## RECORD, Volume 23, No. 2\*

Montreal Spring Meeting June 19–20, 1997

## **Session 26OF Selecting and Managing External Investment Advisors**

Track: Investment Key words: Investment

Moderator: KLAUS O. SHIGLEY
Panelists: WALTER J. BLASBERG†

R. JEROME HOLMAN RONALD J. MCHUGH

**Recorder:** KLAUS O. SHIGLEY

Summary: When using external investment advisors, there is need for:

- identification criteria for selecting external investment advisors,
- validating investment performance claims,
- corporate governance and due diligence issues, and
- asset/liability management (ALM) and accounting information.

Mr. Klaus O. Shigley: We have three well-qualified panelists who will each tackle a slightly different theme. Walt Blasberg is a managing director at TCW Insurance Advisors. Walt has a chartered financial analyst (CFA) designation, and he has 21 years of experience in the investment management field. His affiliation with TCW began in 1995. At that time, Walt was CEO of Continental Asset Management when that firm was acquired by TCW. Walt is very familiar with using outside investment managers. He has spoken on the issue a number of times, and he works for an external investment manager. Walt will provide the perspective of the external investment manager. He will list the forces driving the supply and demand for outside managers. He also has some industry data he'll be sharing with us on assets under management, on fees, and on trends.

Ron McHugh is a senior associate group actuary at John Hancock. He has more than 12 years experience in the guaranteed and stable value product area. Ron has a Master's degree in statistics. He's both an FSA and a CFA, and he combines that

†Mr. Blasberg, not a member of the sponsoring organizations, is Managing Director of TCW Insurance Advisors in New York, NY.

<sup>\*</sup>Copyright ©1998, Society of Actuaries

into a powerful, explosive cocktail that allows him to apply some creative solutions to complicated business problems, as well as come up with some creative product development ideas. Ron's presentation will focus more specifically on why a large company with a very large staff of investment professionals would consider the use of outside managers. He'll speak from the perspective of a practitioner in the sense that one of Ron's current assignments is project manager for a multimanager project. It is a very high-profile, high-visibility project at John Hancock designed to identify outside managers for use inside the complex to manage guaranteed liabilities.

Jerry Holman is senior vice president and senior financial officer for institutional markets at CNA. Jerry's responsible for pricing, underwriting, and ALM for more than \$7 billion worth of assets at CNA. CNA is currently using outside managers and is a very effective competitor. Jerry will bring the perspective of a company with several years of successful experience in the use of outside managers, and he'll describe the strategy and structure at CNA. He will specifically address some of the regulatory and legal ALM and due diligence issues that arise in practice.

Mr. Walter J. Blasberg: I will talk about external asset management or the use thereof by insurance companies. When giving presentations I was taught to start with the subject, the importance of the subject, and then give a preview of the presentation. I must admit, I am curious as to why actuaries find the subject of outside asset management important, so I thought I might ask just one brave person to tell me why you're interested in attending this session on external asset management.

**From the Floor:** I came to find out what the external markets do to better serve our internal markets.

**Mr. Blasberg:** Let me ask one other question. Would any of you be users of external asset management services in your positions, or would you be vendors of internal asset management services within your own shops? How many would be users of them? How many would be vendors? We've got one or two. That gives me a good idea.

Obviously, TCW is an external asset manager for insurance companies and, as Klaus said, I was once part of the Continental Insurance Companies. I started working there in 1974, and in 1986 I decided that it might be a good idea to try to market outside services to other insurance companies. We built up quite a big business doing that, and I was actually part of the inside operation that we changed over to an external vendor, primarily because we found that many companies at that point in time got badly hurt with the rise in interest rates that we saw in the late

1970s and early 1980s, and they had no idea of ALM. We thought we had something to offer there, and we got going very strongly in that area.

I's not unusual to find an external asset manager that offers that service. However, what people are really looking for right now is performance, so it doesn't matter that you are an insurance company. You must have insurance expertise to get into the race, but what people really care about is performance. Insurance companies are looking for performance, and asset management for insurance companies is getting to be a difficult business. What I find that happens in insurance companies is individuals or insurance company people want to take their traditional asset classes and get more return out of them. But when they really are restricted in many ways, whether it be for tax purposes, or regulatory purposes, you can't really race a lot of these traditional asset classes. We do find that more and more insurance companies are moving into what we consider to be nontraditional investment classes, which are true thoroughbred horses in terms of providing return, but there's a considerable risk in them as well.

I'm going to go through the topic as Klaus outlined it, and I want to start out with who is using it. Dave Eager is a gentleman who runs a consulting firm down in Louisville, Kentucky. He's done a tremendous amount of research of all the reasons why insurance companies use external asset managers, what products they use, what their fees are, and things such as those. We've subscribed to that service for the last couple of years, and these data are from that. I would categorize users of external asset managers into two categories: those who use them completely, and those who use them partially. You can further classify that by size of the insurance company as to where they're likely to fall in that overall structure.

I'd like to focus on where you mostly find companies that want to outsource the whole thing and use external managers. As you move up the spectrum you find less usage; i.e., as a percentage of assets under management. The small guys use them because they don't have the expertise or the money to afford expert investment, so they'll contract it out. There's an economy of scale. It's less expensive for them to contract it out than to do it themselves, and there also is a perceived benefit. They believe that they will get better return by doing it externally.

As you move into the medium category some still continue to use outside asset managers, but it's really some of the \$1–5 billion companies that do it. There they also believe that outside managers are better than the internal that they can produce, but they have enough assets and there's enough competition in the business that they can drive the fee way down and get it at least equal to what it would have cost them internally, so you'll see them doing that.

Then the last class really is the megamanager or the megainsurance company, such as CNA, that finds that it can use external asset management for specialty products that it doesn't have the expertise in, whether it's because it wants to invest in junk bonds but doesn't want to spend \$1 million a year in fixed costs to have nine analysts (that's a conservative estimate) when it might want to be in there for only a year or two and then get out or if it wants to asset allocate. Also, when going into foreign markets or venture capital, these companies oftentimes think that they don't want to have that expertise because it's a little far afield and they're better off hiring external asset managers.

That gives you some idea of the use. Here are the four top reasons for hiring external managers: higher return, higher return, higher return, and higher return. That's really what people say. The other top reasons cited were to enhance return or yield, manage diversification, achieve style diversification, and achieve portfolio diversification. Then it dropped off from there for ALM, accounting and things such as those. Basically, top responses are related to getting higher return, so that's why I say there's one reason. It's mostly higher return.

Why do they want the higher return? Well, the insurance industry returns in terms of ROE (and these numbers are from Best's) are terrible. Utilities do better than property and casualty (P&C) companies. P&C companies have the worst return, and life companies aren't far ahead. There's a little of a bifurcation there because we think that the stock companies have higher rates of return and the mutual companies have lower rates of return, but that's the average. It's certainly far away from the 13–14% that is the industry average in Fortune 500 companies.

What's wrong? Well, we think that interest rates have come down a lot, and that's put pressure on many companies. If fixed income is 90% of your asset base and interest rates are lower, if you don't change your pricing you could be squeezed badly. Oftentimes, I guess there's resistance to price change. It's just like a Japanese car company when the yen is strong. If they don't change their pricing, their margins are going to be squeezed, and I think that's kind of what happens here. Another is competition. It's not only competition amongst insurance companies, but it's with banks, mutual funds, and other purveyors of retirement and insurance services.

Look at some of the competitive forces here. I think you're probably all familiar, much more so perhaps than I am, with what's going on. The banking industry is joining the competition. A magazine cover on the front of *Best's Review* had a picture of an automated teller machine (ATM) showing that you can get can money from checking and savings, or you can push a button and get insurance, and I guess that's a lot of what's happening. Insurance companies are getting into this business.

The Barnett decision allowed them to sell insurance products to towns of 5,000 or less. Also, some of the Treasury rulings said that it doesn't matter and this is creating some problems. Also, within the retirement business, which is a big part of the life insurance business, there's a tremendous amount of competition from mutual funds just like in the investment business. They're gathering tons and tons of assets, and unlike the insurance company, they're perceived as the way to go so oftentimes you'll find the company that wants to get this kind of performance so they'll move to an outside manager. The insurance company hopes a brand-name investment manager will keep the client in-house. That's a little hurtful to the outside asset management business as well because there's been a tremendous consolidation in the business. There are ways that you can go after improving your return. You can do what Conseco does, which is buy companies, consolidate them, and increase your returns, or you can try to do something in a niche business or on your investment side. But what happens when these consolidate? We used to manage money for Cologne Life. It was bought by General Reinsurance. It brought the money in-house immediately, and our company lost a \$300 million client. That's hurtful to our business, but we see that a lot now.

What's more important here is that we're talking about investments, and investments can be a big driver of return for the insurance companies; hence, the interest in getting that return up. Look at the life industry (Table 1), which is quite highly leveraged, about 13 to 1. Each 25-basis-point increment that you get on your portfolio translates into about 3.25% of increased ROE. Once you go up there, that's a two-edged sword and you have to be careful about what you're doing.

TABLE 1 ADDED ROE FOR ADDED RISK

	December 31, 1995 Invested Assets/Surplus	Increase in Pre-Tax ROE from 25 Premium Basis Points
P&C Industry	2.7/1	0.68%
Life Industry	12.9/1	3.23%

Let's discuss where assets are being most used or how external managers are being most used by the insurance industry. I would say that it's still in the most traditional asset classes. This is from the Eager Survey as well. Twenty-seven percent is for active fixed income, 20% is for active equity and so on down to convertible bonds at 3% and international and emerging markets at 1%. We're seeing much more interest, however, at the lower end, so we think that insurers are following the trend of sophisticated plan sponsors. On on side is traditional asset classes, which are mostly fixed income, investment-grade fixed income, private placements,

commercial mortgage backs, or commercial mortgages in the life companies, and these are relatively low net-of-fee kinds of performance areas. Two things happened. We think that insurance companies will want to go over to the high value-added products, but sometimes before they do, they start going up this spectrum. They'll try to go out and get an active fixed-income manager such as TCW or Pimco that has a great track record, and turn and churn to get some more speed. But oftentimes we find that's really a bait-and-switch kind of a technique that managers use. We'll go out there and show them our track records, and they will say yes, but we can't invest in derivatives, or we can't invest in collateralized mortgage obligations (CMOs), or we can't invest in floaters, or we can't have turnover greater than one; otherwise, it won't be held to maturity, and we can't sell this because it's a tax law problem, and it will hurt our investment income. Instead we manage a more enhanced index portfolio for them, and that's what we see going on most of the time in the industry. They can either try to race or they can get some of the higher value-added products, which I consider to be junk bonds, international fixed income, inequity, emerging markets, mezzanine, private equity, and so forth.

You might be interested in what A.M. Best has to say about all that because the more you go into that area, the less it will like it. We've become reasonably close with Best and, basically, we think that Best wants to see insurance companies as going concerns. It doesn't want to see portfolios that are designed for run-off, and it doesn't want to see pristine portfolios. What it does want to see is that if you're in those asset classes, management or the insurance company should know exactly why it owns the asset class—and the company hasn't just said, "Here take this to this manager and run off with it." In a meeting, if Best thinks management can't answer a question about why it has emerging markets fixed income, why it hasn't gone into junk bonds, or why it is into high-yielding mortgage strategy, it is likely to mark the company off for it, but if it can articulate from its investment committee on down why it is there, A.M. Best likes that because it believes that the best way to service the policyholder is to make sure that the company is solvent, is earning money, and is a good going concern.

This is a quote from Best: "The insurance industry is now more dependent than ever on external asset managers to make more money." My quote is, too, that "the investment management industry is a lot more dependent on insurance companies to make money." You might wonder how that is. Well, if you look at its traditional lines of business, you'll see similar things going on there that are going on in the life insurance business.

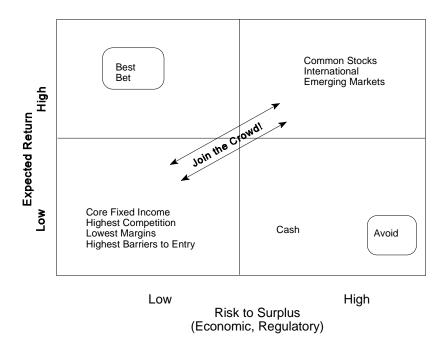
That's its reason for being. It came into being to handle a lot of the ERISA business, and that's what funded its growth.

As that retirement market has changed and it's no longer defined benefit and defined contribution and it's moved to mutual funds and 401(k)s, if the company is not there, it is losing market share. And even if it is there and it is riding the mutual fund horse, it still wants to improve its institutional business because it's often a different department. The area that's growing is the insurance area, so that's why investment managers are more dependent on the insurance business. We think of it now as a growth market for the investment management industry, because here there's been about 17% growth in the use of external asset managers or in assets under management since 1994, which was the last time Eager did the survey. This was done in 1996. About \$400 billion of assets are externally managed, which is about 15% of the overall asset base. Not only investment managers but everyone's trying to cash in on this bonanza as well. When we started in this business you could hardly find an investment consultant. SEI and Frank Russell were the only two, and they were very much involved with Bermuda companies that were run by Treasury officials from Fortune 500 companies who were used to dealing in the pension business, and that's why they were in it. Now a whole host of consultants has developed insurance practices to help insurance companies design investment programs and select and monitor asset managers. So it's getting much more like the traditional pension fund management business, but the wrinkle is that you have to have the expertise.

What we see here are a couple of implications. We believe that the life insurance industry is really more in the financial services industry and is more than ever dependent on its investment return than making underwriting profit. We think that it will increasingly contract out to outside managers. Last, we think that both insurance companies and investment giants will fight hard to actually do some things that can make them money. In order for investment managers to make money we think the insurance companies may be a little ahead of them in some regard.

Chart 1 is a little bit complex, but on the left-hand side is the expected return and on the horizontal axis is the risk level. As you go up and to the right you get higher return and higher risk. The traditional, conservative asset management is in the lower left-hand quadrant there with core fixed income, which is the highest competition, the hardest to get into, and the hardest to make money with. Then people go up that spectrum to common stocks and emerging markets to get more return. That's one way the insurance companies go.

## CHART 1 LIKE INSURERS



Everybody wants to be out of cash. But we see more and more asset classes where you actually get some. I would consider regulatory arbitrage, such as a collateralized bond obligation (CBO). If you have 100% of a junk portfolio and your risk-based capital (RBC) charge on the overall position is 9% and you put it into a CBO structure where you pay a 30% RBC charge or get assessed at a 30% RBC charge on 15% of the assets, that's only 4.5%. You have a lower RBC charge, but you have the exact same portfolio in place. Oftentimes that's where the insurer is ahead of the game, and the investment manager is now just catching up because he needs them to be able to do that. They just want to jam product down your throat, not necessarily do it the way you want. This is where the fees are.

Additionally, one of the things that we're looking at right now are catastrophe bonds and securitization of insurance, and that's a wonderful asset class. You can get 9–10% if there's no storm. They're AA-rated. You really have very little RBC charge. They're uncorrelated to the rest of your asset base, but those are the kinds of things and they're high fee. The investment managers make 100 basis points on them versus only 5 basis points for traditional asset classes. There is a share in it, so you get a percentage of the profits if you do well with it.

The last thing is fees. This is for active fixed-income accounts. Account size is from \$100 million up to \$1 billion. Fees range from 20–25 basis points, down to about

5–10 basis points for a billion. We're seeing a lot more single-digit fees now in the \$200–\$400 million range that we never saw before. Some accounts are going for five basis points in that area. So I think insurance companies are getting their money's worth out of external managers if they can get the performance. Then on the equity side that's all over the lot but, again, it's a similar kind of a structure. The more assets you have under management, the less the fee is. Even here there's a lot of pressure, but, in general, it starts out at about 75 basis points for, say, \$10 million. It goes down to around 40 from maybe \$50 million, and then it goes maybe to 50 and then 40 for \$100 million.

From the Floor: What do those fees cover?

**Mr. Blasberg:** They cover just investment management. There's no custodian in there. There's usually no ALM. There's no insurance accounting or anything like that.

**Mr. Ronald J. McHugh:** I will try to provide you with the perspective of a company that is currently going through the process of evaluating outside investment advisors to manage money, and the company is in a first-dollar-loss position.

To give you a quick lay of the land, John Hancock has a number of internal investment advisors who are world class. Our bond and corporate finance group is world-renowned for its expertise in private placements. Our commercial mortgage area has an excellent track record, and both groups have attracted large amounts of external funds. These two groups also have the investment mandate for the vast majority of our general account. The attractive spreads they generate from long-term investments have been the key driver in our success in such product areas as GICs, single-premium deferred annuities (SPDAs), immediate participation guarantees (IPGs), and traditional whole life. We also have investment advisors in subsidiaries such as Independence Investment Associates, John Hancock Advisors, and JHM Capital Management, just to name a few, with excellent reputations and large amounts of both internal and external funds under management.

Why then would we be looking to outside investment advisors at John Hancock? At the top of my list is growth. In both the private placement and commercial mortgage market, as the annual volume our investment managers need to invest increases, the spread received on the assets decreases as they are forced to take on marginal investments. The enterprise is then faced with either decreasing returns on the asset side or decreased sales volume. Therefore, using outside investment advisors allows you to expand your asset volume (and therefore your sales volume) without the direct loss in marginal return on the asset side. This should facilitate growth in existing product markets.

If your asset strategies precluded certain kinds of liabilities, then using external investment advisors may help facilitate your company's expansion into these markets. This is a big draw at John Hancock because we were being excluded from certain bids in the GIC market because of tight liquidity restrictions on our contracts. We were also trying to expand into new markets with greater liquidity requirements and would be severely restricted in the volume we could do with existing asset strategies.

Another goal is maximizing the risk-adjusted ROE on the block of business. Although you can get a lot of diversification in the bond market alone, and including international bonds and commercial mortgages expands on that diversification, in the last 25 years both corporate bonds and commercial mortgages have had their worst years in the earliest parts of this decade. In other words, there are still some common risk factors that these asset categories are exposed to, such as the economic cycle, that make them correlated. Thus, John Hancock is looking for outside investment advisors using asset strategies that are not highly correlated to what our inside investment advisors are using, but with the caveat that they will not significantly diminish the spread we need to issue products.

The rating agencies have a good method for score-keeping credit risk. Whatever level of credit risk your firm is taking, they can grade fairly accurately. However, for other forms of risk, such as interest-rate mismatches, they impute risk, sometimes where little exists. To not take these risks that you're being charged for is like leaving money on the table, if you can get comfortable with the risk.

Using outside investment advisors should also facilitate utilization of fresh ideas and approaches to investing. These ideas may be new to you and your firm, but old hat to an outside investment adviser. A firm that isn't open to external investment advisors will tend to either have its own internal managers dabble with new ideas instead of focusing on what they do best, or just ignore new ideas.

Another reason for considering external investment advisors is that you can get best practices within an asset class or strategy for as long as you want it. When you no longer want it, or the adviser slips from best practices, you can terminate services. In other words, external managers can be held to a much higher level of accountability for their performance and the performance of their asset classes and make redeployment a one-sided debate.

Of course, there may be a loss of control when using external investment advisors. This risk can be greatly mitigated through careful scrutiny via tight corporate governance and compliance procedures. Whatever fee income you pay to outside investment advisors has a high-profit component with no risk capital to speak of. It

hurts to have to pay it. If an internal investment adviser makes a mistake, it may be your problem, but there are people to share the misery or to point at. With an outside investment adviser, you're all alone.

According to the CFA framework, whether or not you choose to use outside managers, you should start with listing your investment objectives, constraints, and policies. Objectives are the return requirements from the portfolio and your tolerance for risk. Generally, the higher the return requirement the more risk you will need to take to achieve it.

The constraints include the needed liquidity, the time horizon, relevant regulations, tax considerations, and any unique needs or circumstances. The policies are how you plan to achieve your objectives relative to your constraints. Asset allocation is generally considered the most important decision in the investment process. The asset allocation process generally consists of specifying the asset classes to be considered for inclusion in the portfolio, developing expected returns and risk of these asset classes, and determining an optimal mix to best meet your risk and return objectives. You want diversification both within and between asset classes. Generally speaking, more is better, but at a point you'll reach diminishing returns.

Risk, tax, and income generation considerations should all be covered in the policy as well.

Let's now see how this framework may be applied to an insurance company and what changes in investment policies are necessary for some of the newer products mentioned earlier with more liquidity problems. For a traditional insurance product, such as a GIC, the return requirement is equal to the rate guaranteed on the contract (or what we refer to as the cost of funds) plus the expenses of issuing the product, including overhead expenses, and a profit charge, which is a function of the level of risk assumed. The liquidity needs are low because the contracts have a 3–5 year maturity range and restrictive early-redemption provisions. The time horizon is long, as long as you keep issuing GICs. The accounting requirements allow you to smooth out some lumps. Some of the unique constraints may come from the rating agencies, which look at ratios such as risky assets to surplus, and have a certain acceptable range you must meet to maintain your rating, or constraints may be mandated by the committee with the authority to approve investments. Asset allocation is generally among fixed-income asset classes, and any one asset is generally a very small percentage of the overall portfolio. Overall, the CFA framework seems to hold up reasonably well for the way many insurers get their spread.

For the floating rate funding agreement contract, the return requirement is the cost of funds plus expenses and profits. Although the contract may have a 3–5 year maturity similar to a GIC, it also has a 90-day put-at-book-value at the discretion of the contract holder, which means the liquidity requirement is high. The time horizon is short because of the flighty nature of the liabilities. This means our risk tolerances are low.

Let's now look at a broad set of asset classes and strategies. By including the right combination of these asset classes and strategies in our portfolio, we hope to be able to achieve our investment objectives for the funding agreement product. A large allocation to private placements and commercial mortgages should be avoided because of the illiquid nature of these asset classes, their short supply, and their limited diversification benefit, given the already existing general account exposure.

Real estate should also be avoided because of liquidity. Public bonds are fine from a liquidity perspective, but the spread requirements may cause you to drop in investment quality, bringing up some of the unique constraints I mentioned earlier.

Commercial paper, CMOs, Treasuries, and agencies are also fine from a liquidity perspective, but generally lack the spread required to achieve our return objective.

Enhanced cash management and duration management strategies use various forms of interest rate or yield-curve bets to generate greater total returns than a benchmark. Sector rotators move in and out of different sectors, such as the public bond sector, the mortgage sector, or Treasuries, to generate total returns greater than a benchmark. Virtually all investment managers use some form of rich/cheap analysis to select individual assets that they believe will outperform other assets in the same class. Active core managers use both duration management and sector rotation to beat their benchmark. A core-plus manager uses systematic exposure in sectors not in the benchmark, such as junk bonds or emerging market debt, to generate spreads over a benchmark. A market-neutral manager eliminates the effect of some markets and can work with any asset class.

By using combinations of the spread on liquid assets, yield-curve management, duration management, sector rotation, and security selection, we hope to get our required return in a low-risk manner. Moreover, there appears to be more than one way to take these bets. We now know the general criteria we are looking for in our manager search with respect to expected return requirement, asset classes, and asset strategies and are now ready to move further into the asset allocation process.

As we all know, risk can be measured in many different ways, but standard deviation of return is the most common approach. One major debate that has taken

place both inside and outside our company has been whether the standard deviation should be measured on the asset side only, which means maximizing total return relative to standard deviation, or on the net business result, which would take into consideration the liquidity side as well. In statistical terms, the total return advocates wish to focus on the correlation between different asset classes, and the business people wish to focus on the remaining correlation between different asset classes after the common correlation to the liabilities has been measured and decreased. This remaining correlation is also known as partial correlation.

What this means for our funding agreement example is that we want to focus on the returns obtained from a number of different managers relative to the liability bogey, which is the London Interbank Offered Rate (LIBOR) (Table 2). To get there, we start with the manager's total returns over some period of time, say the seven years from 1990 to 1996. From the total return we can remove the manager's benchmark return. This result is commonly known as the manager's alpha. The alpha needs to be reduced further to reflect fees payable to the manager as well as the cost of swapping the benchmark to LIBOR. Historical alpha also needs to be adjusted to reverse engineer any gains or losses in the manager's return that would not be expected to occur again in the future. The biggest adjustments I reflected were due to spread levels compressing from 1990 to 1996. The impact by manager varied dramatically. The net result is a prospective estimate of the return over LIBOR for each manager.

TABLE 2
CAPITAL MARKET EXPECTATIONS
EXPECTED RETURNS

	Historic Mean Return Over Benchmark	Adjustments	Net Projected Return Over LIBOR
Manager 1	2.03%	0.42%	1.61%
Manager 2	1.57	0.30	1.27
Manager 3	0.88	0.13	0.75
Manager 4	1.70	0.55	1.15
Manager 5	1.55	0.55	1.00
Manager 6	1.12	0.42	0.70
Manager 7	1.40	0.50	0.90
Manager 8	1.38	0.75	0.63
Manager 9	2.50	0.75	1.75

<sup>-</sup>Based on returns from 1990-1996

<sup>-</sup>Adjustments include fees, SWAP costs and return adjustments

To complete the risk part of the analysis, we need the standard deviation of the portfolio (Table 3). As can be seen in the formula, the portfolio variance is a function of the weight a manager has in the portfolio, represented by w, the standard deviation of the alpha represented by sigma, and the pairwise correlations of the alpha represented by rho.

TABLE 3
CAPITAL MARKET EXPECTATIONS
STANDARD DEVIATIONS AND CORRELATIONS BETWEEN
MANAGERS' ALPHAS

Port	tfolio Varia	ance		$\sum_{i=1}^{n}$	$\sum_{j=1}^{9}\sum_{j=1}^{9}v_{j}$	v <sub>i</sub> w <sub>j</sub> o <sub>ÿ</sub> oj	$_{i}$ O $_{j}$			
	Annuali	zed	Correlation							
	Stand. Dev.	1.00	2	3	4	5	6	7	8	9
1	0.90%	1.00	0.14	-0.20	-0.35	-0.20	0.28	-0.14	-0.25	-0.12
2	0.88		1.00	0.42	-0.05	0.09	-0.15	-0.24	0.04	0.01
3	0.87			1.00	-0.22	-0.24	-0.18	-0.12	-0.02	-0.34
4	2.19				1.00	0.72	-0.23	0.14	0.46	0.59
5	1.66					1.00	-0.43	0.26	0.28	0.52
6	0.66						1.00	-0.06	0.16	0.13
7	1.68							1.00	0.18	0.31
8	1.00								1.00	.50
9	2.21%									1.00

<sup>-</sup> Excess Returns over Benchmark

The table shows the standard deviations and correlations of these same money managers' alphas. Notice that managers' alphas have both positive and negative correlations with each other. For example, managers 4–5 have a 72% correlation. A quick analysis of their strategies indicates that both have a longer duration than their benchmark, causing their alphas to move in the same direction for large interest-rate movements. Managers 5–6 have a negative correlation of 43%. Manager 5 takes on more credit risk than the benchmark whereas manager 6 takes on less credit risk, causing the alphas to move in different directions as credit spreads change.

<sup>- 1990-1996</sup> 

From these expected returns and standard deviations and correlations, we can develop efficient frontiers. Chart 2 has as its horizontal axis the standard deviation of return and has expected returns as the vertical axis. Portfolios on the efficient frontier (the line on the chart) are those combinations of managers who have the highest expected return at each level of standard deviation, or the lowest standard deviation at each level of expected return.

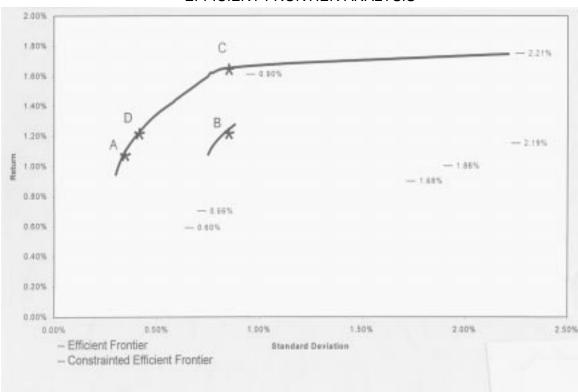


CHART 2
EFFICIENT FRONTIER ANALYSIS

Point A on the efficient frontier is the point at which the expected return per unit of standard deviation is maximized. If equity needs or target surplus is defined as a multiple of standard deviation, then the portfolio at point A will maximize the ROE. This is also the point where the Sharpes ratio, which is the ratio of the excess return per unit of risk, is maximized.

The short curve efficient frontier at point B is constrained to exclude certain asset strategies. The difference between points B and C represent the cost, in basis points of return, caused by restricting our portfolio. The difference between points B and D is the cost in terms of increase in risk. All the individual managers lie southeast of the feasible portion of the efficient frontier, meaning that an individual manager is generally not an optimal portfolio.

An approach that allows you to explicitly measure each manager's contribution to both the expected return and risk of the portfolio can be found in the multiple-factor arbitrage-pricing theory (APT).

Steven Ross developed the APT in the mid-1970s with the assumption that a securities return is equal to its expected return plus its exposure to a series of systematic risk factors plus a firm-specific risk.

The manager-specific formula states that the return for manager *I* is equal to the expected return for manager *I* plus the product of it's sensitivities to each of *j* common risk factors and the risk factors deviation from expected plus a manager-specific noise term. The betas are the sensitivities, and the *F*s are deviations in the risk factors.

Manager / Return 
$$r_i = E(r_i) + \beta_{il} F_l + ... + \beta_{iJ} F_J + e_i$$
  
where  $E(F_i) = 0; j = 1,2,... J \text{ and } E(F_i F_i) = 0; i \neq j$ 

The factors are assumed to have zero expected value and to be independent of one another. This latter property of factor independence has the appealing mathematical result that a portfolio's sensitivity to deviations in a risk factor is equal to the weighted average of the sensitivities to that risk factor of the managers comprising the portfolio.

Portfolio Return 
$$r_p = E(r_p) + \beta_{pl}F_l + \beta_{pJ}F_{J} + e_p$$
 where 
$$E(r_p) = \sum_{i=1}^{m} w_{iE}(r_i); \quad \beta_{pj} = \sum_{i=1}^{m} w_i \quad \beta_{ij}; \quad e_p = \sum_{i=1}^{m} w_i \quad e_i$$

In the portfolio variance, the first term represents the systematic risk of the portfolio, which is the sum of the factor variances and the square of their portfolio sensitivities. The second term is for manager-specific risk.

Variance
$$(r_p) = \sum_{j=1}^{J} \beta_{pj}^2 \sigma^2(F_j) + \sum_{j=1}^{m} w_i^2 \sigma^2(e_j)$$

The manager-specific noise terms are assumed to be a diversifiable risk given that they are nonsystematic in nature. These could be ignored if there were a large enough number of managers in the portfolio. If the noise terms were systematic, it means you missed a risk factor.

For our nine-investment-manager group, the first three risk factors are related to changes in the level, slope, and curvature of interest rates. These are the independent movements with the largest explanatory power of interest-rate changes. They were derived by using principal component analysis, a multivariate analysis technique that transposes a number of variables that are correlated into a number of different variables that are independent, the first few of which contain almost all of the explanatory power. For these factors, we started with 11 correlated yield curve points and reduced them down to the 3 uncorrelated risk factors. The remaining risk factors were derived by calculating the principal components on the managers' returns after removing the impact of systematic interest-rate movements. To facilitate comparisons, I also set the variance of all the factors to one.

Let's look at an example (Table 4), using our nine-manager group and portfolio A as the efficient frontier. That's the portfolio that maximized the ROE. The percentage of the portfolio allocated to each manager is shown on the left-hand column. The next column is the expected alpha of the manager; the next six columns are the sensitivities of each manager to six risk factors; and the final column is the percentage of the variability in the managers' alpha explained by the risk factors.

The bottom row shows the sensitivity of portfolio A to each of the risk factors. We can then compare the risk sensitivities of portfolio A to risks we are exposed to in other business. For example, at John Hancock, we have little exposure to interest rate risk relative to credit risk. We would then not be as concerned with large sensitivity to the first three factors, relative to factors 4–6, which represent predominately credit risk. Or we may look to offset certain exposures that already exist in the general account.

We can also use the manager sensitivities to check for consistency with their story with respect to what risks they are exposed to. The factor sensitivities can also be used to gain insights into correlation between the managers. Sensitivities of the same sign will increase correlation, and sensitivities of different signs will reduce correlation. Earlier, I said that managers 4–5 had a large positive correlation because they both are long on duration relative to their benchmark. This is illustrated here by their large betas on factors 1–2.

At the very bottom is the systematic portion of the portfolio variance. If we have successfully derived all the risk factors such that the manager-specific noise is

uncorrelated, then for a large enough number of managers we need only be concerned with the systematic portion of the portfolio variance. Theory would dictate recalculating the efficient frontier to reflect only this systematized risk.

TABLE 4 MULTIFACTOR APT

			Manager's Betas						
	E	xpected	li	Interest Rate		Other			Explained
Manager	Weights	Return	Level	Slope	Curvature	4	5	6	Variance
Mgr.1	26%	1.61%	0.0014	0.0007	0.0007	-0.0027	-0.0027	0.0005	85%
Mgr.2	9	1.27	0.0022	-0.0001	-0.0003	0.0017	0.0017	-0.0009	83
Mgr.3	22	0.75	0.0021	0.0001	-0.0005	-0.0007	0.0017	-0.0010	62
Mgr.4	7	1.15	-0.0073	-0.0057	-0.0028	0.0032	0.0026	-0.0009	94
Mgr.5	5	1	-0.0043	-0.0038	-0.0004	0.0033	0.0029	0.0001	87
Mgr.6	25	0.7	-0.0001	0.0010	-0.0008	0.0000	-0.0019	0.0012	81
Mgr.7	6	0.9	-0.0025	-0.0002	0.0014	-0.0007	0.0029	0.0058	80
Mgr.8	0	0.63	-0.0013	-0.0007	-0.0014	0.0010	0.0008	0.0019	84
Mgr.9	<u>0</u> 100	1.75	-0.0063	0.0006	-0.0032	0.0053	0.0024	0.0040	82
Portfolio A		0.0001	-0.0001	-0.0003	0.0010	-0.0001	0.0004		
Expected Return			1.06%						
Standard Deviation			0.12%						

As I stated earlier, we're in the process of evaluating outside investment advisors. After we determined our in-house strengths, we searched for external investment advisors who would complement our existing managers. We analyzed databases of manager information and sent out proposals containing lists of questions specific to the firm and specific to a specific strategy of the firm. We're currently evaluating these strategies. The key in this analysis is determining the return to expect going forward. This step is as much art as science— how to combine the external skills with our own managers in an optimal way.

Let me just restate the major reasons why we're looking at outside investment advisors for a portion of our current business and future cash flow. First is growth, but not growth at the cost of declining margins. We're going to expand into new markets at the lowest possible cost of funds. We want to prudently meet client needs such as the need for more liquidity. We also want to get our spreads from exposures to different risk factors and the risk factors we're currently taking with our internal managers. We also want all of our investment advisors to focus on what

they do well and not to dabble. Success on these points will help us maximize our risk-adjusted ROE and keep us ahead of our competition.

Mr. R. Jerome Holman: I'm going to move ahead and briefly give the investment strategy of the product that is using the outside investment managers: Enhanced LIBOR + Future Overlay = Enhanced Indexed Equity. The important thing to take away from this is that our product has a cost of funds that exceeds LIBOR. Our objective is to have a group of strategies to support that product. They need to exceed LIBOR on a reliable basis without too much variability (or sometimes we use the term volatility). We look for that characteristic individually with the managers. We particularly emphasized that as we were building the portfolio, starting from our first manager. But as we've gotten a group of managers in the portfolio now, our greater interest is to have a low volatility of returns in aggregate of those managers, so we're looking for managers to produce returns that aren't correlated to each other.

This is the kind of thing, moving into the due diligence aspect of our practical experience in seeking external investment advisors, that is traditionally associated with due diligence. When doing this you must ask yourself fundamentally, what is it we're trying to produce here? You're looking for the ability to produce results in the future, so you want to look at things such as what's the firm size of this advisor? Is it a small, one- or two-person shop, or is it a larger operation similar to, say, Walt's TCW, where there's a greater depth of experience and personnel there?

You should assess the longevity of the strategy and the firm. That should give you some sense of the continued viability of the strategy and the ability of the firm's personnel to produce results for you in the future. You also want to take a look at the unique skills of the principals of the firm. This is going to give you a clue as to their expertise and ability to produce the kinds of results that you want. Typically, we're seeing a number of people spin out of larger institutions because they developed an experience in an evolving niche market and they look to make an entrepreneurial operation of that on their own. You want to ask these people what their business strategy is because the markets are constantly changing.

As the markets change, advisors can't continue necessarily to do the same things that they've done in the past. That will give you an indication of their ability to continue to have successful investment results. Finally, one thing that's important is the on-site visit. It's particularly important when a strategy relies on a particular type of technical infrastructure to produce results. Some managers out there simply produce superior returns by their ability to outexecute everyone else. If that's the case, then you want to make sure you go see that operation.

When looking at strategies, the main thing that I do at is to try to determine the essence of the deal; that is, what is it that you're buying? It can be different things. It can be the result of a model, which is to say that someone's taking investment actions based on what the model is telling them to do. It could also be a unique market knowledge. That is an intellectual asset. There is something that someone knows about that part of the market, and he or she seems to know it better than anyone else. As a result, he or she is able to get superior returns from accessing that market. Or, just an unmatched execution ability, such as a technical trading strategy, which might yield excellent returns.

In one shape, form, or another you're buying something. It's the essence of the deal. You really need to understand that before you sign on the dotted line. You also need to understand the market limits of that strategy. What is the amount that's feasible? There may be a strategy that a manager is able to use, but it can only be done in a limited amount because of the depth of the market or the type of investment it is.

You need to understand how long it will take to set up a strategy. Many of these advisors are running elaborate strategies. Walt referred to them as nontraditional assets. You can't get into them overnight—you have to allow some setup time. Anticipate and understand that. Likewise, there's an issue of liquidity. Some of the strategies don't lend themselves real well to having funds removed instantaneously from them, and you must consider that in terms of the needs, particularly on the liability side.

You also need to determine if the markets changed adversely. There's no free lunch here. There will always be some sort of risk somewhere. You should understand where it's coming from and how it could bite you. Finally, you need to also look at the return profile of the strategy and determine if it will meet the expectations of how you're trying to utilize it. In our case we're using it for a product where we don't want to have a huge variation of the result. We don't want to have a home run one year and then a triple play against us the next. We want to keep hitting the singles and the doubles. We'd be happy with that.

When you look at performance analysis, you need to consider returns and variability together. A question to ask yourself is, are they in line with the expectations of the strategy? In other words, given what you've been told, do these returns seem to make sense? Are they related to the associated market conditions that occurred at that time? You need to also take a look at what I call the bad market years. Once you start doing this enough you'll know which ones they are.

Also, pay attention to changing market dynamics. Ron briefly referred to this in terms of tightening spread when he was making an adjustment to his spreads and the kind of future return he could expect. That is, you can look at returns of the past, and actual returns are the most reliable to consider when looking at a manager. But it may not be possible for them to replicate those returns simply because the market itself has changed.

When you're looking at returns and they're showing you results, you need to ask them the basis they're produced on. In other words, there are at least three that could be presented. It could be simulated. It could be paper trading, or it could be actual. In order of reliability, I would put them in reverse order. In other words, actual returns are much more reliable than paper trading or simulated, and it's very important for you to pay attention to that.

Here is a brief rundown of investment forms: managed account, managed pool, limited partnership, and offshore entities. It's certainly not a complete listing of all the types of forms. You can have a managed account where you own the underlying assets directly and exclusively on your books. You can have a managed pool where you own the assets directly, but they're shared and on your books. You can own a limited partnership where you would have a shared pooled entity, but not all the shares are equal. In other words, you have a general partner in there. The last one is kind of a catchall. The offshores are prevalent in the nontraditional classes, and they can take many forms; in fact, they could be called equity but look a lot like a limited partnership.

I put together Table 5 for looking at the two different extreme forms, the managed account and the limited partnership. It shows which form has advantages and drawbacks to it. Not to dwell on this too long, but the managed account really gives the best control in terms of setting it up and running it the way that you want. But it can also have its limitations in that you may have an asset in there because you own it directly on your books; for example, a short stock that isn't hedged in any way. You can't do that as an insurance company. You might be able to do it in a limited partnership if it were held as an other invested asset on your books.

TABLE 5
INVESTMENT FORMS ISSUES

	Advantages	Limitations
Managed Account	<ul><li>Control and oversight</li><li>negotiations</li><li>operations</li></ul>	Prohibited Investments Internal Accounting
Limited Partnership	Asset Flexibility Unique Unmatched Offering Size Flexibility	Liquidity No Redirects Partnership Credit Risks

Limited partnerships give you advantages that you don't see in managed accounts. Partnerships offer not only the asset flexibility, but also possibly size flexibility. A manager may offer a product as a limited partnership and not offer it any other way, so it's unique and unmatched. If you want it, you take it.

Regarding legal factors, this is a little nugget I'll toss your way. It gets a little complex, but this is from the advisor's perspective with regard to qualified pension funds. With the interaction of ERISA and some Department of Labor (DOL) regulation, advisors could be limited in the amount of pension-qualified funds that they can manage. That is because if they go over a threshold of 25%, then they themselves are deemed to be the fiduciaries. In other words, they don't get to take advantage of a prohibited transaction exemption. The bottom line of this is that your manager may not want to do business with you because the product that you would use it for will be qualified pension funds. That will throw them over their threshold, which is not a tolerable situation for them. This comes into play when there are either equity or partnership-type interests in effect.

One other consideration regarding the advisors is the marketing of your product. We're dealing with sophisticated buyers with the product that we're running at CNA. They're particularly interested in the strategies that we're using. We have to be careful about how we describe the strategies to potential clients. That is because confusion can arise from thinking that a client's funds are tied directly to a manager or group of them. We need to make it clear to our prospects that they are buying a contract from us, not making indirect or wrapped investments in the managers' strategies.

This is a rundown of the content of an investment management agreement: fees, strategy, issues of dispute, specification of bank account, reporting requirements, pricing frequency, and allowable broker/dealers. Some people also call this an investment advisory agreement. These are the necessary checkpoints. When you set this up, the most important thing is to take advantage of the management form. If you have a managed account, its greatest strength will be to offer you the ability

to tailor the structure and the operation of how that investment manager will run your funds.

You should pay particular attention to the specifics on fees. Depending on your product structure, you may need to watch out for the Association of Investment Management and Research (AIMR) standards, because the AIMR standards are not dollar-weighted. Whereas, if you have a product and you're getting recurring deposits, the results on the dollar-weighted basis could be different from the AIMR. If you have performance-based fees, then you could have a concern about that.

You have an enormous opportunity to tailor the investment management agreement the way that you want it. You can pick the bank that you want for a custodian. You can prescribe the sort of reporting you will need from the manager to meet your reporting needs. You can validate the portfolio performance by specifying pricing frequency on a given basis. You can even go so far as to specify which broker/dealers can do the trades so that you're satisfied with the quality of the trade.

I didn't talk too much about the specifics of the product, but we're running it with a LIBOR-enhanced group of managers and the futures overlay. One of the tricky things that comes up when using outside managers is that they can be faced with impacts of your product that would not normally be a concern to them. In our case, only some managers are able to run the futures overlay, so we step in and do it for those who don't. The futures part of the strategy, which many of the managers aren't running, can still have an impact on all the strategies.

For example, in the great bull market that we're having in our product, when the futures prices are going up, you get margin deposit into your account from the clearinghouse or the futures exchange. Well, when that happens you must have a place to put those funds and invest them. Likewise, if there were a bear market, the opposite could happen where we would draw funds down from them. It's important for the managers to understand exactly how they're using this product and what the conditions may be that could drive what they're going to need to do for you. You have to plan for these sorts of things in advance because you don't want to put your managers in a position of being unable to meet the needs of your product as driven by market developments.

Monitoring performance really goes back to the whole due diligence aspect of things. That is, you must understand the nature of the deal. It's of paramount importance. You should ask yourself, is performance in line with market conditions and application of the strategy? Track monthly results. Watch them over time and relate them to the strategy. Ask yourself how much of the return is market-driven and how much is the value added from the manager. You can also watch and relate

it to other managers, if you have a pool of them, and then draw some conclusions about their relative performance.

You also want to look at the accounts and trading to gauge strategy compliance and tracking with the strategy. That's very easy to do with a managed account. That's because you're settling those trades on your own on your books and you see daily what's going on. With a limited partnership it wouldn't be so easy for you might only be getting line-item reporting information. Finally, you need to set some benchmarks. Ron referred to this. You should try to gauge the performance and relate it to the strategy elements as best you can. Sometimes that's not a straightforward process, but you do need to try to pick out the parts of those things where you can identify the value added of the manager and focus on that.

The last point is what I call the back-office pitfalls. A lot of this isn't so much a matter of using the outside manager except that when you use the manager you may get into some very nontraditional asset classes. Once that happens, it's what I consider a case of buyer beware for processing set-up personnel. The reason this happens is that high-level decision makers that pull the trigger to go ahead and utilize an investment manager really aren't appreciative or concerned about these kinds of details.

All kinds of processing complications can pop up here. Suddenly, you can be faced with foreign tax forms that you've never seen before. You can be forced to place currency hedges on your books. You can be handling derivatives accounting that you didn't do before. You can even be faced with different settlement practices. You might not have the bond and the cash settling changing hands on the same day. It's called a free wire. You have to file the investment advisor agreement with the state and allow enough time to start using that investment advisor. A number of administrative things can come up, and you need to be aware of them. Try to think of involving your people who would actually be doing these strategies sooner rather than later. You might get a leg up on this part of the process.

**From the Floor:** In using the retrospective axis return, correlation, and factor analysis, what is the minimum time period that you would want to use to set this up? How sensitive have you found portfolio allocations to be to the time period selected?

**Mr. McHugh:** We haven't fully tested the time periods selected. We'd like to have returns over much longer than what we have but, practically speaking, for the number of managers that we've looked at and want to try to put together, we've only been able to get about seven years of data.

From the Floor: Data, performance?

**Mr. McHugh:** We're trying to get monthly data from the managers. Actually, the numbers that I used for this presentation were all quarterly data from generic manager databases.

**Mr. Shigley:** You've been at this for a long time. Do you have any real horror stories that can be traced to the use of outside managers? It's a logistically difficult problem.

Mr. Holman: On the product that I was talking about, we'd been running it since November 1995. We also use other outside investment managers at CNA. I'm not as directly experienced with those. I guess one of the horror stories I might have is that I know that when CNA merged with Continental Insurance Company a few years ago, we took over a large number of limited partnerships that basically would qualify under this class of externally advised assets. It was a tremendous administrative nightmare.

In terms of the current product that we're running, there aren't any horror stories to speak of. The one thing that I've noted is that as managers perform you need to continue to revisit the strategy principles with your highest-level decision makers. We've seen where strategies have underperformed LIBOR, not so much because the manager did anything wrong or deviated from the strategy, but because the market conditions were driving the returns of that strategy. It needs constant attention.

Mr. Frank M. Grossman: I was interested in Walter's comments about firms being interested in return, return, return, and return. I didn't hear very much about risk management in your presentation. I understand that standard deviation is used commonly. I understand that may be the case because it's tractable. I wonder about asymmetrical risk measures. Do they ever come up in the discussions? Do any of your clients ever say, "Hold on there, let's take a look at this. If we go up 10% that's great. If we go down that really hurts us."

**Mr. Blasberg:** What do you mean by asymmetrical? Are you looking for a higher return, but not just looking at one side of it, not looking at the risk side? Or you are saying that the risk return is asymmetrical?

**From the Floor:** No, certain negative returns or losses are punitive, and they have a significantly greater negative utility to your firm than an equivalent, upside return. Some particular measures that certain firms use are amount at risk and things such as that.

Mr. Blasberg: What was the last piece?

**From the Floor:** We sometimes use a quantity known as amount at risk, which attempts to quantify what a hit could be if things go poorly.

**Mr. Blasberg:** I can tell you that we look at it in a number of different ways. Often we don't see that question originate from the buyer of the asset management services as much as we try to push back with them to make sure they understand what they're getting into. This is probably not a good example for a life company, but take a P&C company that wants to get into junk bonds or common stocks. You can risk-adjust them and you can do risk-adjusted returns and the various beta testing that goes on in that area, but we often take it a step further and say, "OK, suppose the stock market does go down 20%, what is that likely to do to your surplus and your premium-to-surplus ratio?" I'm sure that there are other factors in the life industry that companies would want to look at. In the life industry, because capital is much thinner, typically they have much less use of those alternative asset classes for general accounts. But we find that if we do all the statistical measures of risk, we would typically look to risk-adjusted returns. But then we take it one step further, which is, what will the impact be on the financial ratios that are very important for your business? And, in some cases, if you're starting out with a new annuity product and you had a lot of surplus strain and you haven't figured that into your investment strategy, you could be out of business before you get any further, so it's a multidimensional thing. We pride ourselves for looking at it from what we consider to be an academic's viewpoint, but then we push it into the practical regulatory area.

**Mr. McHugh:** In the actuarial literature there's been something called the Sortino ratio, which measures downside risk, that people have focused on rather than standard deviation. Standard deviations assume there is a normal distribution. With the asymmetric distribution, the downside risk measure or Sortino ratio is a little bit more accurate for measuring the amount of risk.

**From the Floor:** There seems to be a lot written on these topics, but I guess what I was most interested in was whether practitioners are seeing them come up in what exists between the life insurer and the other side of investments.

**Mr. Blasberg:** As I said, we don't see them questioned that often. If an actuary is involved we do, but that's not usually the case. When they're going after some of the higher-risk assets, it's from a more traditional standpoint. They've already looked at it perhaps internally, and they're not concerned about it. But none of these is really the case with a smaller company.

**Mr. Shigley:** Also, I think both Ron and Jerry were referring to certain benchmarks that the manager was being evaluated against, so there's the implication that they're trying to make the benchmark, they're not willing to make arbitrary bets, and they'd even swap out of any undesirable risk in the benchmark.