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## Session 61PD Actuaries on the Asset Side

**Track:** Actuary of the Future, Investment

**Moderator:** GARY J. CAINE

**Panelist:** GARY J. CAINE

*Summary: The panel discusses asset class/equity sector historical returns, demonstrating the need for diversification; risk management at the portfolio level; and models and assumptions available at investment firms for retirement and education planning.*

**MR. GARY CAINE:** I headed off to the asset side quite a while ago. It's a treat for me to be here. I don't come to Society of Actuaries meetings very often since heading off to the asset side. I'm glad to see that there are a lot of people who have some interest in asset-side work. There's a lot of work that actuaries could be doing a lot better on the asset side than a lot of people who are out there doing some of that work right now.

This session was advertised as for beginners, but some people in this room look like they're a little past the beginner stage. Are some people here doing asset work now? Or people that are just interested in it?

**FROM THE FLOOR:** I would imagine a number of us have been involved in asset/liability studies.

**MR. CAINE:** Good. Some people are just interested in what life might be as an actuary that's gone off on a different track. I grew up in central Massachusetts, and I didn't care much for being a doctor, and I didn't care much for being a lawyer. There weren't too many other things that people knew about. But I was pretty good on math exams, so they had to figure out what to do with me. There was an insurance company, State Mutual, not too far from where I lived. Somebody told

me to go talk to somebody there. I talked with somebody, that person told me about these exams, I took the exams and that's where it started. I bet a lot of you have stories like that.

There was supposed to be another speaker, and he was supposed to talk about some other asset stuff. I think what he does is quite different than what I do. I'm probably fairly nontraditional from most actuarial communities. In fact, I'm a member of the Society of Actuaries' Task Force on the Personal Actuary. We actually just met fairly recently, and we're being folded into something called the "Actuary of the Future." Somebody at the Society has decided, and I think correctly, that there's actually a future for this kind of work for actuaries. There are others who wanted to call us nontraditional actuaries or whatever. There's a small group of actuaries who are doing this kind of work, but for the most part, in my day-to-day work I very rarely run into another actuary. Most of the people that I run into are chartered financial analysts (CFAs) or certified financial planners (CFPs). Yet I often say that it would be great if there were more actuaries doing this kind of work because there are a lot of actuaries who could bring a lot to the table.

Have any of you ever tried to log on to any of these Web sites, like Fidelity's or Vanguard's? They all have these projection programs if you want to do some personal financial planning. Have you tried to log on to two of them? Have you put in the same information and seen how different the results come out? The results come out tremendously different. When I started out in my early years, I, like many people, worked a couple of years for an insurance company. That was pretty interesting. You had a couple of decrements. You had interest, mortality, expenses and other things. After a while I went over to the pension side. We threw in a few more decrements, like turnover, salary scales, disability and other things that I'm sure you all know about. It was a little bit more to play with.

I remember in the early days, in the pension business anyway, which I was in for a number of years, everybody always focused on the interest rate. People didn't realize how you could really swing those pension results around by making some changes in the turnover rates. Turnover rates are very powerful. If you changed those turnover rates, you could have a huge impact on how your numbers came out. It's a lot the same way with these financial planning things that you see on the Internet. They are all pretty good. They've all got nice models behind them. They're all different beneath the surface. These models are very sensitive to the correlation assumptions, to standard deviation assumptions, your efficient model assumption and so on. There's a lot of work to be done here because it's astounding and worrisome to me that you go on all these different Web sites, and Vanguard gives you a totally different answer than Fidelity, T. Rowe Price, or anybody else.

**FROM THE FLOOR:** Do you have an idea why they would give such different answers?

**MR. CAINE:** They are all different models. Part of it is the return and correlation

assumptions that are in there. Part of it is that some people are using theoretical returns and some people are using historical return series. Some of them build these Monte Carlo simulators into their results, which in my opinion is a better way to do things. That means that instead of giving a theoretical return and a theoretical standard deviation, you actually run it a thousand times, because you have the computing power to do it, over all the different return scenarios that you might have had over historical years. You get a different result from that. You get a probability distribution. The most dangerous way to do these illustrations is just on a deterministic basis where you assume you're going to earn say 8 percent a year, because the downside risks are huge for people. People have found that out, of course, over the last few years. Everybody is using a whole different set of rules and assumptions. There's no uniformity. The problem is totally different from the life insurance problem. In life insurance, you put together this mortality table and it's a lot of large numbers. We don't know exactly which person is going to live how long, but we know if we have 100,000 of them, there's going to be some consistency to how they fall off the curve, so to speak.

But for most individuals, investing is not a large numbers exercise. You have a person who's trying to figure this out. There's an interesting book—I can't remember the title of it—written by an engineer who I think should have been an actuary. His name is Jim Otter. He's Canadian. He runs a lot of scenarios. His book is put together well and is well-researched using historical information. He comes up with a conclusion that an optimal portfolio ought to be 40 percent stocks. No more than that. Looking at the small number problem, you as a personal, private individual can't tolerate this kind of loss. You don't have an infinite horizon to recover from it, even if modern portfolio theory is right. It's a long answer, but all these modeling programs make different assumptions about life spans, how long you have, how you ought to shift your asset allocations as you get older and so on. There's a lot of unsolved work here to which actuaries could make a big contribution.

**FROM THE FLOOR:** What do you think about generic advice from financial planners on the percentage of a person's portfolio that should be in stocks, in bonds, etc.?

**MR. CAINE:** There's a danger to those kinds of things. The rule as I state it is that you should have your age in bonds. Most people usually state it the other way, which is that you should have 100 minus your age in stocks. All those are reasonable rules of thumb, but most of the people who state those rules have no idea how they were derived. It's like folklore passed down from generation to generation. The danger of this business is that there's so much of that going around. Things have changed a lot. People are listening a lot more now than they were a few years ago. But most of those rules are based on somebody somewhere who ran some model at some point in time. There are statistics about how pension plans on average are invested. The typical pension plan is 60/40 maybe; maybe five or 10 years ago it was 65/35 or maybe even 70/30. But that's pension plans. Pension plans are a totally different problem that you're solving. It's a totally

different time horizon. It doesn't apply to individuals. That 60/40 might be a great rule if we're all going to live forever and if we have a source to replenish our portfolio or if we're not going to withdraw. Once you start withdrawing and your portfolio goes down, you're in big trouble.

**FROM THE FLOOR:** If you have a few bad early years, you don't have time to make that up later because your fund has gotten smaller faster than you thought it was going to get smaller and you don't have any new money coming in.

**MR. CAINE:** Exactly. Let me move on a little bit. I'll tell you a little about our firm and then we'll talk a little about some issues. We're a boutique firm. There's one FSA in the firm—that's me. We have one CFA and one CFP. We started doing this around 1996. We're fee-only consultants, which in our business is not unique, but it's the minority that work that way. We're competing all the time against people that are working in other ways. Based on what has gone on recently with all the looking into practices in the investment world and so forth, I think people are getting more attuned to the differences between different business models. We feel good about ours and I think it's probably a business model that most actuaries feel comfortable with.

Our clients are private individuals and sponsors of pension plans or 401(k) plans. Actually we're right here in southern California, so our clients are mostly 401(k) plans. Maybe some people are in this room because, as I understand from what I read, the long-term growth of opportunity of the defined benefit world is questionable. Certainly here in southern California there doesn't seem to be a lot of new plans going in, at least not from large companies. There are the tax-shelter plans going in for smaller companies.

What we do is investment manager selection and investment manager monitoring. We don't pick individual securities. We don't hold ourselves out to do that. We think we'd be fooling ourselves and fooling the rest of the world if we thought that a small firm like ours could be good security pickers. Forget about how many securities there are in the United States, then there are all those securities overseas. Then there are all those different ways of putting these securities together. We'll talk about some of that. After you pick the securities, how do you structure your portfolio?

There are a lot of interesting problems. I hope you will continue to ask questions as we go through. One of the things that I find fascinating is happening in a lot of pension plans. If any of you work in the pension plan area and are focused at all on what's going on in the investment side of pension plans, particularly the defined benefit plans and the endowments and the foundations, there's a huge flow of money going into hedge funds. Now modern portfolio theory, as I understand it, basically says hedge funds shouldn't exist. Modern portfolio theory tells us that the markets are efficient. You can't beat the markets. One hedge fund approach is you buy a stock long and sell a stock short. We're eliminating the effect of the market

going up and down. We're just trying to figure out that one particular security. Buy IBM and sell Dell. Or find two stocks that ought to move up and down with the market much the same way, but try to pick out which of those stocks is going to do better relative to the other. That's a hedging technique. In theory, that shouldn't work if all of modern portfolio theory is right in that everything is efficient.

On the other hand, after years and years and years of pension plans investing in traditional stock and bonds, there's a huge flow into hedge funds right now. That's a tremendous opportunity for actuaries, people who are mathematically inclined, to run these models. Anyway, there's not just picking securities, there's putting them all together in a portfolio and how you do that. We don't do any of that. We just watch over things and make sure that things look like they are running right. We're more a manager of managers. As I said before, we compete in our day-to-day business against financial planners, stockbrokers and other investment advisors. There's a whole crew of different types of people with different business models. There aren't too many other actuaries in our business, but I wish there were more.

There are some things that are a little different about working the way we do than in some other things that actuaries do. It's hard to compare the quality of actuarial valuations. Do you hire me because my actuarial valuation is better than the other actuary's actuarial valuation? In the investment world, people think that they can measure the result a little better. Some people can and some people can't. A lot of people got fooled when they thought that Tommy Tech-Stock Picker was a lot smarter than Sammy Smokestack Stock Picker a few years ago, because they didn't realize one was picking tech stocks and the other one was picking smokestack stocks. Now they think Sammy is a lot smarter than Tommy was. But if you try to line people up, and try to compare apples to apples (which isn't all that easy in this business because people do everything they can to disguise that and make it hard), there is the possibility of comparing people on some sort of value-added basis. That's a little different.

Obviously, relationships and trust are key. In order to get through those tough years, Sammy had to have some good relationships, and now his clients are really thrilled. The only problem is that he had to get through those years, because if he lost all his clients, he didn't do himself a lot of good, and he didn't do his lost clients a lot of good either. Dealing with individuals, in particular, can be hard. A lot of good managers and a lot of good people lost a lot of business during those years when tech stocks were flying up. People just held the course and stuck to the discipline.

But if you are really bad, it's hard to hide. It's sometimes hard to demonstrate value added. Again, modern portfolio theory tells us that it should be really, really hard to be really, really bad. If everything is efficient, it's really hard to beat everybody else. If everything is very efficient, it should be just as hard to be lousy. Of course, most individuals have disproved that fact because most individual investors way underperform and are very good at things like buying high, selling low, and that

kind of thing.

Where is the need? Is there really a need for actuaries on the asset side? If you're talking about the kinds of stuff that we do, the need is huge. It's absolutely huge. We all know that there's a huge baby boomer bulge. It's scary when you think about these statistics, particularly with defined contribution plans, since so many more people are in defined contribution plans and most corporations favor defined contribution plans these days. Think about the average statistic. What's the average balance in a defined contribution plan these days?

**FROM THE FLOOR:** It's about \$47,000.

**MR. CAINE:** It's something like that. I don't know if it's \$40,000 or \$60,000. How far does that get you? It sounds great. You read the statistics that there's \$1 trillion in defined contribution plans. That sounds great and huge, and it probably plays well at government hearings. But the reality is \$60,000. We've got a huge problem because most of those people don't have defined benefit plans to fall back on. The statistics show that, too. What was the statistic I read the other day? What's the percentage that's covered by defined benefit plans now? It's very low. The need is absolutely huge. People don't know how much to save. They don't know how to invest.

On the 401(k) side, from the plan sponsor side, it's also huge. The government came out a couple of days ago with some guidance for plan sponsors—which they think that every plan sponsor is going to read—to make it easier for them to administer their 401(k) plans. The government thinks that maybe not everybody realizes all the responsibilities they have in managing their 401(k) plans. The way the rules are written, those responsibilities are huge. In every company that sponsors a 401(k) plan, there is somebody in that company who has personal liability for the investments that are offered in that 401(k) plan. The standard of the law is that you have to be an expert. Those investment options have to be expertly chosen. If somebody takes you to task, you have to be able to demonstrate that you went through a prudent and expert process in not only selecting those investment options, but also in monitoring those investment options.

There are a huge number of 401(k) plans that are not taking that responsibility seriously. They'll begin to take it seriously soon, though, because I think the government is probably just firing the first shot, saying "This is what we really meant, and in a couple of years we're going to start proving what we meant." Of course, some of this has also come out of recent court decisions. Some of this is interpretations that have come out of Enron and so forth that deal primarily with holding individual companies' stock. But a lot of it is applicable across the board. Anyway, there's a huge potential business here with individuals, and there's also a huge potential business with helping corporations because most CFOs or other company executives are looking to somehow limit the personal liability that they have for the investment decisions that all of their employees are making and for the

choice of investment funds. That's a need that we fill, but there's more than enough to go around for everybody in this room and a whole lot more than that.

**FROM THE FLOOR:** Going back a minute, if the average account balance is \$47,000, which is the number that was tossed out, there are a lot of 30-year-olds with \$10,000 account balances. Has anyone seen any statistics about the average account balance for people in their 50s, for example? That would be real interesting to see if this \$47,000 is a misleading number because there are so many young people in that.

**FROM THE FLOOR:** I'm with Hewitt and just coincidentally picked up last night from the office a research report we published on 401(k) plans. Total plan balance by age: for people in their 20s, it was \$11,600; for people in their 30s, it was \$36,000; for people in their 40s, it was \$75,000; for people in their 50s, it was \$108,000 and for people in their 60s, it was \$91,000.

**MR. CAINE:** I don't have statistics, but that is very consistent with what I see when we're working with a pension plan sponsor. We will look at an age/service distribution (I learned that from my old actuarial days). Yes, \$100,000 tends to be where it tops out. I'm here in southern California, where some of the numbers may sound higher than in other places. But it's amazing to somebody who has any kind of numerical knowledge. Our firm is part of a Hewitt network; we're the personal finance center, if some of you are familiar with that. A typical call would be from a plan participant in a Hewitt plan who maybe needs some help, or a plan that Hewitt is doing some work for, say a large employer. The family situation is that they're in their late 40s with two teenaged kids getting close to college. They have \$70,000 in their 401(k) plan, and maybe another \$15,000 in addition to that. You shouldn't go into this business if you can't look people straight in the eye and tell them they're in some trouble and they've got to do some serious rethinking and changing and work a little longer than they thought they were going to.

**FROM THE FLOOR:** There's something to keep in mind with this 401(k) plan stuff. They are relatively new, say 20 years old. Recently, in the small market, a lot of plans have come aboard, and people are contributing about \$3,000 a year on average sometimes. So four or five years later, with some market growth, they're not going to have a lot of money. The point of this is to get people to contribute to it, but it is a relatively new plan for many people. That's why balances are relatively low.

**MR. CAINE:** Yes, but people don't contribute. The whole education thing has been a big failure. People put huge amounts of money into automated communication. Nobody can put people face-to-face with their employees, so they bring in Financial Engines, mPower, Guided Choice and others. We had a person come into our office the other day. He's probably a baby boomer in his 50s, working hard, he's tired, and he's got a lot of money saved up. He's got \$300,000, and he wants to retire. You sit down and you say, "What do you need to maintain your lifestyle? What does

retirement mean to you?" "Oh, I think we need about \$100,000 a year." That may sound to some people like a very big amount of money. In southern California that's a decent lifestyle, but it may not be what it sounds like. You want to say to the guy, "Well, divide \$100,000 and you're going to last three years." Maybe with great investment results he'll last for three-and-a-half, four or five years. How long is this going to last? There's just a huge gap here. It's an interesting dilemma.

Let's move into some more investment-type stuff. I call the Callan Periodic Table of Investment Returns (1984-2003) the case for and against market timing. Many of you have probably seen this chart before. You can download and print the table directly from the Callan Web site. In fact, looking at this chart, the second page is one of the things that got me into this business. This chart consists of different asset classes. The different colors represent different types of investing. Red boxes are large company growth stocks. We went through a period where our large companies, basically our technology companies, did really well for a period of years, then they went down in 1995, 1996, 1997 and 1998. Then we get to 2000 through 2003, and all your tech stocks, all the stocks, did lousy. People lost a lot of money.

But value-oriented small companies' stocks, basically small companies selling at lower price/earning ratios, were they were bottom performers, and then they were the top performers for a couple of years. For three years, foreign stock—that's in white—was the best-performing asset class. Then you have a period of four years where it's a poor-performing asset class, relative to other types of investments you might make. Then there are another couple of years of good performance. I'll read from the top of the next page. "Above all, the table shows the case for diversification, across investment styles (growth vs. value), capitalization (large vs. small) and equity markets (U.S. vs. international) is strong." That's the standard story on this chart. I think other people could look at that and say, "You know, that's a pretty interesting puzzle. Maybe I could solve that."

It's nice to stack them best return to worst return, but in 2002, other than the green, which is Lehman Brothers Aggregate Bonds, the next one down, the Russell 2000 Value, was a negative 11.43 percent. They ranged down to a negative 30.26 percent. If you were diversified across stocks in 2002, you were sitting there for a loss anywhere from 11 percent to 30 percent, depending on how you're allocated. Maybe you lost 20 percent or 25 percent. I think there's room for different people to look at a chart like this and to have different interpretations. There are people who are market timers out there. Of course, market timing has gotten a bit of a bad name here, for those of you who read the newspapers, in the mutual fund world. Any kind of active asset management, other than indexing, has some aspect of timing of one sort or another. Some timing may be more obvious than others. But you're obviously making some bet different than the index.

When I initially looked at this chart, I was intrigued. One of the things that interested me in getting involved in this work was, is there some puzzle here that is solvable in some way? Do you really have to suffer through a year where you're



from -11 percent to - 30 percent? Of course, the theory is that you can't beat that. So just get invested and be diversified. That's why I call this the case for and against market timing.

We're not going to solve all these problems here today, but part of the session is just to open up some of these issues to actuaries and to ask if there's something interesting here. Are there some interesting problems here where, as actuaries, we could really make a contribution? I think there are.

**FROM THE FLOOR:** I'd be interested in your observations in consulting with individuals on how a traditional rebalancing program for a pension plan would be different from some of the individuals that you've consulted .

**MR. CAINE:** They are different, because individuals' time horizons keep changing too. A pension plan's time horizon is fairly constant and certainly in most cases isn't declining by a year each year. In the case of an individual's time horizon, it is. You're talking about rebalancing to a moving target.

Not to get off on too much of a tangent, but your question triggers an aside on the comment I made before. I said you go to the Vanguard Web site, the Fidelity Web site, and the T. Rowe Price Web site, you put in your personal information and you get totally different answers.

There are these new things in 401(k) plans, which I think have some merit. These are target maturity date funds. Is anybody familiar with those? The 2010, 2020, 2030? Maybe you even have some of those in your own 401(k) plans that you participate in. There are a bunch of them out there now that are all along that same model. But guess what? Everybody has got a different idea of what your target allocation should be. Let me back up a little for those who aren't familiar.

People have gotten so tired of trying to educate participants in their 401(k) plans. They're spending a lot of money and failing miserably at it. The concept here was to make it easy for them. Can you figure out how old you are? Can you figure out when you think you're going to retire? A person has to make one decision in his or her whole lifetime, and that person decides, "Okay, I'm about 45 years old, and I think I'm going to retire about 15 years from now. That's about 2020. That's the fund I ought to be in." That 2020 fund is allocated over time—on a theoretical basis, because nobody knows what your other assets are and how old your spouse is, or your kids, and all that other stuff. But they come up with a model. You have this nice multi-asset portfolio with some of each of these colors from the Callan chart in that portfolio. It's the 2020 fund. You never have to do anything because over time, the allocation of that fund is supposed to change and get more conservative as you get older. It's always supposed to be targeted optimally for the person who targets retiring in 2020. If that's the case, why are all of these 2020 funds allocated so differently? Yes, it's a different problem than the pension plan problem, and apparently at this point, it doesn't have a single answer. It's not like I'm going to

use the 1983 Group Annuity Mortality (GAM) Table and a 6 percent interest rate, we all go do the calculation and come out with pretty much the same answer. Depending on whether we do it beginning of the month or end of the month, we can put two little double dots on top of our "a" or something. We're all going to come up with some pretty close answers on that one.

This is an interesting puzzle, because there are a lot of smart people doing this. I can't remember who's using what, but you know Fidelity people are smart people. They've put plenty of resources into this. It's not one guy in a corner office. T. Rowe Price has a 100-page presentation on how they came up with theirs. Both their answers are real different. We could probably put 100 actuaries at it and come up with different answers, too. But it would be nice to expose some of that. I think it's just great stuff for actuaries to work on.

The party line is that this justifies diversification, rebalancing and all those things because you can't figure out how to beat the market.

We've started to touch on traditional investment risk-taking. The traditional way of investing is that you choose a benchmark, like Standard and Poor's (S&P) 500. How do you beat the benchmark? The only way you're going to beat the S&P 500 is by doing something a little different than the S&P 500. What are some of the things you can do? You can change your industry allocation. If the S&P 500 is 23 percent in financials, you say that you're going to put 25 percent in financials. That's the only thing you do. You use exactly the S&P 500 stocks and put them into exactly the same categories as the S&P 500 does. You say that you're going to try to beat that index by just changing those weights on those industries a little bit. You're taking a little risk, but not a lot of risk. You might beat the index by a little. You're not going to beat it by a lot. That's the idea there.

If you start talking internationally, you can start weighting the countries a little differently than the benchmark and try to show how smart you are by being able to do that. This is traditionally the way investment managers manage money, particularly institutional money. They take defined risks, try to beat the benchmark a little, add some value, prove how smart they are and get paid for it.

There's asset class allocation versus the benchmark. Again, if you're using some sort of a 60/40 stock/bond index, you might at a particular point in time, if you're running a balance fund with stocks and bonds, think stocks are particularly good, and bump your stocks up to 65 percent and push your bonds down. You try to add some value that way. There are all these different ways of adding value. If you're Bill Gross here in southern California, the bond guru, you might be shifting between government bonds and corporate bonds, and bonds with a little higher credit or a little lower credit, depending upon your view of the market cycle, and trying to add some value there. He's proven to be exceptional at that.

There's style, growth versus value, that kind of thing. There's capitalization, large

versus small. You're competing against the S&P 500 and you say that you'll put in a few smaller stocks. Then there's your specific security picks. I always wondered how hard could it be—you've got 500 stocks in the S&P 500—to pick the 495 best ones. Can't I identify five that are just really lousy? It seems like it shouldn't be so hard. I never actually tried to do it, so I don't know how I would have been at it. You ought to be able to identify a few companies out of 500 that are going to be below average. It's a challenging problem. But traditionally, that's how investment managers manage.

I have an actual example, which maybe we can spend a couple of minutes on. This is from an actual mutual fund prospectus. It's from the Turner Disciplined Large Cap Growth Fund. Let me read it through and let's talk about it. If we were going to analyze this, what risks is this manager actually taking? It says that the Turner Disciplined Large Cap Growth Fund invests "primarily in common stocks and other equity securities of companies with very large market capitalizations (i.e., over \$10 billion) that Turner Investment Partners believes have strong earnings growth potential. The Fund may also purchase securities of smaller companies that offer growth potential. The Fund will invest in securities of companies that are diversified across economic sectors and will attempt to maintain sector concentrations that approximate those of its current benchmark, the Russell Top 200 Growth Index." They're telling us what their benchmark is here. They're competing against the Russell Top 200 Growth Index. They are saying here that they're going to invest primarily in companies with market caps over \$10 billion. The average market cap of the S&P 500, depending on whether the stock market is up or down, is about \$45 billion to \$50 billion for the S&P 500. The Russell Top 200 would be higher than that. I don't know the exact number. I'd just be guessing. Maybe it's \$100 billion or \$75 billion—I don't honestly know.

Now it says that portfolio exposure "is generally limited to 5 percent of assets in any single issuer, subject to exceptions for the most heavily weighted securities in the Russell Top 200 Growth Index." In a nutshell, they've set up the rules. Nobody said, "This is what you have to do." But they've created this fund to do this, and they've told us that they are competing against the Russell Top 200 Growth Index. That's how we should evaluate them. What risks are they taking to try to beat that index? How are they trying to beat that index? Obviously they are not just buying those 200 stocks.

**FROM THE FLOOR:** They might buy some smaller companies.

**MR. CAINE:** Sure.

**FROM THE FLOOR:** They might shift to different weighting among the companies.

**MR. CAINE:** Right. They're going to maintain sector concentrations that approximate those of the benchmark. But sector concentrations doesn't mean individual securities. Sector concentrations means that if the Russell Top 200 is 25

percent technology, they're going to be 25 percent technology. But they're not necessarily going to have the same technology stocks that the Russell Top 200 has. They are not taking sector risks the way they are investing; they're maintaining the same sector concentrations. But they are trying to pick stocks in those sectors that are going to outperform. First of all, they are going to invest in stocks over \$10 billion. Now I assume many stocks over \$10 billion are not in the Russell Top 200, because that seems small for the Russell Top 200. Then they say that they may even purchase securities of smaller companies. Then they say that portfolio exposure is generally limited to 5 percent of assets. That means that they might go up to 5 percent of assets in a single stock that may be in the Russell Top 200. They could just stick with the stocks in the Russell Top 200 but weight them differently. They could be picking different stocks or they could be weighting them differently. There are a lot of different things. These are the risks that they're taking. These are their active management risks.

**FROM THE FLOOR:** I don't see anything in there that says how they'll be evaluated. What is "good"? Does "good" mean beating it by 1 percent? If they beat it by less than 1 percent, is that "bad"? I don't see anything about the goal. Maybe there was some other statement about what was considered "good." That is somewhat geared toward looking good. I'm probably not going to look too bad if I can get the client to buy into that statement.

**MR. CAINE:** How many pension plan sponsors or private individuals are going to be able to evaluate the results against what they've said they're trying to do? First of all, is this appropriate? If you're a private investor, is this an appropriate portfolio for you? Even if it is appropriate for you, if they beat it by 1 percent, is that good or is that bad? What should we be expecting for the amount of risk that they're taking? I think that these are all interesting actuarial puzzles.

**FROM THE FLOOR:** For a large plan this would be unacceptable because large plans often have multiple equity managers with more clear concentration as to what segment of the equity markets they would be in. This would be more potentially viable for a high network individual or a smaller fund.

**MR. CAINE:** Yes, if it were in a pension fund, it would be a very small piece.

**FROM THE FLOOR:** There's another thing they don't talk about. You assume it's going to be the U.S. equity market, but there's nothing in that prospectus that states that they can only invest in securities issued in the United States.

**MR. CAINE:** Exactly. I don't think this restricts them to U.S. securities at all. Actually, I picked this one out because actually this is probably one of the clearer statements that you'll ever see. Most prospectuses are going to say, "We invest in undervalued stocks that we believe have strong earnings growth potential." At least this one gives you a clue. At least on this one I know that if I'm going to evaluate this fund, the first thing I'm going to do is put it up against the Russell Top 200

Growth Index. For most other mutual funds you won't even have this much of a clue on how to evaluate them. Of course, institutional funds don't come with prospectuses. They are privately managed. So you are always working through this puzzle. How do we evaluate? How do we help our clients to understand whether this is appropriate for them, whether they are getting good performance and so forth? I'm raising questions; I'm not solving them. I think that was what I was supposed to do.

I'd like to get to the real interesting stuff, the new frontier of alternative investments. There's no clear definition for "alternative investments." It's primarily everything that is not plain vanilla stocks and bonds and cash. We all learned about stocks, bonds and cash. You took some courses in college and learned about finance, investing stocks, bonds, cash, and efficient market theory. Maybe somebody mentioned real estate, pork bellies and commodities. But basically, most of the theories are stocks, bonds and cash, and the markets are efficient, so just buy a bunch of everything. Close your eyes and be Rip Van Winkle. But alternative investments are really interesting and are growing tremendously right now. There's a lot of concern right now over whether there are enough smart people to handle all the money that people, pension funds and so forth, want to put into alternative investment strategies. There are capacity issues. Can the market handle it? Are there enough smart people to invest all this money?

Alternative investment strategies come in all different forms. We can't cover them all here. I'll mention here the idea of absolute return strategies. Let's talk about the impossible. I'll talk about a mutual fund that I'm quite familiar with. It's a pretty interesting strategy. This is a regular mutual fund. Anybody in this room can go buy it. It's no-load; go buy it.

The Strategic Growth Fund is run by John Hussman. He's a Stanford PhD in economics. He's doing what all of modern portfolio theory tells us is impossible. Of course, we don't have a long enough track record. There's always the issue of what's statistically significant and what isn't. But the fund has the ability to hedge market risk by selling short major market indices in an amount up to, but not exceeding, the value of its stock holdings. This fund has a very broad mandate. I'm not here to sell this stuff, but this fund has done well since July 2000 through December 31, 2003 as compared to what the Russell 2000 index has done and what the S&P 500 index has done. This fund is using some hedging strategies. Right now, he's got this four-quadrant system. Of course, there's a lot of what I'll call "actuarial mathematics" behind it, but he's not an actuary. He assesses what he calls "market climate." It's basically momentum and an evaluation of the marketplace. At different times he'll either be invested or not invested. He doesn't say that you can time the markets, but that's essentially what he's doing. He'll assess the climate and he'll say either that stocks are low-priced and the market sentiment is good so they ought to be invested heavily, or he'll say that values are high and market sentiment seems to be negative so they really shouldn't be taking equity risk.

Anyway, this is the new frontier. In different ways this is what a lot of pension funds are doing. They're going into these kinds of absolute return funds. He's not always an absolute return fund. He is sometimes long; he's never short. He's either long or neutral to the market. He is today, by the way, neutral to the market. This is the way he goes neutral to the market. He always holds a portfolio of stocks. He's fully invested in stocks at all times. But depending upon his view of evaluations in the marketplace and momentum (or sentiment, whatever you want to call it), he might hold short positions in the indexes against that. What that means is that you're short the indices, and your long selected stocks, so at that point, in theory, you have your market risk hedged out of it. You're trying to be long. You're trying to own stocks that are going to outperform the market or outperform the indices that you've gone short on.

**FROM THE FLOOR:** Overall you're less than 100 percent equities if you're doing that.

**MR. CAINE:** He'll be 100 percent invested in equity. He might be \$500 million invested in the equities that he thinks are going to do better than average. Then he'll be \$500 million short of the indices. He's exactly neutral on market exposure, in theory. He's just taking individual stock risk at that time. If he thinks the market is going to go down, he'll still be 100 percent invested in stocks. He's going to try to pick those stocks that he thinks are going to go down less than the market. He's going to be short the market, so he's got the market going down as much as the market goes down. He's got stocks that he thinks are going to go down less. When you add those two together, he's still going to have a positive return.

The graph of the change in value is not always an upward slope. There are periods of negative slope. But I'm just contrasting this to the other two indices. In theory, you shouldn't be able to do this. The Callan Periodic Table of Investment Returns says you can't do any of this. But pension funds are putting huge amounts of money into these types of strategies now because of all the equity market risk. This is a way of trying to protect against loss.

If he thinks that the markets are undervalued and it looks like clear sailing, he'll take off his shorts and you'll be 100 percent exposed to the market. This is a combination of tactical asset allocation and hedging. It's all the things that we've always been taught are impossible and we should never try at home by ourselves.

**FROM THE FLOOR:** My guess would be that he made a few good calls.

**MR. CAINE:** It would be interesting to look back at the record. Again, this is what I think is interesting analysis. There's stuff for all of us to do here. I've certainly looked at his record. You never know. In a hundred years, we'll know whether these were lucky calls or whether his system really works. But definitely the pension funds are moving in this direction. I'm sure some of you have read the headlines in *Pensions & Investments* about more and more money moving into hedge funds.

**FROM THE FLOOR:** What size is the fund?

**MR. CAINE:** It started out at very little. I don't think he's at \$1 billion yet, but he passed \$500 million. He's attracting a lot of attention.

**FROM THE FLOOR:** Are there a fair numbers of these out there?

**MR. CAINE:** No. There are very few. I think there will be more and more. There used to be something called the "short-short" rule. Basically, mutual funds couldn't do this, or it was very hard for them to do it. They've removed some of these rules, which opens up some more of these opportunities. There's the issue of what they call "transparency." Many of the hedge funds won't tell you what they're doing. You buy a track record. You buy a black box. What's unique about this is that this is a publicly traded mutual fund that's got all the disclosure reporting, prospectus requirements, portfolio disclosures and all that sort of thing. You can buy it and sell it daily as opposed to most hedge funds where you make a hedge fund investment. Some of them you can only cash out once a year; you're just in for the ride.

There are some interesting things going on. This is a young guy with a mathematical model. I just raise that because I think there are a lot of people in here who probably have some pretty good mathematical modeling capabilities.

**FROM THE FLOOR:** You said that this type of strategy conflicts with modern portfolio theory?

**MR. CAINE:** I think it does.

**FROM THE FLOOR:** What it also conflicts with is if an entity buys into a fairly disciplined view toward asset allocation holdings. Because of the hedge fund, at a given point in time, you have no idea how exposed you are to the market.

**MR. CAINE:** That's right.

**FROM THE FLOOR:** That's not a good or bad thing; I just wanted to point it out.

**MR. CAINE:** Yes. A month or two ago, maybe longer, he was invested in stocks; he had no hedges on. He didn't go from all to none. He's actually done it again. When the market was going up, he was in stocks, and then he moved his hedges over. Now he's 100 percent hedged, which he will tell you on his Web site. He actually publishes his weekly musings on his Web site, and it's free to anybody. You don't have to own the fund.

As another example, there's the Merger Fund, which is an interesting name. Again, it's a mutual fund format. It's publicly available. This fund has been around a long time. The other fund I talked about has only been around since 2000. This fund has actually got a very long track record. According to the Morningstar Report, it

practices "the arcane craft of merger arbitrage."

This fund never has a long position. It's fully invested in stocks, but without stock market risk. No, that's an exaggeration. Company A says it's going to buy Company B for \$50 a share. Company B runs up to \$45 a share. It doesn't run up to \$50 a share because there are some risks. The deal might not happen. The deal might take a long time. There might be regulatory issues. It might fall apart. Even if it doesn't fall apart, it might happen in a month or it might happen in 12 months. The price might change. There are always variables. What these people do is go in and analyze that deal. They form an opinion as to whether it's going to happen or not. If they think the deal is going to happen and they think it's going to happen relatively quickly, they'll buy Company B stock at \$45 a share. They'll hold it until it goes to \$50 after the deal is completed, and they make their \$5. It's strictly an arbitrage strategy, meaning that it doesn't matter what the stock market is doing off to the side. What's driving Company B's price is whether that deal goes through at \$50 or not. That's an oversimplification of what they're doing. That's one thing they do. They do a couple of other things as well.

It's an arbitrage strategy. They are arbitraging the fact that the stock went up to \$45, and the deal is supposed to go through at \$50. If it all happens, it's a \$5 profit. They'll sell right after the merger. The stock market could be going up and down a 100 points a day; it doesn't matter. They own Company B, and its price doesn't care whether the stock market is going up or down a 100 points a day. Company B's stock price depends on whether that deal is going to go through or not.

**FROM THE FLOOR:** I wonder how many deals they're invested in on average at a particular time.

**MR. CAINE:** Typically, they are invested in about 40 deals in the portfolio at any given time.

**FROM THE FLOOR:** That's fairly diversified.

**MR. CAINE:** This is the biggest fund out there that does this. There are one or two others now. This fund actually recently closed. It has closed a number of times over the years. I think there's over \$1 billion now in this fund, which is hard to manage.

**FROM THE FLOOR:** Do they strictly buy stocks or do they purchase options as well?

**MR. CAINE:** They use different strategies. Not every purchase is at \$50 a share. It could be that they're going to trade their stock. Company A is going to pay two shares for every share of Company B stock. Then they're into the situation of shorting one and buying the other one—going long one, shorting the other. Basically, they want to go long, the company that's being bought and going short



the buyer, so that they get the market risk taken out of the equation. They can use some option strategies and things to try to make that all come together.

Interesting things are going on out there that actuaries could find fun. So what can an actuary really do here? I've talked about a lot of fun stuff. I sit on the sidelines. I don't actually do a lot of the fun stuff on a day-to-day basis. I probably don't have the computer skills that a lot of people here in this room have and the modeling skills and so forth.

Here's the kind of thing that we do just in an oversight capacity. If we're working with a pension plan, let's say a 401(k) plan, what are some of the things we might look at? There's an investment policy somewhere that this plan sponsor has. The example will be the large company value fund in a 401(k) plan. You go tell your 401(k) participants, "We're offering you fifteen funds. One of them is this fund, and it's the large company value fund." It's a good thing if you can actually be telling the truth to your employees. If you offer them a large company value fund, and you tell them it's a large company value fund, you probably want it to be a large company value fund. You have a responsibility to monitor it to make sure that it is actually doing that, not just on the day you bought it, but ongoing, and that it continues to meet the promise.

We do—there's software that does all these things, of course—the style analysis. This is a mathematical regression analysis where you take a fund, and you regress the performance of the fund against, as an example, four different stock indices, like the Russell 1000 Value (a large company value index), the Russell 1000 Growth (a large company growth index), the Russell 2000 Growth (small company growth index) and the Russell 2000 Value (small company value index). When we regress against the different industries, we see how this fund's returns are moving compared to how the returns of those different indices are moving. It may move most in line with large stocks.

It may look much more like a large company investment fund than a small company investment fund. It may act much more like a value investment fund than a growth investment fund. This is good information for a plan sponsor to have. You've promoted this to your employees, your plan participants, as a large company value fund. You want to make sure that you're keeping your promise to your employees. You want to make sure you're giving them good funds. You may also be a little concerned about your personal liability. That kind of a style analysis is a very similar kind of regression analysis. It's just plotted differently. What are the underlying components? What would be the closest fit of the performance of that fund into those four different categories that I talked about earlier? If its behavior is closest to the Russell 1000 Value, then that's looking like a large company value fund. It's a way of helping a pension plan sponsor. Whether it's a 401(k) plan sponsor or an investment in a defined benefit plan, it would be the same thing. You are making sure that what these people tell you is going on is, from an auditing kind of view, what's really going on.

There is another way of looking at returns. I talked about style review, and now I'll talk about reviewing performance. We're just looking at raw returns. How did it do compared to a couple of different indices? How did it do performance-wise versus these different indices over different time periods? Pick a time period: the last six months, one year, two years, three years or five years. Just look at raw returns. How is it doing? How does it look? How does it look versus other funds? We take different funds and break them into quartiles on a graph. There might be a couple of hundred similar large company value funds that we're scoring this against. Are you in the top half of other similar funds, or are you below average compared to other funds?

You can quickly see how this fund did versus a couple of comparative indices. Was it above median? Was it above average for other large company value funds? Are you giving your employees a decent fund? If it's below average all the time, you probably want to be a little concerned. Do more research and think about it. How did it do versus different indexes? Clearly, if it's way below the indexes and it's way below most other funds, you've got something you need to look at. You've got a problem. It may be that you've just got it categorized wrong. It could be that it was actually a growth fund. Of course, there's a lot of other analysis you can do. But by looking at style and performance you can begin to get a snapshot and a comfort level with what's going on inside of an investment fund. If this fund has over a particular period a return that's slightly better than the index and about the same volatility, this manager—at least over this time period—has added a little bit of value. It's a little better than just being an index fund and without adding a whole lot more volatility.

Maybe it's not an outstanding picture, but it's decent. It passes most of our tests. You can stack it up against an investment policy and some other characteristics. Let's go on to the next fund. There's nothing here that would make you throw this fund out. You have some comfort because you've done some analysis.

**FROM THE FLOOR:** I'm pretending for a few minutes that I'm a CFO and my brother happens to be a pension actuary. I'm intrigued by some of these approaches that I'm finding out are being used now. I would probably hire my brother to do some analysis of this and figure out if this is just luck or whether there are some fundamental things going on that make some of these things a really good approach. Remember that Callan Periodic Table of Investment Returns that had all those colored squares? Looking at that doesn't convince me that that isn't just a purely random distribution of colored boxes. You could probably figure out if the odds are remote that that could be random. If it isn't, then there are some things going on in there that you may be able to project into the future. Off the top of my head it seems like there should be a lot of potential for actuaries on some of these issues with some of the skills we have.

**MR. CAINE:** I think it's tremendous. I think the Society of Actuaries could help a lot by making it clear that actuaries have these skills. Most actuaries are way more

trained and more analytical with much stronger modeling skills than so many other people in this business. Yet if you go out into the general public, clients have heard of the CFA. They've all heard of the CFA. They've all heard about the CFP.

Regardless of the merits of the credential, the CFP organization has done a very good job of getting the word out and creating public awareness. In the community I live in, the CFA is probably second best-known. In the pension community, the CFA may be equally well-known. The FSA doesn't hold much sway, and I think it should. Even without knowing you, just knowing that you've all been through some of the actuarial exams, I'd put you all up against any crowd of CFPs or CFAs that I could find. I'd be very confident that we've got those skills.

**FROM THE FLOOR:** In addition to having the analytical skills to look through asset returns and things like that, I think our ability to understand and explain liabilities basis is just as powerful. In asset/liability studies that we've been involved in, we've been asked to do stuff like this. We usually have to bring in one of our partners to do the asset side. But being able to explain it in terms of liabilities, that's what our trust managers are looking over to understand.

**MR. CAINE:** Absolutely, yes. Asset/liability modeling has really come to the fore in the last couple of years. I don't personally do a great deal of that. There are all the accounting issues involved with the markets going down, which of course has decreased assets, and with interest rates going down, which has increased the liabilities. There's a whole mismatch there. In what I've seen of asset/liability studies, the actuary does the liability side and then they bring in the asset people.

**FROM THE FLOOR:** I think bridging the gap is a very powerful tool.

**MR. CAINE:** I hope that we've covered at least a couple of the topics that you were interested in.