

**RECORD OF SOCIETY OF ACTUARIES
1986 VOL. 12 NO. 1**

**THE BETTER ALTERNATIVE? --
DEFINED BENEFIT OR DEFINED
CONTRIBUTION RETIREMENT PLANS**

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Panelists: LARRY LANG
ERIC P. LOFGREN
Recorder: MICHAEL ROBERT RAHN

The pros and cons of both types of plans will be debated. Employer and employee objectives, and which ones each type of plan meets, will be highlighted. A discussion of the range of hybrid plans also will be included.

MR. F. JAY LINGO: I'm with Touche Ross & Co. of Minneapolis, Minnesota. Our primary purpose is to take a look at Defined Benefit and Defined Contribution Plans, first from a traditional standpoint and then at some of the hybrid approaches being used these days.

I would like to introduce our panel members. Larry Lang is an actuarial consultant with The Wyatt Company in Dallas. He has written several articles for such publications as *Pension World* and the *Journal of Pension Planning and Compliance*. Larry will summarize a case study that he has put together for one of his clients who was considering terminating a defined benefit plan and setting up a defined contribution plan. His work involved putting some quantitative projections on the values under the current defined benefit plan and defined contribution plan that I think you will find interesting. Eric Lofgren is with Mercer-Meidinger in New York. Eric is a consulting actuary and principal with the firm, and his responsibilities include providing actuarial services and account management to many of Mercer's larger clients in the New York area.

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I would like to spend a few minutes outlining the results of a study that we did for purposes of measuring the variability of replacement ratios on a historical basis of some sample defined contribution and defined benefit plans. The study was not particularly concerned about the specific level of benefits because we chose random benefit formulas in the defined contribution and defined benefit areas. We were more concerned with the variability of replacement ratios that resulted over a 10 year period of time. I think that this study, at least to a certain extent, put some quantitative teeth in the argument that defined contribution plans, when used as a sole retirement vehicle, may not be the best in terms of providing adequate retirement benefits to retirees or assuring that adequate benefit levels will be provided. As a corollary to that, when providing adequate benefits is a primary objective of plan sponsors, defined contribution plans may not be the most cost effective or cost efficient way in which an employer can provide retirement benefits. It is important to keep in mind that there are many objectives involved in setting up retirement plans, and some of these lead away from defined benefit plans and may lead to the use of defined contribution plans.

In performing this study there were certain assumptions that we made that are important to keep in mind. We looked at 10 employees who retired at age 65 over a 10 year period, beginning on 1/1/76, then 1/1/77 and so on, through 1/1/85. We assumed that each of the individuals had 30 years of service at retirement, and the final annual salary of each of these individuals was equal to \$30,000. For purposes of the defined contribution plan, we had to make some assumptions with respect to historical rates of investment return. We used two alternatives. First, we assumed that investments were made in the S&P 500 stock index and used the total return approach assuming investment income or dividends were re-invested. Second, we used the Salomon Brothers Bond Index, again assuming that dividends were re-invested, as another measure of investment return over those 30 year periods. With respect to historical rates of salary increases for these particular individuals, we used the average increase in Social Security wages from one year to the next. We used PBGC immediate annuity rates at age 65 that were in effect at each retirement date to convert defined contribution balances to annual benefit amounts.

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The following benefit formulas were used in the study. For the defined contribution plan, the contribution formula was equal to 7.5% of annual compensation. We looked at two different defined benefit formulas. The first was a 50-50 offset plan; the second was a non-integrated plan, 1.5% times years of service times final average salary. Both defined benefit formulas used a 5 year final average salary basis.

With this background in mind, let's look at the numbers we came up with. It is important to note that Table 1 does not include Social Security benefits. These are retirement plan formula benefits only.

TABLE 1
REPLACEMENT RATIOS

Without Social Security

<i>Formula</i>	<i>Range</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Variability Factor*</i>
DC				
o S&P 500	43-56%	49%	4.59%	.09
o Salomon Bros.	21-27	24	2.45	.10
DB-Offset	28-37	32	3.38	.11
DB	38-41	39	.87	.01

*Standard Deviation Divided by Mean

On the DC side, over a 10 year period, using the S&P 500, we found that the replacement ratios range from 43 to 56%. With a mean of 49% and a standard deviation of 4.59%. We computed a variability factor by dividing the standard deviation by the mean. This is something we did to normalize the comparison. You can see that the salary replacement ratio ranges varied somewhat as you went from the DC plan to the DB plan and from one investment return basis to another. For instance, based on the S&P 500, which had the highest replacement ratio range, you would expect some wider standard deviations than you would for the Salomon Brothers basis. Replacement ratios were lower simply because of

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the investment rates of return involved. So we came up with the variability factor to make our comparison more valid. You can see that the variability factors range down from 9% for the DC plans to as low as 2% on the non-integrated DB plan. What's happened with the DB offset plan is that because we've used a constant final salary of \$30,000 a year over the 10 year period, the Social Security benefits have actually replaced a higher percentage of that \$30,000 as you move from 1/1/76 through 1/1/85, and as a consequence the actual DB benefit has decreased. There was a relatively smooth progression, I believe, of the replacement ratios on that DB plan from 37% down to about the 28% level over that period of time. If you were to add Social Security benefits payable at age 65 into those replacement ratios (Table 2), what you would find is that except for the DB offset plan, those variability factors on the right side either stayed level or increased, whereas the DB offset variability factor almost halved, down to about 5%.

TABLE 2

REPLACEMENT RATIOS

Without Social Security

<i>Formula</i>	<i>Range</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>Variability Factor*</i>
DC				
o S&P 500	63-82%	72%	6.21%	.09
o Salomon Bros.	35-55	46	7.19	.16
DB-Offset	50-59	55	2.74	.05
DB	52-69	62	5.60	.09

*Standard Deviation Divided by Mean

In summary, these numbers quantify the fact that, to the extent you are comfortable with the assumptions that went into the study, there is more variability on a defined contribution plan than on the DB side, particularly when you look at non-integrated DB plans.

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MR. LARRY LANG: What I will try to do is to give the big picture on the basic qualitative differences between our traditional defined benefit plan and the traditional defined contribution plan. I'm not going to get into a lot of detail, because Eric will talk with you at some length about the variations between these two extremes.

Which one is better? Of course, that depends on the client that you are dealing with and the company objectives, desired funding flexibility, employee characteristics (is it a young group or are there high paid, older executives who need to be attracted into the workforce?), investment risk tolerance for both the employer and the employee, inflation risk tolerance and perceived versus actual value in relation to the employee group.

Let's talk about some of the basic qualitative differences of a DB versus a DC plan. Defined benefit plans define income versus contributions from the DC plan. They generally distribute money, or most of the money, to people age 55 and over versus under age 55 for the DC plan. With respect to employee appeal, DB plans generally have appeal for an older, long service group versus younger short service employees, who seem to prefer DC plans. With respect to investment risk, this is borne by the employer under a DB plan versus the employee under a DC plan. The size of what I call a severance benefit tends to be very small under a DB plan and large or substantial under a DC program. Understandability is generally somewhat more difficult under a DB versus the DC. Flexibility to solve new retirement problems overnight, I think, is one area where the DB plan has an overriding advantage over the DC program, which really is unable to do that. DB vesting schedules are somewhat slower versus faster under the DC plan. Funding flexibility offers a range under a DB and really no range at all under a DC plan, except to the extent that the benefits themselves are varied on a year to year basis. Let me also add two other items. One is expensing. I think in light of FASB 87-88, there now are two numbers to become concerned with under a DB plan versus just one for a DC plan. The second factor may be the activities in Washington. I think as we listened to Dallas Salisbury at the Business Section and Luncheon we got the sense that the pendulum is starting to swing back in the direction of the DB program.

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With that behind us, let's look at an actual case study for one of my clients. In this situation the client was giving serious consideration to terminating the DB plan and moving on to a DC program. Calling it the Ultimate Widget Company, this was a 5 year old U.S. subsidiary of a multi-national company. There were 90 participants, with \$3.15 million in covered payroll, average pay of \$35,000, average age of 33.8, and average service of 2.4 years. The benefit formula was 60% of pay less 60% of Social Security with 30 years required. Vesting was 4-40, normal form was life only, and age 65 was the normal retirement age. For early retirement at age 55 and 10 years of service, there was a subsidy using the standard 1/15, 1/30 factors. Death and disability benefits were equal to the value of retirement benefits. In the actual study the interest rate used for option factors was fixed at 8%, and what I discovered was that there was very little sensitivity to inflation and other factors that we will discuss. I decided for this study to vary the interest rate from year to year based upon the market interest rate and tied it to investment assumptions that we will be considering. I think it is consistent with Jay's remarks that you need to have something reflective of current market conditions in order to have a fair comparison of the two plans. With respect to the funding method, I looked at both the Entry Age Normal and the Projected Unit Credit methods with the objective not being to find the funding cost, but rather a cost such that over time it would build up a benefit security ratio (BSR) not much more than 100%. I should point out here that the results that I have obtained are clearly on the conservative side, favoring the defined contribution plan. I'll show you that in a minute. I came up with a range of funding costs of 3.5% to 5.1% under the two methods. I settled on 4% because I thought it was credible with the client, but I feel I probably could have justified a lower percentage based upon the objective of producing BSRs in the range of 100%.

Having established the current program, let's look at the proposed program -- that is, to terminate the DB plan, use the resulting lump sum values as starting account balances in the new program, and annually contribute 4% of pay (this was deemed to be the long term cost of the DB plan, so from the employer's standpoint the same amount of money is going into either program). What then happens to the individuals as far as their projection of benefit values?

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A forfeiture assumption was added so that by the 6th year participants are adding onto their contribution an additional 0.5% of pay for a total of 4.5% into their accounts. We then created three sample individuals to look at, Fastback, Lowcareer and Young. Fastback is fairly highly paid, short service, relatively young. Lowcareer is a bit older, longer service and not as well compensated; and Young is an entry level individual. With respect to the assumptions used, obviously inflation drives both the wage assumptions and the investment assumptions. Wage assumptions include the salary scale, Social Security increases, and 415 benefit limit increases. Investment assumptions include here both the interest rate and the earnings credited to the defined contribution plan.

A range of 16 assumption sets was actually studied, and if we had enough time, they could have been talked about today. It makes more sense, however, to focus in on just a few of these assumption sets and allow ourselves to test sensitivity to changes in inflation and, separately, test sensitivity to changes in the spread factor. So we will use a 9% interest assumption, 6% as a wage increase assumption, a 3% spread, and 4% inflation. We will then look at 8% inflation that bumps the interest assumption up to 13% and the wage increase assumption to 10%, and we will also look at a 1% spread at the 4% inflation level that bumps it down to 7%, 6%.

We're almost there, but I have two ratios to define. The Relative Value Ratio is simply the ratio of the DB plan value to the DC plan value at any age. The Ultimate Value Ratio is determined by first calculating the lump sum value of all plans at age 65, determining the largest amount for all competing plans and then dividing that amount into the stream of benefit values for each competing plan. As you see, this normalizes the results so that the strongest plan at age 65 has a value of 100%.

With Fastback, prior to age 55, as we might expect, the DC has a substantial advantage over the DB plan. By the time Fastback reaches age 65 the relationships flip so that the ratio approaches 200%. At age 55, because of the early retirement subsidy, there is a substantial pop-up in the benefit value. A second pop-up at age 60 is due to the early retirement factor changing from 1/30 to 1/15. Now let's consider sensitivity to inflation; there is an inverse

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relationship. As you increase inflation, the defined benefit plan becomes less competitive. It keeps its advantage beyond 55 but is not quite as dramatic.

Lowcareer has a very similar pattern, but the slope is not quite as acute. The advantage of the DC prior to 55 is not quite as great, nor is the advantage of the DB at age 65 as great. Sensitivity, of course, is the same. As we pointed out, the inverse relationship here is due to the selection of an option factor that is related to the interest credited to the earnings. As that interest rate increases, of course, the value of the defined benefit decreases.

Young has a different pattern. Because of her low salary in a non-integrated DC plan, she is better off at all ages under the DC plan. This is further enhanced by higher inflation levels.

Now let's consider sensitivity to spread with the ultimate value ratio. Here the results are different. It is true, of course, that prior to 55 the DC plan is ahead of a DB plan. However, the amount of that advantage turns out to be relatively small when you put it on a scale of what the ultimate lump sum values will be. For example, between age 55 and 65, well over 80% of the ultimate lump sum value is earned by Fastback. Incidentally, there is a real Fastback and after seeing this information he just might keep his defined benefit plan. As for sensitivity to spread, as you decrease the spread, you increase the competitiveness of the DB plan. Lowcareer has a similar pattern that I won't talk about in any great detail. Young has a DC plan more competitive for all ages, but if you pick the assumptions right, there is a certain point in time where it can cross. And it does at about age 60 in this instance.

Let's summarize some of the observations with respect to this particular study. I don't offer these as general conclusions. However, I think you will find the observations agreeable with what we would expect from these two programs. Generally, the defined contribution plan appears better prior to age 55 and the DB plan better after age 55. For higher paid people this DB advantage continues to improve. For low paid individuals, it can turn out that the DC plan is better at all ages. Also, a substantial pop-up in value can occur because of early retirement subsidies. Looking instead at the ultimate value

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ratio, we are forced to conclude that the apparent DC advantage prior to 55 turns out to be relatively small when compared to the ultimate values at age 65. Now this point may not be pertinent for a client that needs to attract young, high tech individuals. They may stay 3 to 5 years, at the most, with an organization and are looking for capital accumulation. With respect to sensitivity to inflation, we've seen an inverse relationship. As inflation is increased, the defined benefit advantage is decreased. For similar reasons, we see the same kind of sensitivity to the spread factor.

Let me also point out that there are several variations to this study that one might wish to consider. One that I would find interesting to look at would be a non-integrated DC plan that costs 4% of pay. I think what we would find is that Young would tend to do better under the DB plan, or at least closer to the DC plan, but that Fastback might not do as well. We can examine mature industries or fix the option factor. This produces a lesser amount of sensitivity. We could consider adding a cash balance feature to the DB plan for comparison purposes.

One big question that is certainly open is what the variations of programs are in between the two traditional extremes. With that, Eric will visit with us regarding a number of hybrid plans.

MR. ERIC P. LOFGREN: I am going to be talking about the defined benefit/defined contribution dichotomy: which differences are absolutely inherent and which differences are merely traditional and not necessary. Then I'm going to try to put together a conceptual framework within which to analyze the different hybrids. This is really what we want to discuss: different hybrid approaches.

The most common approach, at least among large plans, is not the defined benefit or defined contribution; it's really one of each. The defined benefit plus a 401(k) might be typical. And this is not often a coordinated program. Frequently, it's really two programs. It's a defined benefit plan for retirement income needs and a defined contribution plan for savings plan needs. What usually happens is the contribution plan is very enthusiastically received, but the defined benefit plan is not well regarded. When the two plans are looked

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at separately, there is no consideration of overall retirement benefit adequacy, and for young people who stay all the way through until retirement, the combined benefits may be very generous. It does have the advantage of being competitive, since so many companies are using the same approach. But you end up with a program with portions that are either very popular or poorly regarded. The 401(k) plan will be popular. The account balances can be significant at the young ages, and the funds are accessible for non-retirement needs. The account is visible; employees can actually watch their net worth grow. The plan is easy to understand, and it is tax effective for employee savings. It might even have an employer stock option as an investment option, which will foster good feelings towards the employer. The defined benefit plan, in contrast, isn't as favorably received. Most employees may not care about retirement, since it's so far away and since they don't necessarily intend to be working for the same company 30 years hence. If there is a Social Security offset formula, which is common, it may look like a take away. Accrued benefits are very low in the early years, and they're often not vested for 10 years. From the employer perspective, since the plan is being pre-funded, the cost can often seem quite inflated in relation to the benefits. Nevertheless, some type of plan is needed for retirement income. I've seen a lot of employers that feel they need something for defined benefit purposes, but they wanted to have some type of different packaging.

In Exhibits 1 and 2 I've tried to break down the differences that Larry discussed into necessary differences and optional differences. The necessary differences really come down to the defined benefit basics: securing specific retirement income. The defined contribution basic secures a contribution, but it cannot promise a specific retirement benefit because of unknown investment performance, inflation and the possibility of annuity purchase rates or investments being temporarily depressed at the time of retirement. The defined benefit plan does have flexible funding; defined contribution doesn't.

The defined benefit plan has a more flexible benefit design in that it can provide subsidies (early retirement subsidy), which is difficult under a defined contribution plan. On the other hand, the defined contribution plan can have investment options for employee choice; this is not so with the defined benefit. Perhaps most important, the defined contribution plan can

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accommodate pre-tax employee contributions through the 401(k), which the defined benefit can't. What an employer may really need is one of each type of plan in order to get the pre-tax employee contributions from the defined contribution and to get the secure, specific retirement income from the defined benefit.

EXHIBIT 1

DEFINED BENEFIT VS. DEFINED CONTRIBUTION

NECESSARY DIFFERENCES

	<i>Defined Benefit</i>	<i>Defined Contribution</i>
o Investment Risk	Employer	Employee
o Salary Growth Rate Risk	Employer	Employee
o Funding Flexibility	Yes	No
o Benefit Subsidies	Yes	No
o Individual Allocation of Trust Balance	No	Yes
o Employee Investment Options	No	Yes
o Regulatory Impact	More	Less
PBGC Premiums		
Funding Standards		
Contingent Termination Liability		
o Pre-tax Employee Contributions	No	Yes

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EXHIBIT 2

DEFINED BENEFIT VS. DEFINED CONTRIBUTION

TRADITIONAL DIFFERENCES

	<i>Defined Benefit</i>	<i>Defined Contribution</i>
o Buildup Pattern	Slower	Faster
o Plan Defines	Income	Lump Sum
o Employee Appeal	Older	Younger
o Vesting	Slower	Faster
o Cost for a Given Income Level	Lower	Higher
o Individual Accounts	No	Yes

Now there are other differences, shown in Exhibit 2 -- traditional differences -- which don't have to be there. The defined contribution plan is typically of appeal to young employees because it has more money available quicker and shows it as a lump sum. That's not a necessary defined contribution characteristic; it's merely traditional. Vesting is typically faster in defined contribution. It doesn't have to be. The cash balance plan has shown that you can express things as individual accounts in the defined benefit plan. What we want to explore here today is what we can do within the confines of defined benefit, defined contribution plans in terms of hybrids -- what is really possible, not simply what has usually been done.

The starting point in pension plan design (Exhibit 3) is to develop a retirement goal, as some specific income level. This would typically involve a replacement income analysis that would take pre-retirement salary, look at expense reduction in retirement, subtract Social Security benefits and income

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from personal savings, and leave a net benefit needed from the plan. In conjunction, not as a second step but as a co-step, select the savings plan component. What type of savings plan level are you looking for from your plan? This is different from selecting defined benefit or defined contribution, because either one can get at an expected retirement income goal by itself. Experience might diverge, as has been explained earlier, but you can aim for an expected return and expected retirement income. As a second step, you can adapt a defined benefit or defined contribution plan to different buildup patterns of values prior to retirement. Then you decide whether to express the benefits as retirement income or a lump sum. If the benefits early are big, you can express them as a lump sum. If they are small, you are going to talk about deferred retirement income. Finally, after that, we'll come back and look at choosing a defined benefit or defined contribution plan.

EXHIBIT 3

APPROACH TO PENSION PLAN DESIGN

- I. Set the retirement goal
- II. Select the accrued benefit buildup pattern
- III. Express as income or lump sum?
- IV. Select ERISA category: DB or DC

Yearly benefit accruals can be expressed as lump sums or as present value of deferred vested retirement income. The accumulation of those accruals is what I mean by buildup pattern (Exhibit 4). The higher the buildup pattern, the higher the cost, because I am talking in the context of providing the same retirement income. If you are providing the same retirement income, as you vary your savings plan benefit upwards, naturally the cost will go upwards. It can go upwards by 50% to 100%.

EXHIBIT 4

BUILDUP PATTERNS

- o The higher the buildup pattern, the higher the plan cost.
- o For the same retirement income, a defined contribution plan might cost 50% more than a defined benefit plan.

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In the top graph in Exhibit 5, the straight line expressed as a percentage of salary is the increasing total value of accrued benefits under a traditional defined contribution plan. The downward side is your typical accrual pattern under a defined benefit plan. This shows very clearly why the defined contribution plan is more popular. It is always higher except at the last point in time, where it's the same, if you're aiming for the same retirement income. The bottom graph in Exhibit 5 shows the year-by-year accruals. The defined benefit accruals start at approximately 2% and don't catch up to the defined contribution yearly accrual until about age 55, at which point they climb to, at 65, maybe 25% of salary. The defined contribution stays at a level 5% or so each year.

In the early years with this typical early buildup pattern of defined contribution, you can end up with an account balance that would be worth 4 or 5 times as much as the defined benefit present value of accrued benefits. This is shown in Exhibit 6. The top graph shows 85% less accrual value for defined benefit vs. defined contribution, at age 45. If you have \$100 on the defined contribution, you've got \$15 on the defined benefit. Naturally the traditional defined contribution is more popular. Exhibit 7 shows how the defined benefit pattern actually works in a lot of plans which have early retirement subsidies. The defined benefit plan has the lower accruals, just as we have been showing, until you get to the age where there is an early retirement subsidy. Then the value of the defined benefit shoots upwards in a straight line.

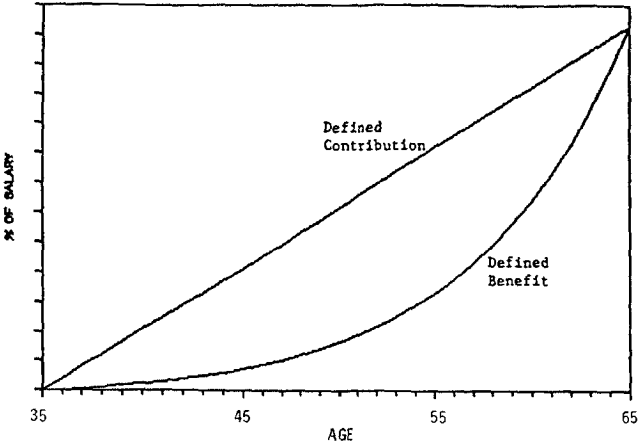
Exhibit 8 shows that the defined contribution performance is going to be tied to how your salary does relative to what interest yields are. If you are very fast track, you can outpace yourself and not get the value.

Exhibit 9, Equal Cost, illustrates what happens if you wanted the early buildup pattern, but you wanted it for the same cost. The traditional defined benefit pattern delivers $\frac{4}{3}$ the retirement income of the early buildup pattern. Even though it has $\frac{4}{3}$ the retirement income, it's not until about age 61 that the value of the account, the accrued benefit, is worth more. Only in the last 4 years do you get that extra $\frac{1}{3}$. Looking at the bottom graph in Exhibit 9, the yearly accruals up until age 51 or 52 are higher on the early buildup pattern, the straight line.

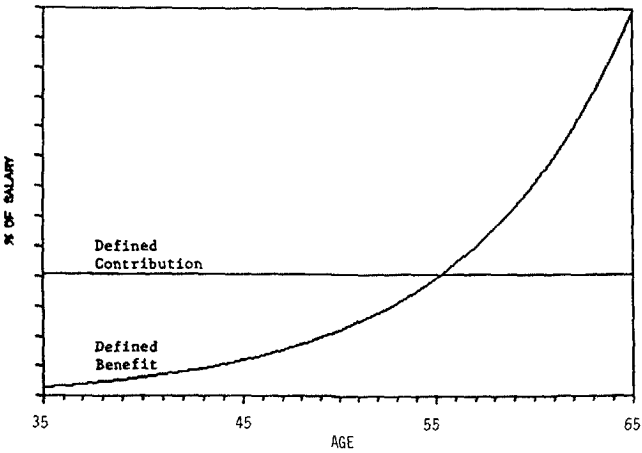
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EXHIBIT 5

VALUE OF ACCRUED BENEFITS



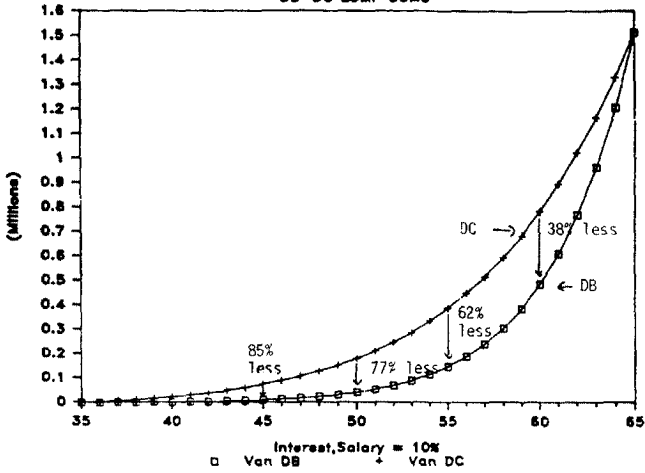
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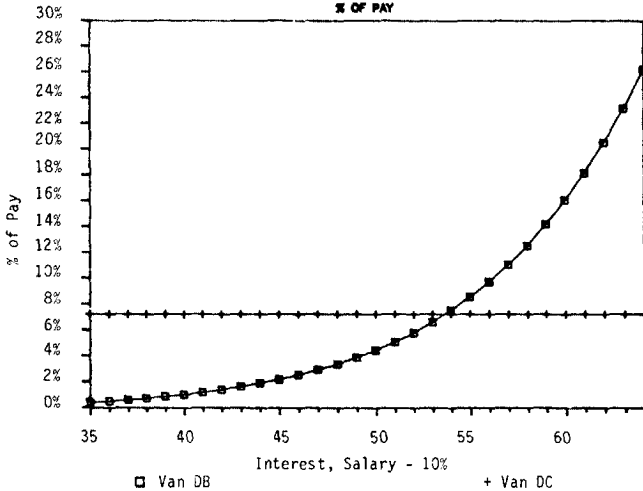
PANEL DISCUSSION

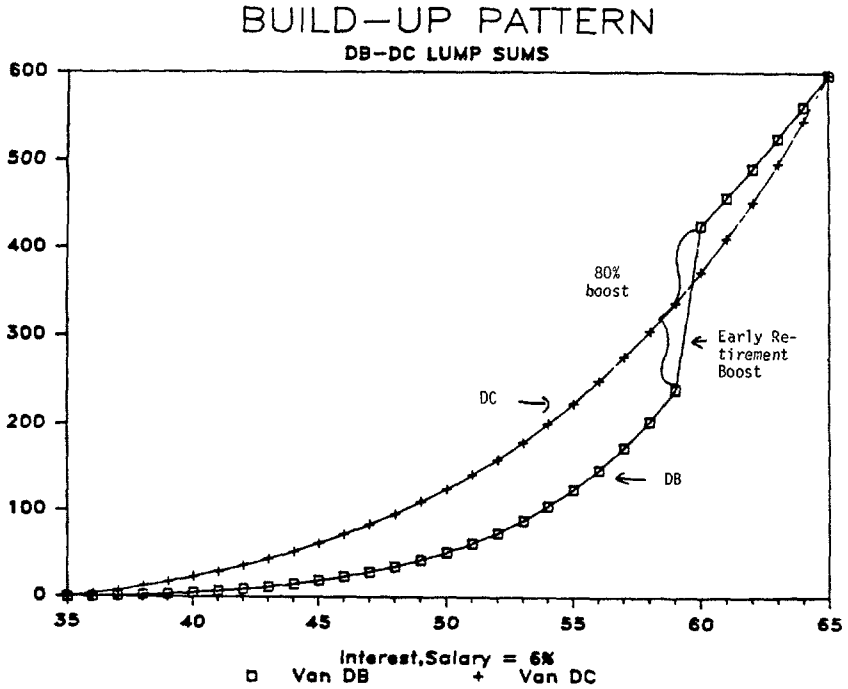
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BUILD-UP PATTERN
DB-DC LUMP SUMS



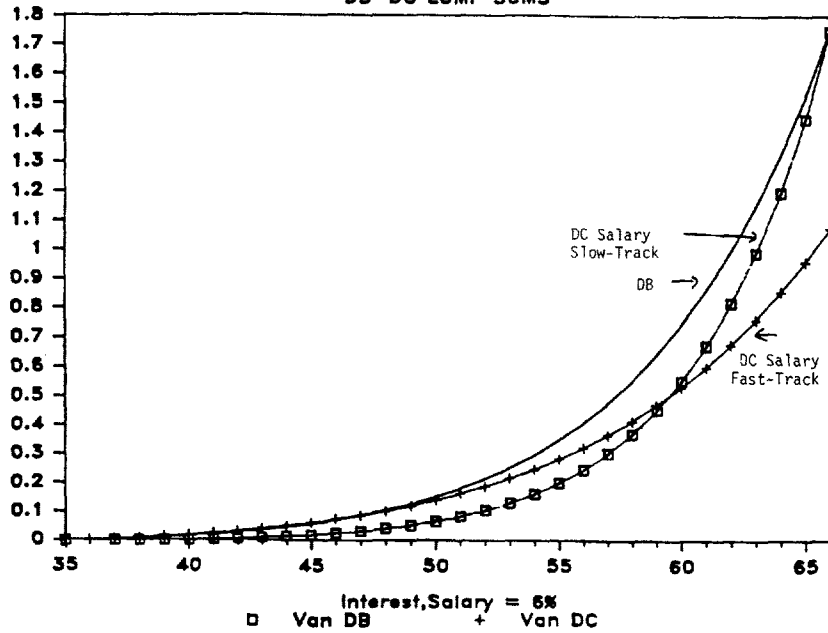
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BUILD-UP PATTERN

DB-DC LUMP SUMS



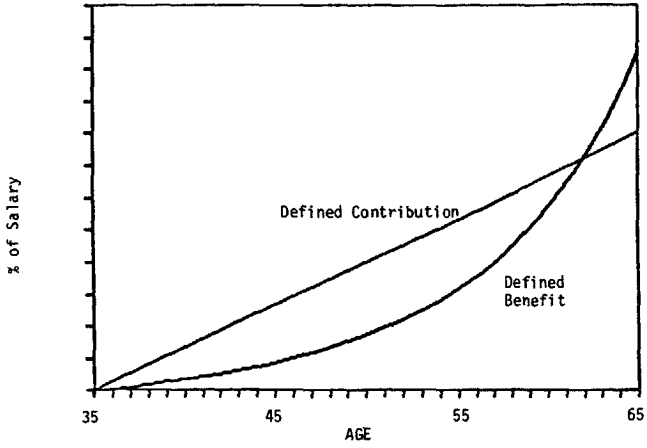
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EXHIBIT 8

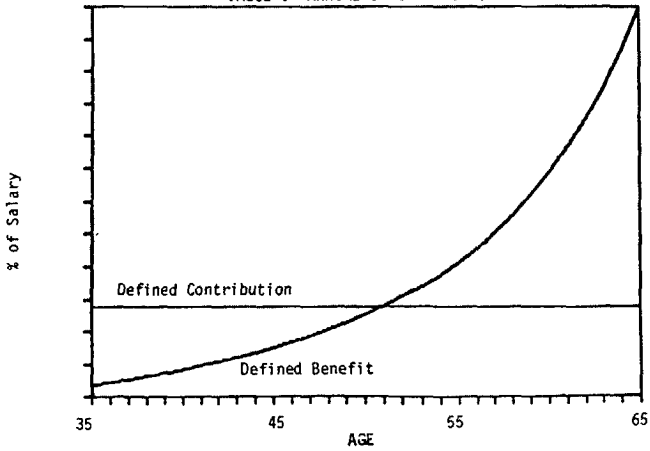
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EXHIBIT 9

EQUAL COST VALUE OF ACCRUED BENEFITS



VALUE OF ANNUAL BENEFIT ACCRUAL



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Thinking in terms of the buildup pattern to meet a set retirement income goal helps us analyze the hybrids (Exhibit 10). A target benefit plan is a defined contribution plan which essentially is developed to simulate a traditional defined benefit plan's accrual pattern. It is nothing more than a plan that is technically defined contribution with a late buildup pattern. A cash balance plan is also known as The Pension Equivalent Reserve Credit Plan or the Account Balance Plan. The whole point of this plan is to say, "Employee, you've got cash." The cash balance plan is the exact opposite of the target benefit plan. It is a defined benefit plan with the early buildup pattern of the traditional money purchase defined contribution. The standard approach, which is defined benefit and 401(k), ends up in between. Thus, if we go Exhibit 11, we know what the target benefit plan buildup pattern is. It's just the late buildup pattern I've been showing. We know what the cash balance buildup pattern is; it's simply the early buildup pattern I've been showing. These in between are what you really have in a typical plan. You have a pattern in between simply because you decided to have a defined benefit and a 401(k), not because you decided this was the level of benefits that you wanted. This situation offers a lot of consulting potential, because these plans are not coordinated.

EXHIBIT 10

HYBRIDS

<i>Target Benefit Plan:</i>	Defined contribution plan with a defined benefit buildup pattern
<i>Cash Balance Plan:</i>	Defined benefit plan with a defined contribution buildup pattern
<i>Defined Benefit + 401(k):</i>	In between buildup pattern
<i>Floor/Offset Plans:</i>	Start at defined contribution buildup pattern, switch to defined benefit buildup pattern, unless defined contribution pattern always higher (e.g. slow track with young entry age and solid DC investment performance).

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The bottom half of Exhibit 11 shows the floor plan. The floor plan is a combination of plans starting off with the early buildup pattern and then switching to the late buildup pattern. It's the best of both worlds. It's protecting the retirement income for when you hit 65 while providing the attractive savings plan income buildup earlier on. Actually, the cash balance plans that I've seen implemented also have this pattern, because I've not seen a real cash balance plan. I've not seen one yet where they didn't feel obliged to grandfather it or to put in the current formula as the minimum formula. If you do either of those things, you don't have the money purchase early buildup pattern. What you really have is the floor buildup pattern. The grandfathering or the alternative formula means when you're young, when we need to focus on savings, we'll do that. When you're older and we need to focus on retirement income, we'll do that. I find this a very attractive combination.

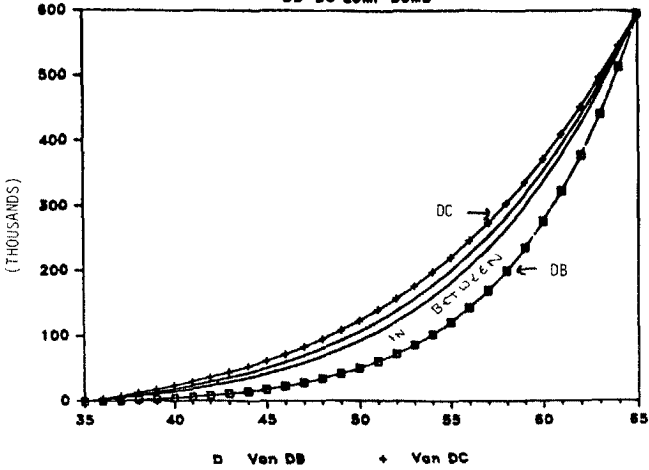
The cash balance plan is a very worthy concept. It is a defined benefit plan masquerading as a defined contribution to counterbalance the 401(k) plus defined benefit, or the floor plans which were in the middle (Exhibit 12). There's been a lot put into writing on this type of plan. I am emphasizing it only because it's been such a hot topic, and many people might be interested.

I've put together, for your amusement, two definitions of a cash balance plan. Both definitions are true, but they slant in different directions. The first definition is the upbeat definition: "Dear Employee: A cash balance plan is an exciting, modern, flexible new plan design with the advantages of both defined benefit and defined contribution. Easy to understand, each employee quickly vests in a portable lump sum account which is guaranteed to increase at the CPI for inflation protection. There are many benefit options at retirement. From the employer's side, administration is simplified, and there will be funding flexibility which will probably allow near term savings." The second definition goes like this: "Dear Employee: We've got for you a cash balance pension plan. It's our way to disguise the cutbacks in your benefits. First we're going to change it to career average. We'll express the benefits as a lump sum so we can highlight the use of the CPI, a sub-market interest rate. What money is left in the plan will be directed towards employees who leave after just a few years. Just to make sure, we'll reduce early retirement subsidies."

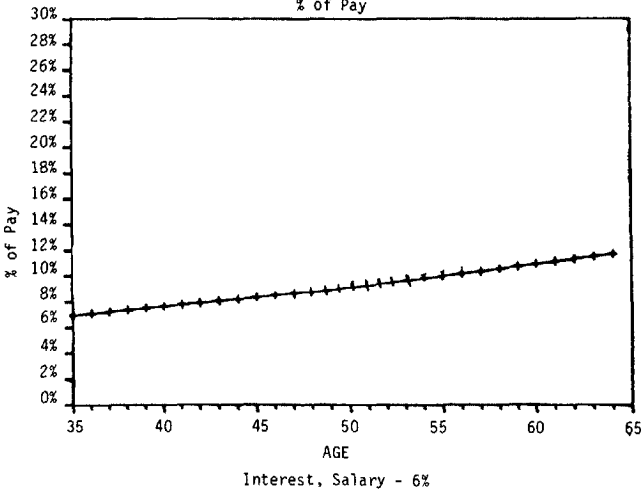
PANEL DISCUSSION

EXHIBIT 11

BUILD-UP PATTERN
DB-DC LUMP SUMS



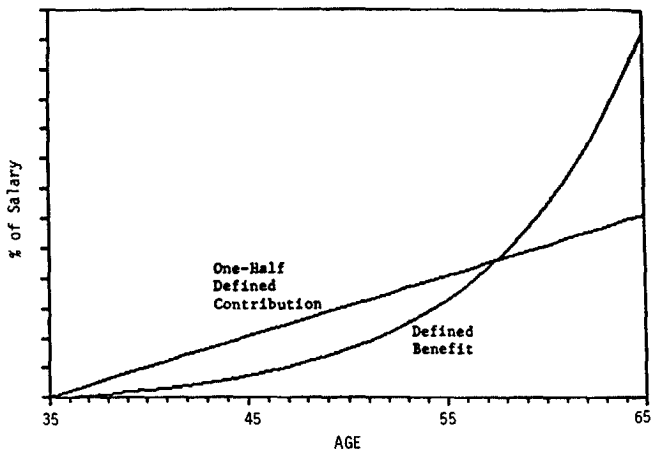
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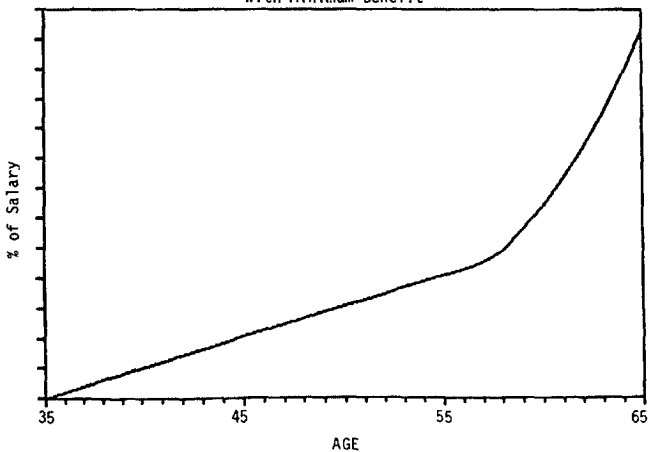
THE BETTER ALTERNATIVE?

EXHIBIT 12

VALUE OF ACCRUED BENEFITS



ACCOUNT BASED PENSION PLAN
With Minimum Benefit



PANEL DISCUSSION

EXHIBIT 13

TARGET PLAN

Objective:

- o Reach goals for selected employees (not merely new entrants), and reflect actual salary performance in meeting goals.
 - Contains all formula features of DB plan with no unfunded liabilities.
 - But Target Plans can be difficult to explain to employees.

Operation:

- o DC plan -- individual accounts. Is actually a type of money purchase plan.
- o Contribution methodology and actuarial factors (interest and post-retirement mortality) are stated in plan.
- o Calculate a projected (i.e., target) defined benefit pension and then solve for contribution necessary to fund on attained age level method. The target benefit can reflect all the formula variations of a DB formula.
- o Self-corrects for past salary progression. Accomplishes via attained age funding of each year's benefit shortfall.
- o No mid-course corrections for investment performance. (That is, actual DC account is never considered in setting year's cost.)
- o Benefit subsidies difficult.

Uses:

- o DC plan with late buildup.
- o Gives higher contributions to older employees within DC approach. The highest age-related leverage, if in conjunction with traditional DB
- o Exact opposite of cash balance plan.

Special Constraints and Legal Requirements:

- o May be used with frozen or terminated former DB plan.
- o IRS has waived discrimination tests so long as interest rate in actuarial basis = 5% to 6% and no salary projection. This causes snowball funding which often hits 415 limits.
- o Qualifies for FASB status as DC plan.
- o Integration is 7/9 times DB limits.

THE BETTER ALTERNATIVE?

EXHIBIT 14

CASH BALANCE PLAN

Objective:

- o DB funding flexibility combined with higher employee appreciation of its early buildup pattern. Often used to camouflage a benefit cutback, or remove early retirement subsidies.

Operation:

- o DB plan -- no individual accounts. Plan assets need not match employee pseudo accounts.
- o Plan funding is actuarial based on projected benefits. If plan has past service, it can be over or under-funded.
- o Benefit formula is usually either of two approaches:
 - To make it look like a lump sum plan: express cash balance directly as in the contribution schedule for a money purchase pension plan. Specify basis in plan for granting investment credits on account (CPI, T-bill, fixed %, wage index)
 - To make it look more like an annuity promise: express cash balance as the actuarial present value of an accrued DB benefit. Generally, this would not be a very appealing lump sum amount due to late benefit buildup. So, the following steps are used to create an early benefit buildup pattern.
 1. Determine each year's accrual by the career average formula.
For example:
 - o Pension accrual = pension benefit of 1% of year's earnings
 2. Index benefits each year via stated index factor

PANEL DISCUSSION

EXHIBIT 14 (cont.)

CASH BALANCE PLAN

3. Convert to lump sum amount at factors stated in plan.
The effect of the indexing in (2) is comparable to using minimal or no pre-retirement interest discount to determine lump sums.
- o Index chosen can simulate career average, final average, or money purchase.
 - o Variations:
 1. Can use as alternate minimum formula in a DB plan.
 2. Can provide early retirement features and subsidies via temporary supplements.
 3. Grandfathering common at conversion.

Uses:

- o DB plan with early buildup for mobile workforce.
- o Often a disguise for a cutback on benefit subsidies (i.e., early retirement subsidies).
- o Generally, the indexation is less than anticipated fund earnings, permitting much slower funding and contribution holidays if surplus exists.
- o Continues DB funding latitude for a DC presentation.
- o Employer still gets excess investment returns.

Special Constraints and Legal Requirements:

- o Recent hype (1985), although ancient versions do exist.
- o Full range of IRS Issues not fully explored, but careful design needed to comply with 415 limits and integration.
- o Can't be 401(k).

THE BETTER ALTERNATIVE?

EXHIBIT 15

FLOOR PLAN

Objective:

- o Provide DB goal as minimum, while giving employees the upside performance on amounts being accumulated in DC plan.

Operation:

- o Two plans (two funds, two documents, two everything)
 - Offset = self standing DC plan (any type)
 - Floor = DB plan acting as a 2nd plan, providing an umbrella benefit.
- o Floor plan calculates a DB, then compares and offsets for "pension equivalent" of DC account.
- o Floor plan pays a benefit only if there is a shortfall. Can correct for conditions causing inadequate DC accounts:
 1. Low profits
 2. Poor investment returns
 3. Early retirement shortage
- o Pension equivalent of DC account can be via annuity rates, actuarial equivalent basis, actual insurance costs. Method must be stated in plan.

PANEL DISCUSSION

EXHIBIT 15 (cont.)

FLOOR PLAN

- o Amount of DC account considered must reflect investment choices, withdrawals, employee voluntary contributions. Employer may limit investment choices. Almost always necessary to create an imputed account for DB actuarial valuation purposes.
- o Benefit subsidies easy and automatic.
- o Employee gets windfalls.
- o Difficult to communicate properly.

Uses:

- o To provide minimum benefits in spite of poor DC experience.
- o To permit benefit subsidies at early retirement.
- o As wraparound plan with DC plan after termination.
- o Add floor later, if needed.
- o Combine with 401(k).

Special Constraints and Legal Requirements:

- o Floor plan funding is ERISA, as with any DB plan. Anticipated benefit is funded under any of five methods and regular actuarial assumptions. Special assumptions needed to project future contributions and growth in DC (offset) plan.

THE BETTER ALTERNATIVE?

EXHIBIT 16

DEFINED BENEFIT PLUS 401(k)

Objective:

- o Frequently there is none. The two plans are regarded separately as pension plus savings.

Operation:

- o Two plans (two funds, two documents, two everything):
 - Self standing DC plan
 - Self standing DB plan
- o Typically DC plan enthusiastically received, and DB plan not well regarded.
- o Design often not done with retirement benefit adequacy in mind. Combined benefits often generous.
- o Has all the characteristics of DB and DC
- o Probably the most common approach.

Uses:

- o Competitive.
- o DB addresses income needs. DC addresses buildup needs.

PANEL DISCUSSION

Some of the plans described in the press, with the language of the first paragraph, actually had the characteristics described in the second paragraph. That doesn't mean this is bad plan design. I happen to think, especially with the minimums, that it's a good one. It's got its place, as do all the hybrids -- even the target plan. I actually know of three target plans, which probably puts me two or three above most people in this room. The clients had particular reasons why target plans were appropriate and were used. I'll give you a good example of a situation where a target plan might be appropriate: the Hotel del Coronado. In a hotel, your upper management tends to leave and turn over just as quickly as your lower level employees. You want something that gives them a benefit quickly. You want a traditional defined contribution approach. However, you've got all kinds of young employees who are in and out. You don't necessarily want high benefits for the younger level. A target benefit plan might be a good idea for a hotel.

Exhibits 13 through 16 are descriptions of all the different plans, their usage, their objectives, and special constraints.

I'd like to add two cautions (Exhibit 17). When looking at plans, don't simply consider what is good today. Consider how the plan you are designing will fit in with the future. The law may well be changed to restrict pre-retirement withdrawals. If that happens, defined contribution plans might be regarded as super IRAs or retirement income plans instead of savings plans. It could happen. The second caution is that demographics are going to change. For a while the population was under zero population growth.

EXHIBIT 17

FUTURE CONSIDERATIONS

- o Law may well be changed to restrict pre-retirement withdrawals. Defined contribution plans would be regarded as super-IRAs.
- o Demographics are about to change significantly. Higher average age workforce. Lower worker to retiree ratio.

THE BETTER ALTERNATIVE?

When people my age are ready to retire, there are not going to be people to replace them (Exhibit 18). Possibly there will be no money for Social Security. There will be pressure for people to continue working. You may not want to encourage mobility. Young workers may be hard to find. Older workers may be precious to keep. It may be a whole new ballgame. So when addressing today's needs, I would caution you to not lock yourself into where you can't address tomorrow's needs.

EXHIBIT 18

