family of methods. And we're not going to talk about how you figure out what the market value is. So if you're invested in shoelace futures, we will not discuss how you actually assign values to those. We're assuming that the market value can be readily determined, and these are publicly traded securities.

Current research is limited, although that has changed recently. The grandfather paper of all this was published in 1968, when Jackson and Hamilton did a paper in *Transactions,* Volume 20, which has something like 119 asset methods. This is 1968, pre-ERISA, back when this was all just the frontier actuaries. All the actuarial mathematics textbooks have a chapter, so you can look at Anderson's, pension mathematics book, Barin, Winklevoss—they all have sections on smoothing methods.

In the last couple of years, there's been some research activity from the Society. They did a survey on the classification and prevalence of various actuarial values of asset methods that was published in *The Pension Forum,* Volume 13.1, August 2001. It has one way of categorizing these methods. There are several schemes for categorizing these, although none of them is perfect, and they all overlap somewhat. I will be using the Society approach in here, but also deferring to another paper, which I'll mention in a second. They did a call for research papers, and in addition to the survey on classification and prevalence, there are also some technical papers in *The Pension Forum*. As I hope you all know, all of *The Pension Forum*s are available on the Society Web site. You go to special interest and then pensions, and you can get PDF files of past copies of the pension section.

The other thing that's coming along is that the Actuarial Standards Board (ASB) has approved development of a standard. They published an exposure draft, which came out in February, and they wanted comments back by May 15. There are two significant things in there that I would draw to your attention, and we will touch on one of these as we discuss whether a particular method is good or bad, which Jim also comments on.

I'd say the second of these is less controversial. They want consistent treatment of realized and unrealized gains and losses. So if you have a method that only smoothes unrealized gains and they're still out there, or if you have a method that uses any kind of average, either a simple average or a running average, of book value and market value, that would not be an acceptable method under this second idea because realized and unrealized gains are not treated the same. Now that's modestly controversial. What I think is of more interest is the statement that the method has to be unbiased, which is no systematic bias toward understatement or overstatement, relative to market value. That sounds straightforward enough. But consider a method that we will beat to death called the average market method which, in effect, smoothes all capital appreciation, realized and unrealized. It's a method in the regs.

My feeling is that if you are invested in equities, even if you hit your assumptions—because a good part of your expected return is realized/unrealized appreciation—any of these methods that smooth capital appreciation would consistently, over time, lag market value. Is that or is that not proscribed under this method? It's not clear. I guess the other comment I want to make is that the fact that you are using a method that is not consistent with the standard doesn't mean you can't use it. But it does mean that you have to disclaim it in your public statement of actuarial opinion, saying to your client that the method they're using is not consistent with generally accepted actuarial principles, as represented in these standards. So it doesn't mean you can't do it, but it does mean you'd have to point out to the client the fact that they're using something that the ASB doesn't like. You may find also that you'll get a very different reaction to this topic among different practices. Public sector, in my experience, is still doing a lot of capital appreciation smoothing; it may be less of a problem on the corporate side; it's somewhere in between on the multi-employer front.

There's a presumption here that some of you at least are as excited about asset smoothing methods as I am. And if you are, then you have to go to the SOA Web site under the pension section right away, and print a copy of *Asset Valuation Methods under ERISA*. This is a paper that was originally commissioned as a study note. It's written by two folks at the IRS, Paulette Tino, whom I think everybody knows, and Ed Sypher, who is one of their young tigers. It is on the Web site, it's going to be published in a copy of *The Pension Forum*, and its focus is on ERISA. It has all the formulas. If you've been doing asset smoothing for a while, you know that people talk about equivalencies between different methods. All of the details of those equivalencies are laid out in this paper, as is some other analysis of asymptotic methods. So if you're that sort of person, I recommend it strongly. It does use a different classification terminology than is in the Society's survey, and this talk was originally written using the Society structure. I will mention it as we go along the Tino/Sypher structure, for there will be references to the scheme that they use.

All right, so let's look at general categories of asset valuation methods. This is, again, using roughly the classification scheme from the Society's survey. You have fair market value. That's easy. You have discounted cash flows, which are sort of a British thing, and I don't think we see a whole lot of that over here. There are various book value methods, either original cost—I hope nobody is still using that—or amortized cost, which we used to use for bonds. You still see that in multi-employer a little bit. You see contract value for all your deposit administration contracts. Those are out there. I don't like them either.

Now we'll get into the ones that are a little more prevalent in current practice. You have some that blend cost and market; it can be a simple average of cost and market. One that I have seen in public sector plans recently is to take the ratio of market to book for the last five years, average the five ratios, and apply it to the current book value. This is a tricky method, but it's out there. You also have write-

up methods. This is where the classification scheme gets more confusing then helpful. Generally you take last year's actuarial value and do something to it. First, you put in the cash flows. Then you can stop at that point, or more often you credit it in an assumed interest rate—that's kind of the purest version for the write-up method. Then you can take some sort of percentage from that preliminary value to the market value. This now starts to look like one of the asymptotic methods that gradually gets to market value. This shows up in Tino/Sypher. If your method is to take last year's value, add the cash flows, add the expected income, and then go 20 percent from there to market, Tino/Sypher calls that "scheduled recognition, with non-linear recognition." The "non-linear" is this asymptotic feature, where you gradually get to the market value. And Jim and I will have a bit of a roaring debate as to whether or not that's a legitimate approach. So this is the rolling or asymptotic recognition of whatever it is that you're deferring. One thing Tino/Sypher points out is that you can use this method to smooth total realized and unrealized appreciation. You can use this method to smooth the difference between assumed return and actual return. So, what you're smoothing is a separate decision; this is just the mechanics of how you go about doing the smoothing.

Now the granddaddy category of these methods, at least as practice is evolving, is what Tino/Sypher and the Society call deferred recognition methods. You're probably the most familiar with this one. You pick a fixed smoothing period, most commonly three, four or five years, and then you pick the component of income that you intend to smooth. The first I'll mention is capital gains and losses. You can smooth just the unrealized capital gains and losses—that will get you in trouble with the ASB twice—or you can smooth total realized/unrealized gains and losses, which will get you in trouble with ASB only once. Just as a little preview, if you use this method to smooth total realized and unrealized, this is the average market method that's in the regulations that we'll talk about in detail. You can see, again, that some of the categorization schemes are sometimes more confusing than helpful.

The method that is clearly coming into dominance as the favorite method is one in which you smooth actual return compared to expected return. You smooth against target return, which is a phrase that I use, and the expected return can be either expected on fair market value or expected on the prior actuarial value. Here again we have one of these little variations. If you define your expected return as being on market, then this is what the IRS calls the smoothed market value, not to be confused with the average market value. This is actually one of the automatic approval methods. I think this is emerging as the favorite method.

Tino/Sypher lumps together all of these deferred recognition methods and calls them scheduled recognition. Actually, I misspoke a second ago. The Society called them deferred recognition; Tino/Sypher calls them scheduled recognition with linear recognition. This means you have nice, straight five-year, four-year, or three-year smoothing.

Of the smoothed value methods—again, using the Society's terminology—the one that has perplexed me the most over time is this so-called average market value. It dates back to the 1980 regulation; it's right in there Reg. 1-412(c)(2)-1(B)(7). Sometimes it's called average market; sometimes it's called average market value. It takes the current market value and a series of prior "adjusted values"—a term defined in the regs. It averages those, and that's your smoothed value. Well, one of the things that was determined by people out in the field, and then eventually acknowledged by the IRS, is that this is algebraically equivalent to one of those deferred recognition methods in which you just spread something over five years.

It's not exactly obvious that these are algebraic equivalents. But if the income that you are deferring is total realized and unrealized capital appreciation, and if you just run it through the regular deferred recognition smoothing machine, lo and behold, you get something that is algebraically equivalent to this average market value in the regs. To get that IRS method, it's not just that you use this particular method of smoothing. What you smooth is crucial; you have to do total realized and unrealized capital appreciation.

Now a little editorial commentary before we jump into some examples. This topic brushes up against the question of who does what under ERISA. The selection of the asset smoothing method is part of the selection of the plan's actuarial funding method, which is not your job. You know the actuary picks the assumptions. As I've often said to clients with whom I felt very secure, if you don't like the actuarial assumptions, you have to pick a new actuary. This is under ERISA; it's not true so much in public sector. But it is the plan sponsor's responsibility to select the asset smoothing method, and that's why they have to check a box on the 5500 saying that they have made this change. So if this were their call, it would seem that you would want to try to lean toward a method that they could understand so that they could actually take some sort of independent ownership of this decision, which is fundamentally their decision.

I also believe—again, these are my editorial comments and are not those of Don Segal's employer or the organization here—you'd hope that if they have some sort of investment policy, which they usually spend a lot of time agonizing over, that there should be some consistency, between the way that they invest their money, including the way that they monitor their investments, and the way that they smooth their assets. The other thing, which I know Jim will agree with, is that you ought to be able to describe to them in some real-world terms, "How would we get back to market? What would have to happen in the real world for the actuarial value and the market value to end up equal and stay equal? When would we not have to do any smoothing?" These are just ways of helping clients understand and get their own independent gut feel of how a method works.

One thing I will urge you to consider is this. People tend to describe a lot of these methods by saying, "We start with the market value, and then we do something to the market value, we back things out." They tend to describe other methods by

saying, "Tell me what the income was during the year, and I'll tell you how much of that income I'm going to recognize, and how much I'm going to defer." There are methods that can be easily described in either of those ways. I would urge you to take every smoothing method that you're involved in and ask yourself whether you can understand that method from both perspectives. Can you understand it from the point of a balance sheet, that is, how do you adjust the market on a snapshot basis to get to the actuarial value? And can you describe the method on an income statement basis, that is, tell me how much I earned last year, and I'll tell you what gets smoothed and what doesn't.

I have Tables 1 and 2 for two of these methods that show the two different ways you can describe each method. Table 1 is the new favorite method, five-year smoothing of actual return compared to expected return on market value. One way you can get at it is to start with the January 1, 2001 market value and back out—this is five-year smoothing—80 percent of the gain or loss on fair market value for the most recent year, back out 60 percent for the year before, et cetera. This is normally how I tend to build the spreadsheet.

However, you can also describe this method by saying we're going to start with, in effect, last year's smoothed value, and look at what the earnings were during the year. How much of those earnings are you going to recognize during the year? First of all, because you're only smoothing income above or below the assumed rate, that means the assumed rate is the part that doesn't get smoothed. So the first thing is, you dump in the assumed return, in this version, on fair market value. And then you put in 20 percent of any fair market value gain or loss for the most recent year, plus 20 percent from the year back, and 20, and 20.

Table 1

Deferred Recognition Methods
Five year Smoothed Market Value

1/1/01 Asset Value	Earnings Recognized in 2000
• 1/1/2001 Market Value	• 2000 Assumed Return (on FMV!)
• Less 80% of 2000 FMV G/L	• 20% of 2000 FMV G/L
• Less 60% of 1999 FMV G/L	• 20% of 1999 FMV G/L
• Less 40% of 1998 FMV G/L	• 20% of 1998 FMV G/L
• Less 20% of 1997 FMV G/L	• 20% of 1997 FMV G/L
• Less 0% of 1996 FMV G/L	• 20% of 1996 FMV G/L

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Table 2

Deferred Recognition Methods
Five year Average Market Value

1/1/2001 Asset Value	Earnings Recognized in 2000
• 1/1/2001 Market Value	• 2000 Current Income (interest, dividends, rents)
• Less 80% of 2000 Cap. G/L	• 20% of 2000 Cap. G/L
• Less 60% of 1999 Cap. G/L	• 20% of 1999 Cap. G/L
• Less 40% of 1998 Cap. G/L	• 20% of 1998 Cap. G/L
• Less 20% of 1997 Cap. G/L	• 20% of 1997 Cap. G/L
• Less 0% of 1996 Cap. G/L	• 20% of 1996 Cap. G/L

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In each of Tables 1 and 2, the left side is how I tend to calculate it; the right side is how I tend to describe it. And you need to be able to shift back and forth between these two approaches. If you imagine the left column this year and the left column the year before, if you difference the two—since you're actuaries you'll be able to see where this comes out—one year you're backing out 80, the next year you're backing out 60, and guess what? You've recognized 20.

If you wanted to describe the IRS average market method, which you remember is a deferred recognition method in which total capital gain/loss is being smoothed, it looks awfully similar. The left side of Table 2 looks really similar to Table 1 because all that we've done is to take these entries, where it used to say fair market value gain/loss, and now it says total capital gain/loss. This means it's very easy to modify your spreadsheet from one to the other. You just edit the line that has what is smoothed; you change it from referencing one line to another. On the right side of Table 2, where you do it on an income basis, from the second bullet down it is again very much analogous. Instead of being 20 percent of last year's fair market value gain/loss, it's 20 percent of last year's capital gain/loss.

By the way, the outline says all you have to change are these phased recognitions of prior gains or losses, but actually you also have to change one more thing. You have to change what isn't smoothed. In Table 1, the thing that isn't smoothed is the assumed return. Under average market, cash income isn't smoothed (I'm not counting realized gains and losses). So, current income, interest dividends and rents are included without smoothing. Another nice thing about this approach is that it forces you to hone in on what is not being smoothed because it's what you need for this entry.

Now the next thing in the outline is the regulatory environment, but I'm going to jump out of order. I'm going to jump ahead and do a couple of examples. I deliberately selected the same example that is in the regulations, where it's example six. It uses four-year smoothing. There's nothing magical about four, but that's what they used, so that's how I built this spreadsheet (Table 3). We'll look at a little piece of this. There's a line—line 24—where you plug in whatever you're going to smooth. If you're using "smooth against target," you plug in expected earnings minus actual earnings, which we assume the spreadsheet has available somewhere. If you're doing average market value, you plug into that line total realized and unrealized capital gains, which we assume the spreadsheet has available to you somewhere.

Then, if you wanted to do an income statement for the actuarial value, one that gets you from last year's actuarial value to this year's actuarial value, somewhere in there you're going to need what is, in effect, the change in deferrals from last year to this year. That's the 20 percent, as in the right side of Tables 1 and 2.

Table 3

Deferred Recognition Method (set up for "smooth against target")

1	**Plan Year**		1986	1987	1988	1989	1990
2	Assumed Interest		8.00	8.00	8.00	8.00	8.00
5	Jan.1 Market Val.		150,000	196,500	238,000	228,000	285,240
6	**Contributions**		65,000	62,000	66,000	70,000	70,000
8	Income - Current		8,000	7,500	7,000	10,208	15,359
9	- Realized		(2,000)	6,000	(8,000)	4,000	4,000
10	- Unrealized		4,000	(3,000)	(42,500)	8,000	8,000
11	Less: Invest. Expense. (1%)		0	0	0	(2,468)	(3,040)
12	Net Income		10,000	10,500	(43,500)	19,740	24,319
14	Pension Payments		22,000	24,000	25,000	25,000	25,000
15	Other Expenses		6,500	7,000	7,500	7,500	7,500
17	Dec.31 Market Value		196,500	238,000	228,000	285,240	347,059
18							
19	Contribs. Weighting Factor		0.50000	0.50000	0.50000	0.50000	0.50000
20	Average FMV Balance		168,250	212,000	254,750	246,750	303,990
23	Expected Income		13,460	16,960	20,380	19,740	24,319
24	**FMV gain (loss)**		**(3,460)**	**(6,460)**	**(63,880)**	**0**	**0**
25							
26	Adjustments: t	75%	2,595	4,845	47,910	0	0
27	t-1	50%	0	1,730	3,230	31,940	0
28	t-2	25%	0	0	865	1,615	15,970
29	t-3	0%	0	0	0	0	0
30	Total Adjustment		2,595	6,575	52,005	33,555	15,970
32	Dec.31 Actuarial Value		199,095	244,575	280,005	318,795	363,029
33							
34	**Actuarial Value Income Stmt.**						
35							
36	Jan.1 Actuarial Value		150,000	199,095	244,575	280,005	318,795
37	Contributions		65,000	62,000	66,000	70,000	70,000
38	Income - Actual (net)		10,000	10,500	(43,500)	19,740	24,319
39	- Adj.		2,595	3,980	45,430	(18,450)	(17,585)
40	Pension Payments		22,000	24,000	25,000	25,000	25,000
41	Other Expenses		6,500	7,000	7,500	7,500	7,500
42	Dec.31 Actuarial Value		199,095	244,575	280,005	318,795	363,029

This is a little piece of the first of the three spreadsheets (of which only two are incorporated in the transcript). Somewhere in this spreadsheet is the basic market value income statement. That allows you to calculate the average level of market value assets during the year, which then allows you to calculate an expected return during the year. You have the actual return. You difference those two at line 24, and you plug that in there. What follows is the smoothing mechanism, set up for four-year smoothing. If this were five-year smoothing these would be 80, 60, 40, and 20 instead of 75, 50 and 25. You will see that I tend to this on a diagonal. For the 12/31/86 values you take the $3,460, which was the fair market value gain/loss during 1986,—and you would back out 75 percent here, 50 percent here and 25 percent here. That gives you an adjustment. Then your actuarial value is simply the market value minus that adjustment. Note that this is very much the balance sheet approach, as in the left side of Table 1.

If you want to do this on an income statement basis, here's the actuarial value income statement. I'm plugging in the actual earnings at line 38. This adjustment is those 20s. But it's not quite the 20s because for the most recent year, I put the total market value earnings (including any investment gains and losses) in here as income. That means I have to back out 80 percent of those gains or losses, and then I add back in 20 percent of last year's and going back. This is kind of like that right side of Table 1 that had the 20s, except in the first year, you have to finesse it a little bit. The wonderful thing is that the actuarial value shown here is exactly the same as the actuarial value that you get the other way. So you can see there are two ways of getting at the same item. If you thrash around in these, you can start to get a feel for the equivalence between these two different ways of looking at the methods.

The full spreadsheet actually shows two different automatic approval approaches. We haven't gone through the details on this, but approval 15 says apply the method as though it has always been in effect, and approval 16 says apply it only going forward. As you can imagine, you can get both those off the same spreadsheet; all you have to do is change the adoption date. Those are labeled on the full spreadsheet.

There is another thing to watch out for, if you have your total asset gain/loss on actuarial value, and you're really trying to reconcile it back to its components. After you try to break it into 20 percent of last year's gain and all that, under this method, we are smoothing any return above or below the assumed rate on market value. But your actuarial value starts at actuarial value, so you will have an extra little gain/loss piece equal to assumed interest times the difference between beginning of year market and beginning of year actuarial. So if you really try to slice this down to get an independent check, you have to watch for this piece. I tried doing this in a spreadsheet; I think I got within a couple of dollars. There's always rounding error.

Now comes the fasten-your-seatbelts part of the talk. I want to try to convey the algebraic equivalence between the two different ways of looking at the average market method. This second spreadsheet (Table 4) does approvals 11 and 12. Again, the only difference between the two is that 11 assumes the method has always been in effect, and 12 assumes that it's adopted from today forward. But that's not quite true. Approval 12 actually assumes that the method was adopted one year ago. That's a little quirk in the reg.

Table 4

Average Market Value Method, Approvals 11 and 12

1	Plan Year		1985	1986	1987	1988	1989
5	Jan.1 Market Val.			150,000	196,500	238,000	228,000
6	Contributions			65,000	62,000	66,000	70,000
8	Income - Current			8,000	7,500	7,000	10,208
9	- Realized			(2,000)	6,000	(8,000)	4,000
10	- Unrealized			4,000	(3,000)	(42,500)	8,000
11	Less: Invest. Expns. (1%)			0	0	0	(2,468)
12	Net Income			10,000	10,500	(43,500)	19,740
14	Pension Payments			22,000	24,000	25,000	25,000
15	Other Expenses			6,500	7,000	7,500	7,500
17	Dec.31 Market Value		150,000	196,500	238,000	228,000	285,240
18							
24	**Total Capital Gain**			**2,000**	**3,000**	**(50,500)**	**12,000**
26	Adjustments: t	75%		(1,500)	(2,250)	37,875	(9,000)
27	t-1	50%		0	(1,000)	(1,500)	25,250
28	t-2	25%		0	0	(500)	(750)
29	t-3	0%		0	0	0	0
30	Total Adjustment			(1,500)	(3,250)	35,875	15,500
32	Dec.31 Actuarial Value			***195,000***	***234,750***	**263,875**	300,740
33							
34	**Adjusted Values (IRS)**						
35	Net Adjustments:						
36	Contributions			65,000	62,000	66,000	70,000
37	Pension Payments			22,000	24,000	25,000	25,000
38	Total Expenses			6,500	7,000	7,500	9,968
39	Interest and Dividends			8,000	7,500	7,000	10,208
40	Net Adjustments for year			44,500	38,500	40,500	45,240
42	Dec. 31 Market Value		150,000	196,500	238,000	228,000	285,240
43							
44	Adjusted Values t			196,500	238,000	228,000	285,240
45	t-1			194,500	235,000	278,500	273,240
46	t-2			194,500	233,000	275,500	323,740
47	t-3			194,500	233,000	273,500	320,740
49	Average Value			***195,000***	***234,750***	**263,875**	300,740

Let's look at the spreadsheet. For the average market method, the top part uses the same machinery that I used in the previous spreadsheet, in which I start with the market value and back out what I'm smoothing. That's fairly straightforward. Note that line 24 used to be fair market value gain/loss, and now it's total capital gain/loss, which again came from upstairs somewhere. So if the total capital gain is $2,000, under four-year smoothing this works exactly the same way. You back out three-quarters of it; the next year you back out half of it; the next year you back out one-quarter of it. The only difference between this and the smooth-against-target approach is what you put in that line 24. Other than that, they're exactly the same.

The only difference between approval 12 and approval 11 is that approval 11 says I adopted this at 12/31/88 and applied it as though it had always been in effect, whereas approval 12 said I'm going to start with market value and then run the method going forward, although that's not quite true. I'm not sure if this was deliberate or not, but approval 12 actually works as though you had adopted the method one year ago, sort of a one-year retro approach. Now the ugliest part of this is to try to see how the IRS approach that's in the regulations comes up with the same result.

In the reg we have net adjustments. The net adjustments don't get smoothed. So for this method, the net adjustments are cash flows, contributions, benefit payments, current income, interest, dividends and rents. The first adjusted value is market value. The next adjusted value is last year's market value—that's 150,000—plus everything that happened between last year and this year that isn't being smoothed. Alternatively, that adjusted value is this year's market value, excluding what does get smoothed, which in this case is total realized and unrealized capital appreciation.

So the 194,500 is last year's market value, 150,000, adjusted for all of the unsmoothed stuff. Now this is the weird part. In the description of approval 12, it says that you first take the market value, and then instead of using the previous three adjusted values, you use last year's adjusted value three times. If you think about it, if we had adopted this method at the end of 1985 and at the end of 1986 we are smoothing for the first time, this is how the method would look. You would take one year of market and then you would take your prior adjusted values, but they're all set equal to the one adjusted value you have available.

How do we convince ourselves that this is the same as the method above? Well, let's think about total capital appreciation during the year 1986. Where is it? It's in here; it's in the $196,500, because that's the current market value. So that has all the gains and losses for the year just ended. It's not in the $194,000, which is last year's market value brought forward with everything except the total capital appreciation. So what happens is, if you take four numbers, and one of them has something in it and the other three don't, then the average includes only one-

quarter of that number. So you have recognized one-quarter of capital appreciation during the most recent year, which is exactly what you get for this smoothing method up above. That's the equivalence of these methods.

If you really want to beat it to death, go over here to approval 11, where you apply the thing going back four years. Look at each of these numbers, and you can figure out that the $228,000 is a market value right above. The $278,500 has all of the capital appreciation through the end of last year and none for the most recent year. The $275,500 has all of the capital appreciation from years one and two and none for three and four. You see where we're going. You end up doing exactly the same sort of 75, 50 and 25 phasing in, but you do it in a method that is as obscure as could possibly be devised. So that's another one of my running questions: Could we have found a more obscure way to describe this method? I have not managed to find one. But it is the same and if you like playing with spreadsheets, go home and build one of these. If you like formulas, Tino/Sypher has a detailed algebraic derivation with little summation signs everywhere actually proving that these two methods are equivalent.

Regulatory Environment

In regulatory matters, it's always nice at some point to hook back into something that actually came out of Congress. Section 412(c)(2) says these methods have to be reasonable, they have to take into account fair market value and they have to satisfy the regulations. There is only one reg on this out there, from 1980. The first part is pretty easy. It says it has to be consistent. You have to state the dates. You have to describe the method. That sounds reasonable. You have to either reflect fair market value or something called the average value. That's our friend, the average market. They also had corridor limits, which said that you either had to be within plus or minus 20 percent of fair market value, or within plus or minus 15 percent of average market value. Note that the 15 percent part was removed in a later law.

The point to make here is, under the reg, what is the role of the average value? The average value, in effect, is the out-of-bounds marker. A method can be consistently above or below fair market value, as long as it doesn't go outside a range, based on this average value. I want to underscore that. It wasn't that the average value was the right method; it was that the average value was how far you could vary from market value. So again, these are the out-of-bounds markers. As long as you live between them, you're okay.

One of the comments Jim made to me as we were preparing was that this average market method, however it's described, actually came out of the discussion process on the regulation.

MR. HOLLAND: This is where I get to start editorializing a little bit. If you took the trouble to go back and look at the first set of proposed regulations under asset

valuation methods, this average market value, with its 858 to 115 percent corridor, was not in it. It was comments received from the industry, from the actuarial organizations and perhaps even the Academy Pension Committee, if it was around back then, that suggested that we put this method in. I guess we could say we're guilty of following the comments and putting it in. You'll see as we get a little bit more into today that, in hindsight at least, this might not have been a good idea. But that was there because of comments received from the regulatory process.

MR. ANGELO: If we think of this not as the way it's described in the reg, but as five-year smoothing of total realized, unrealized gains and losses, again, this is a method that is still in practice today. You do see this method around. So the question of how it was algebraically described is more or less beside the point, but the method is certainly one that's been with us a long time. Back in 1980, we were all less sophisticated. It was definitely out there.

MR. DONALD SEGAL: I just want to go back over something. In describing the average value with the corridor, you said that there was no restriction in there, that it could be consistently, let's say, below market value. You said that there was no restriction, but I thought there was something in either the code or the regs that said a reasonable asset valuation method had to have no bias.

MR. ANGELO: Not at this time.

MR. HOLLAND: I'll take it. Distinguish carefully between what the current proposed standard of practice says, which uses the words "systematic bias," versus what the regulations say, which is a little bit different. It doesn't use the word "systematic." It tends to use the word "bias." It talks about overstatement or understatement of market value. They're using different language, and arguably they mean different things or could mean different things. In talking about the revenue procedures, 85-29 was the first time we included automatic approval for asset valuation changes. The purpose of 85-29 was to handle workload. But all it said was, "any acceptable asset valuation method," without defining it more than what is in the regulations. The regulation just simply says it cannot consistently be above and below market, without any interpretation or guidance as to what precisely that means.

So arguably it's a little bit different from what the current proposed standard of practice would provide. But this word in the regulation is the genesis of some of the concerns that you will hear expressed about some of these methods. We'll get to asymptotic methods in a couple of minutes.

MR. ANGELO: My understanding of what it said back in 1980 is that you can be consistently above or below fair market value as long as you're in this 85 to 115 corridor defined by average market value.

As discussed earlier, this average market value is a deferred recognition method. The algebraic equivalence is actually stated in Revenue Procedure 95-51, where the IRS 'fessed up to it. And the algebraic details are in Tino/Sypher.

Now, historically, we go into a nice period, when they started doing revenue procedures, which is the source for guidance on automatic approval. Revenue Procedures80-50 and 81-29 had entry age normal and they had unit credit, but they did not mention asset-smoothing methods. The first one to mention them, as Jim just mentioned, is 85-29, and it says you can use any acceptable asset valuation method. Thanks for clearing that up. This is where we introduced the three-year cycle; that is, you can only receive automatic approval once every three years. But really there is no such thing as a specified, described-in-particular automatic approval method.

Then we had a 10-year period during which there was, I think, a certain amount of back and forth discussion between the Service and the practitioners. But really, this was sort of the golden era of asset smoothing methods because you could use, like it says, any acceptable method. Then came 95-51. That was a dark day.

MR. HOLLAND: I need to inject a historical note here. In 1987 the law changed to specifically state that the part of our regulation that provided for the 85 to 115 corridor around this average value was null and void, to put it in nonlegal terms. It just says, "Forget it. You can't do this." It didn't say that the method itself was a nonacceptable or acceptable method. It just said you can't have this two-tiered type of corridor. So that left us with only 80 to 120 percent of market. We haven't amended the regulations to reflect this change in law, but the law itself was quite clear and quite pointed.

The second thing is that 85-29 originally had a five-year sunset date. It was extended a couple of times, and it sunset at the end of 1993. So from 1994, there were no automatic approvals of any sort. Everybody had to come into us. That was by design. We had the resources, and we wanted to see exactly what people were considering as acceptable methods of various sorts, what they were changing to, and take a more focused regulatory approach to the situation. Based on what people were coming into us for approval of, and what we thought about the various methods of every kind, we then wrote 95-51, with its subsequent amendments. I'll turn it back over to Paul.

MR. ANGELO: First of all, 95-51 said you get automatic approval for market value. That's nice. And it said you could get automatic approval for average fair market value, also known as average market value, and it referenced the regulation. There were actually two approvals. This is when we started to get this concept of with phase-in and without phase-in. I have a lot of trouble remembering which is without phase-in and which is with phase-in. I tend to describe them as retro or nonretro, full retro, one-year retro, and that kind of thing.

Generally speaking, though, the earlier number is where you apply the method as though it had always been there, and that is called without phase-in, because you basically jump all the way into the method. So approval 11 is full retroactive application of the method. Then with phase-in, which is number 12—you might have thought it would start at market value and go forward, but that is not the case. It actually pretends that you adopted it a year ago. Approval 12 is one-year retro. I actually like the idea of one-year retro. If you're smoothing against target and it's the late 1990s, the assets are going up, up, up, and your client is saying, "We have too much assets off the table." So you want to get to market, but you don't necessarily want to mark to market when you might be at a peak. There's something to be said for recognizing all the market value gains up through the end of last year, then taking the gain in the most recent year, and smoothing that. We're going to hold a little bit back. That seems to me to be a prudent method, but I would hesitate to infer that's what the IRS had in mind when they were designing Approval 12.

MR. HOLLAND: Well, no, but we'll start to compare and contrast. Look a little bit closer at this method. It does two things that are anomalous from general smoothing and are hard to explain, at least in today's terms. People older than me might have a different view.

1) It treats interest income, such as ordinary bank account interest, the coupon payments on bonds, those sorts of returns, different than capital appreciation and depreciation. Now theoretically speaking, why this difference? It doesn't make any sense. Well, that's number one.

2) Besides spreading just capital realized or unrealized depreciation, it spreads it without regard to what you expected. So, let's say that you had a crystal ball and you precisely put in your assumptions. "I expect 10 percent interest," and the capital appreciation, whether or not you recognized it, was exactly the 10 percent that you assumed, you hit it right on the button, what happens? This method spreads it. It's a trap. Why are you spreading something that has no link whatsoever to what the assumed interest rate was? In one sense, on a market basis you are correct; on the asset side, there's no gain or loss. And what happens? This method spreads it. But this was a method that practitioners asked us for. So we gave you a method that spread all your return, even if it was precisely what you expected. Congratulations, you now have a source of gain or loss.

It sounds a little ridiculous, but that's what the method does. Now when you're talking about going retro or one-year retro—in that context there's no reason to spread things that do not deviate from what you expected, and yet this method does. It's not my favorite method, as you can probably tell. You can understand why Congress might have said that it's not appropriate for a corridor. When you start talking about this method versus other things, that consideration is a big one to me. It has that difference, and if you contrast that with another method, it looks

the same in the description. You change a few little things. You change and you go back to Tables 1 and 2.

Paul had these wonderful tables. One says 20 percent of fair market value gain or loss. The other says 20 percent of capital appreciation or depreciation. He called it capital gain or loss. But really, when you start getting down to the details of that, the capital gain or loss has nothing to do with what you assumed. A fair market value gain or loss such as he was describing has a lot to do with what you assumed. So you could say there's a subtle but huge distinction between reflected differences of assumed versus actual in some respect versus whatever you return, without regard to what you expected. I'll come back to that theme in a minute.

MR. ANGELO: The description of this session says that we'll go through a case study of the evolution of smoothing methods. It actually touches on exactly what Jim was saying, so I'll follow with that at this point.

There's a group of 20 county retirement plans in California. They're all under the same law. It's pretty much the same vendors that work on them, and they all go to the same meetings. They were founded back in the 1940s, and they used to be invested exclusively in fixed income, and they used to use book value. Well, you know book value, and they got a little tired of that, so they started—this would be through the 1950s and the 1960s—smoothing unrealized gains. They really didn't trust unrealized gains. It's paper, its just funny money. It's not real money like interest and dividends. They would smooth unrealized gains over five years because they didn't want to have big jolts when the securities were sold.

The actuarial community let them know that they were setting themselves up to have their returns manipulated by trading activity. They would get to the end of the year, and they needed a certain level of earnings. They figured out that if they had an appreciated stock for which the appreciation had been phased in 40 percent, and if they called the broker and said, "Sell that stock," suddenly the remaining 60 percent would show up. We have actual cases of when those phone calls were made. We eventually tried to convince this market that if you're going to smooth, you need to treat realized and unrealized gains the same which, by the way, starts to sound like the Actuarial Standards Board opinion. So we convinced them that they should be smoothing realized and unrealized gains. That's the average market method. So that's what they were doing through the 1990s.

Then in the 1990s, as they all shifted over to equities, and as the equities started to outperform, we went through the discussion that Jim just outlined. I'd actually try this on them. I would ask the board of trustees, how many people know what your market value return was last year? They all knew, I mean to a decimal point, like, 18.4 percent. I said okay, fine. Now of the 18.4 percent, how much was current income—interest, dividends, and rents—and how much was realized/unrealized capital appreciation? Nobody knew because when they sift through all their

investment reports nobody talks about how much of the income is realized and unrealized or current or capital. It's all focused on managing total return.

Our pitch was, if that's how you manage your money—and this gets back to my earlier editorial comment—if your focus as a trustee is managing for total return, then why use a smoothing method that forces you to ask questions about that return that you would not otherwise ask? This is another way of getting to Jim's point. If the focus is on total return, then let's find a method that looks at the total return. Another good way to describe it to them was to ask, "What is the real-world condition that would get you back to market?" Under this method I can tell you exactly how you get back to market. You need five consecutive years of no capital appreciation. That doesn't sound like a good idea, but that's what your method is focusing in on. Under the method in which you smooth against target, the way you describe the external real-world condition is that if you're assuming eight percent, if you earn exactly eight percent five years in a row, then your market value and your actuarial value come together. Now that's a condition they can understand.

So all of this really went in the same direction as Jim's comments, which is to move away from these methods that divide the income into different components. That's really not how trustees run the assets, unless you get into mature plans where you're managing cash flows, which usually doesn't find its way into the assets smoothing discussion anyway.

Back to the history. It used to be that average market was the limit for leading and lagging market, and then it became the only smoothing method that received automatic approval. This is somewhat ironic, now that Mr. Holland has trashed the method, that we had this period of time during which the method that everybody now likes required automatic approval, and the method that is moving out of favor was the one that you could actually get without writing into the Service. Well, that's how we mature.

From 1995 to 1998, everybody was waking up to the smooth-against-target approach, but you had to send it into the Service for approval. I gave a talk on this in 1995 and again in 1998. When I gave the talk in 1998, I collected some anecdotal evidence of real-life cases of sending methods into the Service. Now that everything that was worth doing needed automatic approval, what was the experience with the Service? I had two interesting stories. The first one was that if you were using a fixed period for recognition of deferred income—that is, you were phasing in over five years at –20 percent per year—the IRS was pretty adamant that you really needed to get back to market in five years. You need a reasonable return to market condition.

What we also found, and I've got this in the file, is a method that was submitted and disapproved; then it was re-characterized in a different algebraic formulation, and it was approved. It was exactly the same method. This is the shifting back and forth between how you describe the method. So that was kind of fun. For the fixed

period, the smooth against target method, it got to where you had to have not only the right method, but you also had to describe it the right way. Fortunately, that was addressed in 98-10, which added three more automatic approval methods, including our favorite. And by the way, this is the end of the Rev. Proc. story. Rev. Proc. 2000-40 is a compilation of all the automatic approval methods, but it does not add any new asset smoothing methods. So you get the whole story if you just go through 98-10.

Before we go through Rev. Proc. 98-10, one more anecdote from 1995 to 1998. There was another firm that got class approval for a method that, in effect, did all the current income adjustments and then went 20 percent between that adjusted value and the market value. So there were approvals going out for the asymptotic.

Back to 98-10. First of all, what the IRS calls smooth market value, in which you smooth the earnings above and below the assumed interest rate, became an approved method. It was done in two ways. You can either do it without phase in—that is, you apply the method as though you're doing five-year smoothing, as though it had been in effect for the full five-year smoothing period—or you can do it with phase-in, in which you start at market value and then smooth going forward only. Now this means that the approach that I would favor—especially an up market—where you go one-year retro, would require special approval. Automatic approval is only for mark to market and smooth going forward, or apply the method full retro.

MR. HOLLAND: This is where I get to editorialize some more. We're answering all the tough questions that we know are in everybody's minds.

Why these two choices? Well, the problem was that by 1998, we were starting to see what I would call a disturbing trend. People who made a change in 1996 through some sort of smoothing suddenly were coming in and wanting to fresh start at market. Why? Basically, they had up years. Most of the middle to late 1990s were up years. The concern was that people were going to start cherry picking what experience they would recognize or not. So we said, "You can go back five years if you want to do that. If you don't have the data, or if you just took over, and you don't want to try and reproduce the data, we'll let you start today."

We feel an element of gaming gets added to it when you can go back one, two, three, four or five years or whichever. So we were concerned about that because as we got into 2000, without knowing it, we were reading a crystal ball that realized that what goes up must come down. Indeed, as we've seen in the past couple of years, it has come down, and we were anticipating what people would do in a down market. So the restrictions that went in and the conditions about which we let automatic approval, as we get to talk about it more, we follow through in a lot of the requests that come into us. So these are the two choices. And I could probably firmly say if you came into us with a one-year retro idea today, as so many people have, we nicely but firmly tend to disagree with it.

MR. ANGELO: I guess the place I would push back would be, if the point of smoothing is to smooth—on the upside, if you're willing to defer one year of gains, you hold something back—why would it not be reasonable on the other side? You basically want to do some recognition of market value, but you don't necessarily want to go all the way down the trench, so you take in a certain amount of bad news and just leave the last year.

And the other thing I would hide behind is, if you could only do this every four years—if they're willing to place a bet and then stay with it for four years—why not let them do it? Then if they come around in two years, you say, "Sorry, you have two more years."

MR. HOLLAND: Well, actually that's what we were seeing, people who made a change say in 1996 or were coming in 1998 for approval to restart at market because they got too far away from market. For whatever reason, they're smoothing. They would claim they were too far away. It's funny, I don't think I've seen anybody come in in such a way that they wanted to defer the recognition of gains. Everybody wants to accelerate the recognition of gains and, quite appropriately, get maybe another contribution holiday, as some people call it, because they would be fully funded.

MR. ANGELO: It's always possible to presume the worst of the plan sponsors. That's probably a safe bet in many cases. But I know I've had live situations where, when the market was going up, they really didn't feel it was prudent to go all the way. In fact, they wanted to go one-year retro so they could defer some gain. I think there are more prudent, real-world client attitudes out there than maybe you give them credit for.

MR. HOLLAND: A quick follow-up for Don's questions.

MR. SEGAL: First, I agree with Paul's position on this full retro. But second, the corridor—you talk about people wanting a change because they were getting too far away. And the corridor, I guess from the IRS's point of view, keeps them from getting too far away. But that's sort of a limit outside of the corridor. If you chose to change the corridor, is that deemed to be a funding method change?

MR. HOLLAND: The answer is yes. If you want to artificially restrict your asset value to something other than the regulatory corridor, and you want to then change into something that is more restrictive, that is a change in method; it's a change in your methodology because you would not have been doing that prior to the modification of your formula.

Let me take a minute and editorialize a little bit more on the asset valuation regulation. Arguably, maybe even at the time but certainly in hindsight, you could say this regulation was not well thought out. Reading simply the regulation, one could come away with the idea that it would be perfectly okay to smooth somehow,

to use some sort of averaging, over a 1,000-year period. There's nothing in the regulations that says you have to smooth or modify in *n* years. It would allow you to do literally 1,000 years, just to pick a gross number, the only restriction being this 80 to 120 corridor. Now you somehow matched this up against the two thoughts. 1) As a practical matter the cash you pay out of a plan is going to be based on market. You don't pay out an actuarial value; you pay out cash dollars, so you're going to have to convert assets to cash at some point in order to pay it. Or to borrow from the Supreme Court, when they were considering primitive transactions, you don't pay out truck terminals to participants; you pay cash to participants.

Some day any of these assets will be converted to cash, and they would be converted at market at the time, whatever that is. That was the focus of Congress when it said it has to reflect market value. Arguably, one could read the Congressional intent of restricting the type of corridor that was there to one that was based solely on market rather then average market value as a direction to move that.

So the regulations in effect allowed this 1,000 years. Then, it had had this sort of unexplained, if I can call it that, requirement that it not be consistently above or below market, without a whole lot more elucidation. Some of us have thought about that a little bit more in the ensuing years and, setting forth what we're willing to approve automatically, in some of our minds these thoughts are reflected. If you consider for a moment a five-year smoothing—forget what we're smoothing for the moment; let's just be a little bit vague on that—when you're recognizing 20 percent, which is the outside amount in our automatic approvals. You have some amount of assets and only 20 percent of those gains or losses are being recognized on some basis, and you have a five-year amortization of that. So you have a five-year amortization of 20 percent of the experience. So the bottom-line cost is in the area of about four percent, without being too mathematical about it—a four to five percent impact on the actual minimum funding requirements.

So in one sense, if you have an asset gain or loss on whatever basis it's measured by this asset valuation method, the actual contribution that you're being asked to put in is only four or five percent in a given year. You start recognizing more over next year, but if you just follow that one-year's worth of experience through the amortization pattern, in effect you really don't fully amortize it one way or the other until about nine or 10 years from the time it happened. Now that arguably is a fairly long period, considering ERISA originally had 15 years, and Congress suggested in 1987 that it go down to a five-year spread. So you have to look at those things together. Do we really want to see situations where yes, you have a five-year amortization, which arguably is restrictive, but a five-year amortization of two percent of the gain or loss? That kind of analysis underlies some of what's in these automatic approvals. You want to think about that a little bit more in the context of your standards of practice and my standards of practice too, in a sense, because I'm a member of the Society and a member of the Academy.

You have the amortization process that asks how do you recognize, on a cash basis, the gain or loss? The gains or losses are calculated based on how you value assets. So philosophically and from a policy perspective, what we're discussing here matters because the bottom line is that you're going to somehow translate all this to cash going into the plan—or not going into the plan, in the case of a gain. Ultimately to the plan sponsors, whether they are private or public, that's what matters.

MR. ANGELO: As you might imagine, we've actually had some of this conversation before. I have it in my idealized regulatory environment here. I'm going to jump over method 17; I save that for the entertaining close. We already talked about the editorial commentary. If you're doing actual versus expected, it's consistent with that total return investment policy. Also, it satisfies a reasonable condition on how you get back to market.

Now this is self-serving, but it's going to be obvious. The fixed period is easier to describe, but it is volatile. I don't know if you are seeing that yet. If you're doing five-year smoothing of total return compared to expected return and you get to where that last gain year falls away and you have the bad year that follows still looking at you, that will throw a jolt in. Five-year amortization may or may not keep your plan sponsors out of having to deal with it. A rolling period, on the one hand, never gets there, but it is considerably smoother. The part that I threw back at Jim when we were planning this ahead of time is, if we assume that over time that the good news and the bad news will average out, if you are smoothing against your assumed rate of return, if your assumed rate of return is the correct rate of return, you avoid getting far away from market because the good news and the bad years will cancel each other out over time. I'm not saying that we've come to an agreement on this, but that would be my push back. I am a huge fan of this rolling or asymptotic smoothing because I think that philosophically it still gets you a systematic recognition, and it just has far fewer kinks in it.

MR. HOLLAND: On some cases that have come in for approval, something I've utilized is meeting him a little bit of the way. I won't quantify it whether it's halfway, or a third, or anything, but the comeback to that is, there's some concern about getting back to market here and never quite getting there. That's what an asymptotic method does, particularly if you have a continuum, where you're rolling up in the same direction.

There is a way to solve that. It's what I call the attractive method or the black hole method—or it's like attractors, probably a more appropriate description—and that is when you get close enough, you close the gap to market. If you take a viewpoint for a moment that three percent is a de minimus amount of assets, that when your asymptotic methodology gets within three percent of market, you then close the gap and go right to market. That takes care of the objection that you're forever above and below. Because remember, a methodology (I'm going to have some fun here) that says your actual value of the assets is 99.9999 percent of market, while

close, does not meet the regulations. One way to deal with this concern with the asymptotic methods is to say, "When you get close, you close the gap and you go to market." That preserves a little bit of the ability to spread an amount you might like better. And yet, when the total amount gets close, you close that gap. We've done that in some of our actual approvals where we otherwise could reach agreement on how the asset valuation methodology was working.

MR. ANGELO: We're getting pretty close to the end. Since I'm up here, I get to do the part I like, and I want to talk about Approval 17. It does start at market and go forward, so it's a "with phase-in" method. But it is not the same as method 16, which says in the year after you mark to market, you take whatever your gain is, and if you're on five-year smoothing, you smooth it over five years. It does not do that. Instead of a spreadsheet example, I'll give a more generic one.

Unlike Method 12—where you took the market value and then three of last year's adjusted values—Method 17 says that in the year after the change, you use two adjusted values; the year after that, you use three adjusted values; the year after that, you use four until you get to n. What that means in effect is that you are doing two-year smoothing for the first year, and then the next year you're doing three-year smoothing, including that year that you started out smoothing at two. So if you look at the gain or loss in the year following adoption, you defer one-half the first year; you defer two-thirds the next year; you defer three-quarters the next year. And again, if you look at it from the balance sheet approach, it appears to make some kind of sense.

However, if you look at it from the income statement approach, because the averaging period is one, two, three, *n*, it produces let's say a curious pattern for recognition of capital gains and losses.

Let's suppose you adopt this, and the year following adoption you have a capital gain of 60, 60 whatever. Table 5 is for five-year smoothing. The idea is that if you look at the amount deferred, it doesn't look too crazy. The first year, you're deferring half; the second year, you're deferring one-third; the next year, you defer one-quarter; the next year you defer one-fifth; and the next year you defer none. That looks fine. But take the differences. The problem is if you take one-half minus one-third you get one-sixth. If you take one-third minus one-fourth you get one-twelfth. You take one-fourth minus one-fifth you get one-twentieth, but then if you take one-fifth minus zero you get one-fifth.

Table 5

Approval #17, adopted 12/31/1995

Five year smoothing

Assume a $60 million capital gain/loss in 1996

Valuation date	Amount deferred as of valuation date	Amount recognized since last valuation
1/1/1997	$30 million	$30 million
1/1/1998	$20	$10
1/1/1999	$15	$ 5
1/1/2000	$12	$ 3
1/1/2001	$ 0	$12

[34]

So the pattern of gain recognition is, you do half of it in the first year, you do a sixth of it in the next year, you do a twelfth of it in the next year. You do a twentieth of it in the next year, and then you do a fifth. This again was one of these things that you discover late at night, and you're thinking, "This can't be right." But it is in Tino/Sypher, so I have backup on this.

Has anybody here even considered using approval 17? I realize this is something of an academic discussion.

MR. HOLLAND: Keep in mind it's a capital gain or loss. There's nothing to do with assumptions. Just focus on that.

MR. ANGELO: Right. This method fails on both what you smooth and how you smooth it. Not counting market value, how many automatic approvals do we have on earth? We have smooth against target, both no retro and full retro; we have smooth capital gain and loss, one-year retro; we have smooth capital gain and loss, full retro; and we have this mess. So of the five automatic approval methods that are out there, this is one of them. I don't think Jim is in a position to try to defend this. He did try to help me understand the process that led to this, and we didn't get very far.

MR. HOLLAND: The only thing about this is the starting point is at the date of the change. Method 11 assumed it was adopted way back. What Method 17 does,

putting aside how the smoothing works, is prevent somebody from having to go back and ask those questions: what your total return is, how much capital appreciation or depreciation was. No one knows the answers to that, let alone whether it was recognized or unrecognized, so you can go forward. It was just done in a way that has an interesting effect, shall we say.

MR. ANGELO: Indeed. This concludes our prepared remarks.

MR. HOLLAND: I have five minutes. We skipped over a part. Approval 15 bases the expected amount on previous fair market value, not on the previous year's actuarial value (Table 6). And indeed, I've told many people who have come in using the previous year's actuarial value that I would not approve that. And part of that is what B up there says: how do we get back to market? It has an asymptotic affect, and we solved it by this attractor approach that I've described. But the problem in using fair market value is that it produces an additional gain or loss component. The bottom of Table 7 is really when you get down at the bottom of the math. Basing the expected on previous years' actuarial values leaves out completely the interest or the expected interest on fair market value versus actuarial value. If you start out and you're deferring 80 percent of the recognition, when you go to compute your next year's expected value of assets under the way some people had wanted to, you're leaving out all the assumed interest on the 80 percent amount deferred, 60 percent from the previous year, et cetera.

Table 6

A. Deferred recognition of "actual vs. expected" earnings

- **4. Determining expected income**
  - **a. Big debate: based on prior Actuarial Value or prior Market Value?**
  - **b. IRS approval and "how do we get back to market" argue for FMV**
  - **c. Rolling period seems to require using AVA**
  - **d. Using FMV does introduce an additional MFSA gain/loss component**

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Table 7

C. Deferred Recognition sheet shows Smoothed Market Value method

- **1. Illustrates:**
  Approval #15 at 12/31/1988 or
  Approval #16 at 12/31/1985,
  four year smoothing
- **2. Implicit AVA gain/loss component:**
  (FMV – AVA) x assumed interest rate

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In years of big changes, that can be fairly hefty. If you take a different view of it, if you have a situation in which you have a new plan or you have an old plan that liquidated liabilities and assets by making a purchase from an insurance company—so that the trust value that you're working with is essentially more like a new plan than a long-time plan—this can be significant. And there's concern about letting that not show up anywhere. Instead, it has this ripple effect. It shows up way down the line as a gain or loss later. That's why we get into discussions of asymptotic approaches. At least that's not been in our automatic approvals. I congratulate Paul on highlighting this. This is the root of what's going on in there. So, that's why approval 15 is written in terms of fair market value, and when the folks come in and want to use actuarial value instead, they often run into problems.

MR. ANGELO: This is an area where Jim and I are in agreement. Standing in front of the client, trying to explain the return to market condition is difficult. You can state it here, but you get caught in a definitional circle. How do you get back to market? Well, you have to have five years of no gain or loss on actuarial value. We were trying to define the actuarial value. So you, in effect, use the value in its own description, whereas, if you use the method the IRS prefers, you can easily describe in real-world terms, that is, based on market value, the return to market condition. Otherwise you could probably sit down and figure out what the market value return would have to be for five years to have the actuarial value magically hit the target and get you back. But again, if you're trying to understand this from the trustee's perspective rather than from ours, it seems an artificial approach.

We have a raging debate is occurring within certain employers of mine. I've actually heard it argued that the fact that you avoid this gain/loss component actually is a good thing because if you're trying to describe what the future of pattern of gain/loss will be in the neutral condition, all you have to do is the 20, 20, 20, 20, whereas if you use this method, you have to throw this in there as well, if you're trying to predict the gain/loss on actuarial value.

MR. MAREL BATES: If you're using a smooth method with five years smoothing of something, so you have these little amortization schedules for four or five years, and your actuarial value hits the corridor—the 80 percent corridor, or you may have used the 90 percent, you may have narrowed the corridor—my question is, what do you do next year? I can think of two things you could do. You could pretend that you hadn't hit the corridor last year, do your calculations, and then apply the corridor again next year, or you could adjust those unamortized amounts. When you described your method, either in your client's approval or any other method, you didn't say which of those you were going to do. So what should you do, and what is commonly done?

MR. HOLLAND: I'm trying to make sure I clearly understand the question. Let me answer what I regard as the easy part. I don't think you adjust any of the amortization bases you establish. Absolutely don't do that. This is going to show up somewhere in the value of the assets in the current year depending on how you're

defining this. If you were using last year's actuarial value as your starting point, that will reflect what the movement is to be within the 80 to 120 percent corridor. If you think about it for a moment, conceptually, at least to me, what this does, if you had to either bring your assets down to 120 or up to 80 percent, is effectively alter your end-year recognition by this sum amount instead of this 80 percent, 60 percent, depending on how you describe it—Paul's described it two ways—or 20 percent a year. Instead, you said okay, I need to recognize 22 percent this year, and then next year—I guess the way it would work would be it's going to be 22 percent this year, 20, 20, 20 and 18 at the far end. In a perfect world, that's in your description of the method.

Some people have said okay, we'll do our calculation; then overall we'll do the adjustment. But I think I can show you mathematically it has the same effect as doing 22, 20, 20, and something else. Paul, I'll invite your intuition.

MR. ANGELO: My understanding of this was that you run the method as though there were no corridor, and then the last step is, you impose the corridor. Then, when you go to the next year, you continue to run the method as though there were no corridor.

MR. HOLLAND: Yes, but I think I can prove mathematically the effect of that is the same. I haven't worked it out today, but I think if I did the algebra, I'd come out with a portion to be recognized. I think Don has a comment.

MR. SEGAL: Basically I agree with Paul. Because if you read the automatic approval—we've looked at the language that the Service gave us very, very carefully—the adjustment to the corridor is the last step. They go through the entire description of it, and like the last phrase is, you then adjust to the corridor if necessary.

MR. HOLLAND: I absolutely agree with you, but what I'm saying is, I think I can show the effect. If I algebraically adjusted it without describing the procedure that you follow, the effect of it is a little bit different. We'll solve this another time. And the next time Paul has a presentation, we'll probably have an additional piece.