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Creating Solutions from a Lifetime of  
Learning Experiences, Talking Investments  
with Martin L. Leibowitz, PhD

# Creating Solutions from a Lifetime of Learning Experiences

## Talking Investments with Martin L. Leibowitz, PhD

Long known as “Wall Street’s bond guru,” Martin L. Leibowitz is a respected luminary of the investment industry, recognized for his significant research contributions and insights into the workings of fixed income as well as equity markets. With a background in pure mathematics tempered by a practical point of view, Dr. Leibowitz emphasizes the balance between the theoretical and the practical in his work. One of his earliest studies, *Inside the Yield Book*, written in 1972 with Sidney Homer, has been called the book that “transformed the markets’ understanding of bonds” and initiated the move toward active bond investing. During his 26 years at Salomon Brothers, Dr. Leibowitz helped to pioneer work on key market innovations including zero coupon bonds, mortgage-backed securities, immunization, indexing strategies, and dedicated portfolio theory. Today, he continues his research at Morgan Stanley where, in a recent paper, he analyzed the relationships between rebalancing liquidity, portfolio flows, and diversification into illiquid assets in highly diversified multi-asset portfolios.

A native of Pennsylvania, Dr. Leibowitz earned his bachelor’s degree in liberal arts and a master’s in physics from The University of Chicago. After completing his PhD in mathematics at New York University’s Courant Institute of Mathematical Sciences, he joined Salomon Brothers in 1969, where he described himself as “the house mathematician.” In 1991, he was named Salomon’s director of global research covering both fixed income and equities as well as a member of the firm’s executive committee. In 1995 he moved to TIAA-CREF (Teachers Insurance and Annuity Association—College Retirement Equities Fund), one of the world’s largest providers of retirement services, where he served as vice chairman and chief investment officer with responsibility for the management of more than \$300 billion in equity, fixed income, and real estate assets. Since 2004, Dr. Leibowitz has been managing director with Morgan Stanley research department’s global strategy team, where he and his associates have produced a series of studies on topics such as beta-based asset allocation, long-short equity strategies, asset/liability management, stress betas, and the need for greater fluidity in policy portfolios.

In addition to his work at Morgan Stanley, Dr. Leibowitz serves on the investment advisory committees for Harvard Management Corporation, Carnegie Corporation, the



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Rockefeller Foundation, and the International Monetary Fund. He is also vice chairman of the Institute for Advanced Study in Princeton, New Jersey. In 2009, Dr. Leibowitz was appointed as external advisor to the investment committee of the Singapore Government Investment Corporation.

A prolific author, Dr. Leibowitz has written more than 200 articles on financial and investment analysis topics; he ranks as the most frequently published author in both *Financial*

*Analysts Journal* and the *Journal of Portfolio Management*. His book *Inside the Yield Book* has gone through twenty-one reprintings and remains a standard in the field. In 1992, his collected writings were published in *Investing*, followed by *Return Targets and Shortfall Risks* (with Stanley Kogelman and Lawrence Bader) in 1996; *Franchise Value*, a compilation of studies of equity valuation, in 2004; *Modern Portfolio Management*, an examination of active equity strategies authored with Simon Emrich and Anthony Bova in 2008; and *The Endowment Model of Investing* (with Anthony Bova and P. Brett Hammond) in 2010. Ten of the articles he has written for *Financial Analysts Journal* have received the publication’s Graham and Dodd Award for excellence in financial writing, and in 2008 an article written by Dr. Leibowitz and his associate Anthony Bova was voted best in the annual Bernstein Fabozzi/Jacobs Levy Awards by the readers of the *Journal of Portfolio Management*.

The CFA Institute has presented Dr. Leibowitz with three of its highest awards: the Nicholas Molodovsky Award in 1995, the James R. Vertin Award in 1998, and the Award for Professional Excellence in 2005. In 1995 he received the Distinguished Public Service Award from the Public Securities Association and became the first inductee into the Fixed Income Analysts Society’s Hall of Fame. In 2003, Dr. Leibowitz was elected a fellow of the American Academy of Arts and Sciences. He has also received special alumni achievement awards from The University of Chicago and New York University.

In September 2011, Dr. Leibowitz spoke with members of the *Journal of Investment Consulting’s* Editorial Advisory Board about the growing complexity of fixed income and its role in pension funds today, the relative merits of defined benefit and defined contribution plans, his view of “the new normal,” and the importance of listening to clients. Taking part in the discussion were Margaret M. Towle, PhD, the *Journal’s*

editor-in-chief, of HighTower Advisors; Mark Anson, PhD, of Oak Hill Investments; Edward Baker of The Cambridge Strategy; and Meir Statman, PhD, of Santa Clara University. This interview is the eleventh in the *Journal's* Masters Series, which presents topical discussions with leading experts and visionaries in finance, economics, and investments.

**Margaret Towle:** First of all, Dr. Leibowitz, we are really pleased to have you as part of our Masters interview series. Our approach to this issue of the *Journal of Investment Consulting* differs slightly from our usual approach in that it focuses directly on a single topic—the pension crisis—and we know your expertise in the area of pension management will be very valuable. We all admire your background and experience, which represent wonderful contributions to the industry. Perhaps you could start off by talking about the major factors that helped to shape your career. Even though we're aware of many of your achievements, it would also be interesting to hear what you regard as your major achievement. We're often surprised by how different this is from what we thought. Also, we'd like to hear about what I would call your biggest learning opportunity and how you might have done things differently if you were able to go back and do them over.

**Martin Leibowitz:** I had so many breaks, as I would call them, so many learning experiences. In fact, one thing that I really do believe—this is not just some kind of humble pie—but I think in some ways I've been in a continuing, maybe continuous, learning experience, and that goes way back. In the years at Salomon Brothers, I learned greatly from talking to clients. Clients have problems, and if you listen carefully—even if in some ways their problems are misstated, so to say—you can still learn something by paying attention to where they're coming from. I found that to be very useful. I discovered that if you could find ways of addressing the issues they had, it could be productive for them and for my work for Salomon. As I look back over the work we did, I can see that it was driven by either listening to what were the issues of the day or listening to clients' ideas. Actually, the whole issue of immunization was sparked by a client who realized that the corporate environment at the time—way back then—just begged for a solution that immunization could provide. By working with several corporate pension funds, that client had put together a few issues that were not totally obvious in context to anyone else: One, interest rates obviously were very high—this was back in the 1970s and early '80s; two, corporations were at that point very much hurting for earnings, and their pension funds were a great drag; and three, accounting for pension liabilities was based on a rigid, super-conservative discount rate of typically 4 percent, a situation that was, one could argue, a little bit the opposite of what we have today. The only way to convince an actuary that a 4-percent discount rate was totally absurd was to actually do an immunization and show that pension liabilities, as stated by the actuaries, could be immunized on a cash-flow basis at a significantly lower asset value than the pro forma based upon

their calculations. That was a win-win-win situation. The beneficiaries won because their pensions were more secure, the corporations won because they reaped the reward of knowing the reality of their pension liabilities rather than the much higher fiction, and—needless to say—the firm I worked for got some rewards as well. That was very gratifying and, I have to say, a particularly happy example of how these things happen. It was a solution that was actually brought to me because of some of the work we had done in bonds and bond duration, and it was thought that we could help make this process happen.

**Margaret Towle:** I think that's a really great lesson for everyone in terms of looking at the needs of the client from a solution perspective, rather than just from the standpoint of the product that we're presenting.

**Meir Statman:** That was a wonderful description of a win-win-win situation, but very often there is a win-lose relationship between Wall Street firms and pension funds. We know this from the scandals in Orange County, California,<sup>1</sup> where what was good for the providers of financial services did not serve the citizens well. More recently, there was the Bank of New York story,<sup>2</sup> where it seems that fees that were good for the bank's traders in currency were not good for pension funds. My own sense is that Wall Street companies flatter the staff of pension funds, making them feel more sophisticated than they really are, and then take advantage of them and the beneficiaries. I hope that's not too harsh. Could you comment on that?

“ That was a wonderful description of a win-win-win situation, but very often there is a win-lose relationship between Wall Street firms and pension funds. ”

**Martin Leibowitz:** Let me make a couple of points. Certainly these days I think the larger pension funds are every bit as sophisticated as corporate plans. In fact, not only are they sophisticated, but they have so many more tools available to level the playing field, the buy side and the sell side. Now, having said that, what you describe actually does happen, no question about it. There's no defending it, and it's totally wrong. However, I think the broader issue is that any service provider—Wall Street or otherwise—that does not find a middle point where both the provider and the receiver get a reasonable degree of benefit—and frankly the receiver should get the most benefit out of any sort of interaction—is doomed to not remain in business for very long or to pay a very hefty price in reputation and otherwise. So I think there is a natural check, and that over the years, on balance, most of the

successful firms have found that middle point—not that there aren't incidents along the line such as you just described. They are sad and tragic and just should not happen.

**Mark Anson:** My own perspective from having managed pension funds<sup>3</sup> is that while the situation Meir described might have been the case a decade ago, as you know and are well aware, the large investment banks and brokerage firms now have pension consulting services in-house because they recognize that, yes, there can be a short-term gain from taking advantage of a pension fund, but it's not in the long-term interest of the business. So there's been greater education as a result, and the consultants have helped too. They're far more sophisticated today than they were ten years ago, when a consultant didn't really have the same level of understanding or expertise as an outside brokerage firm or investment bank. So I do think the playing field has been leveled.

I'd like to suggest that we take a step back before we get to the more detailed questions and talk a little more about your background, Dr. Leibowitz. Ed brought up a question that I'd like to pose to you because it talks about your background and then brings it forward as it relates to pension funds. As Margaret mentioned earlier, this issue is dedicated to pension funds, not only in the United States but also globally, in emerging as well as developed markets. Ed noted that you were extremely well-known in the fixed income industry at Salomon Brothers. That's where you built your early career, and it was one of the huge stepping stones for you. At the time you were at Salomon managing the fixed income floor, did you have any sense that the world of fixed income would become as complex as it is today? Furthermore, how has the world of fixed income changed for pension funds since those early days?

“ In some ways, aside from the nature of the instruments, which certainly comprise a much wider keyboard these days, we are servicing the same basic functions ... ”

**Martin Leibowitz:** Let's take the first part first. Simply put, the question is did I have any idea where we were going with the complexity of fixed income? The simple answer is no. No one could have imagined that. In fact, I remember fairly vividly when we first started getting into mortgage securities. It seemed very, very complex. Forget about things like collateralized waterfalls<sup>4</sup>—I mean just straight, simple Ginnie Maes.<sup>5</sup> There was great discussion as to what we should use as the average life. The position then, if I recall, was using a yield to a twelve-year average life, as if everything would be paid off at that point. It seemed complex to try to work out those expected prepayment schedules, which were a long way

from doing prepayments by zip code and the whole bit with rating the securities and the waterfalls and the various zeros and PO (principal-only) and IO (interest-only) securities. Everything was a step-by-step process, and we went from one thing into the next into the next. In the early days before we had started moving in that direction, it was very far from anyone's thoughts. I think even the people who developed these instruments—the Lew Ranieris<sup>6</sup> and Larry Finks<sup>7</sup> of the world—I think they too were in a step-by-step process as they went up this ladder of ever greater complexity. So that's the simple answer to question number one.

Let's turn to question number two: What is the role of fixed income in pension funds today? In some ways, things have come relatively full circle. Well, it depends on how far back you go. In the very old days, there were many state funds that had charter limits that allowed only fixed income, and high-grade fixed income, as their asset investment. Basically these were investments where you were trying to earn a return, earn a yield in a very safe way. Durations were typically reflective of the intermediate duration that was the market average at the time, although that could be all over the place. Fixed income was basically used as the ultimate in safety. As we started to progress into stock and bond portfolios, the bonds were the safety part of the portfolio, the liquid part of the portfolio, and the secure yielding and cash throw-off part. However, the bonds weren't necessarily scheduled to specific liabilities. Then, as we moved into the immunization era that we just talked about, that's when bonds started taking on, at least to some degree in some funds, that special role of directly servicing the liabilities. Of course, ideally the whole pension fund services the liabilities in an indirect fashion. However, here we're talking about directly servicing the liabilities, either in terms of throwing off the cash necessary to pay the liabilities or of having a duration management strategy that would be some form of immunization that enables that particular immunizing component of the fixed income allocation to provide a flow of money as needed and still come out whole. What's transpired over the years is that fixed income has played multiple roles. Of course, it's moved in some cases to more complex investments with—let's hope—higher yields or better return-risk relationships, although as you pointed out earlier, it doesn't always prove to be the case. In some instances, matters were overdone on the risk side. However, you still have immunization coming back into the fore as the defeasance for different sets of reasons now. In some ways, aside from the nature of the instruments, which certainly comprise a much wider keyboard these days, we are servicing the same basic functions: one, certain types of defeasance functions, two—maybe simultaneously—certain types of volatility-reducing functions, and three, provision of a relatively secure source of return. And one other thing: Fixed income is sometimes viewed as a hedge against disastrous equity markets.

**Mark Anson:** I know you've done some great analysis, including that for CalPERS (California Public Employees' Retirement System), that showed up to 90 percent of the risk

exposure of an average institutional pension fund can come from equity beta. The first part of my question is whether a pension fund should maintain or reduce its equity beta exposure. At the same time, most of the public plans in the United States are significantly underfunded so, as a secondary question, do you think that pension funds should turn to a more aggressive asset allocation to try to “earn their way out” of their underfunded status?

**Martin Leibowitz:** That is a real conundrum, and you can argue both sides of it. One of my favorite charts shows that when you’re in the middling range of funding ratios and assuming you have sufficiently strong sponsorship, as your funding ratio goes up, you’re in a position to be able to take more risk and—if you think the returns can be there—you perhaps should take some more risk up to a certain point, at which it caps out. If things get good enough, then you might want to say: “Well, look, why should I take any more risk? I might as well just defease the whole thing, put it to bed, not worry, and go on to other things.” You can reach a point at which you peak off and flatten out your risk or, if you’re in sufficiently good shape, you may actually choose to take your risk totally down and say that you are out of the game. You see this with individuals. There are individuals who reach a certain point where they feel they don’t have to take any more risk, and they’d rather have their focus on other things. So they just buy an annuity with their basic financial resources. This sometimes comes out of largesse, aside from all of the other reasons an annuity purchase makes sense for individuals. Going in the other direction, when you find yourself in a deficit situation, there is certainly a logic that would say, “Hey, look, when we get down to a seriously low deficit position, we can’t afford to take risks, and that’s when we should derisk the portfolio the best way we can.” Of course, one could argue what derisk means. On the other hand, you can take the position that you’re in the soup, and you should really do your best to, as you say, try to earn your way out of it.

You see all forms of this behavior. I like to put it in the context of an individual approaching retirement. What should you do if you find yourself in a position where you’re close to retirement or you’re in retirement, and your assets get below the level you really need to survive on? You probably should not take any more risk at that point—unless that isn’t the whole story. Suppose you had an uncle or a parent or a trust fund that you knew you could call upon to supplement your assets, if that became necessary. In which case, that is not the whole story, and you really do have more resources available. As you know, there are huge arguments that flare back and forth about taking any kind of equity risk in a pension fund environment. For the purists among us, including some of my co-authors and friends and people whom I respect greatly, they would say that there is no reason—certainly for corporate pension funds—to take any kind of equity risk whatsoever. To my mind, that’s far too extreme, but I think there are certainly situations that call for basically putting yourself in a derisked position.

**Meir Statman:** I wonder if you would address differences between public pension funds, corporate pension funds, and individual retirement funds? Public pension funds involve political games. Public union officials say that the shortfall in public pension funds is the fault of bankers who screwed up in 2008. My own sense is that we’ll never get it right unless we move to defined contribution plans. How do you see it?

**Martin Leibowitz:** Let’s talk defined benefit plans versus defined contribution plans. When I was at TIAA-CREF, we had the largest defined contribution system around at that time. It was a very good system and worked very, very well. Many professors and university personnel found themselves retiring on far more money than they thought they’d ever have, far more money than they were making as salary. They had incredibly good feelings toward the organization. That’s the happy side of it. We certainly enjoyed that, and I was proud to be part of it. However, that happy side came from a number of characteristics that are not true of all defined contribution plans. First of all, the plan had contribution rates that were relatively high as well as optional contribution rates, which made them even higher. Second, the plan started a long time ago, so people were contributing over many, many years. Third, their association with the university system—maybe not one particular university, but the overall system—was fairly long term, so there was considerable continuity on the part of most of the participants, and they had put in a lot of money. Another beneficial factor was that fees were generally low. Also, the organization made what were at the time fairly innovative moves in the early years. In 1952, I think, they moved into a U.S. equity position for many of the defined contribution plans, and they also were very early moving into international equities. So it was fairly sophisticated, fairly advanced in terms of things they were doing, which over the years certainly paid off and added to the accumulation of the participants. So that was a great story.

Unfortunately, those circumstances don’t exist for all defined contribution plans. Often the contribution rate is less than it really needs to be to provide a sufficient benefit at retirement. Second, there are often discontinuities in participants’ employment. Then there are other disadvantages of defined contribution plans, depending on the design of the plan, such as not having shared mortality risk or portfolio management costs. Defined contribution plans often look like a win-win situation in the sense that they can require less costs and less contingent liability for the corporation, so less of a hassle, and the individual actually gets to see the account in which he has his money, he tends to feel very good about that, and he has the freedom to manage the account for his best interests, or so we hope. So, often there’s a win-win, but I’m not sure if that is perhaps more perception on the part of the individual than realistic. In the public fund area, there’s been more resistance to the defined contribution plans.

**Meir Statman:** Is that because defined contribution plans make no room for games played now by unions and politicians?

**Martin Leibowitz:** I think it's because most of the public defined benefit plans are very good plans and the defined contribution plans that are proposed may be visibly less appealing.

**Mark Anson:** As we talked about earlier, you were a pioneer in immunization, or rather in what was then called immunization and today is called liability-driven investing. Different nomenclature, same idea. If you go back a decade or so to the late 1990s, when I was coming on board at CalPERS, the funding ratio for most public plans and certainly for corporate plans was quite high. In fact, it was close to 100 percent. Did we miss an opportunity to immunize at that point? Did we end up squandering that funding ratio and, if so, what is our path moving forward, for both corporate and public plans?

**Martin Leibowitz:** Let's recognize, and you can check me on this, but it seems to me that if you freeze your plan and you're still in a live plan, you may find yourself not earning at the level of interest that you need for the emerging liabilities that are coming down the pike. You could find yourselves drifting down, even if you froze the plan at 100 percent, because new liabilities are always coming up. If it turns out that interest rates and earning rates decline in terms of any new investments of new contributions, the 100 percent could come unwound to some extent.

**Ed Baker:** I wonder also, in this world, where credit risk is beginning to have a different look and feel to it, as we're seeing in Europe and even in the United States, if that doesn't raise some eyebrows at the use of bonds for these immunization strategies. It certainly introduces some new uncertainty about outcomes.

**Martin Leibowitz:** That's a fair point. In fact, I think some of the situations that were cited earlier really had to do with deteriorating credits that were being used for pro forma defeasance. That's actually substituting one kind of risk for another and not fully derisking. The issue is having a sufficient level of quality to be able to have high assurance, in a portfolio context, of servicing those liabilities. If it turns out that one or two credits deteriorate as part of a portfolio, it's not the end of the world, but as we saw there can be instances and environments where entire swaths of credit securities undergo serious spread widening and come into question in terms of their viability—and entire governments, too.

**Ed Baker:** It's certainly a brave new world.

**Meir Statman:** You started our discussion with a great story about clients who ask questions that lead to creative answers. I know you've been working mainly with institutional investors. Some of the readers of this interview are advisors to institutional clients, and others advise individual investors. Can you comment on the frustrations that come when people like you try to educate clients, whether individual or institutional?

**Martin Leibowitz:** I have a couple of things to say about that, but I don't claim to have any special expertise in this area. I find it very helpful when considering problems to use a way of thinking that I alluded to earlier, and that is to

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deinstitutionalize the framework. What would it be like for an individual facing this situation? What would be his or her parameters of actions? I find that brings it down from the airy institutional heights to a more concrete way of thinking. That's just a kind of mental framework for me. In terms of actually trying to advise individuals, let me just say that I think advising individuals is much more complex than advising institutions. This is due to the fact that the very specific situations that pertain to individual circumstances are far more complex. They involve other types of ingredients such as life events, contingency events, taxes, estate taxes, and so forth. There are also many more complicating factors, not the least of which is that you're dealing with not single but multiple objectives almost all of the time, and you're dealing with objectives that shift in priority with asset level. It's a very complex model to develop the right kind of way to look at an individual's overall asset allocation.

**Mark Anson:** Talking about asset allocation, let's say you had a clean sheet of paper, and you were looking at an underfunded state pension plan. Most public pension plans are underfunded in the area of 20 percent. What type of asset allocation would you draw up for such a plan right now?

**Martin Leibowitz:** That's a very, very tough problem. I'll give you some pieces of it. First of all, I'd be very wary of taking a long-duration stance in this market with ten-year Treasuries at 2-percent yields. That for openers is relatively clear. Where you go from there becomes much more complicated, and it relates to the whole issue of short-term versus long-term points of view. A lot of investors who are potentially long-term investors and who like to think of themselves as long-term investors actually find themselves becoming short-term investors in the face of what can be difficult markets because they just can't take the strain and the pain. I think those kinds of considerations enter into deciding what you can try to do over the long term. Then the

question becomes whether you should try to make decisions that are basically valuation-sensitive, and I think the answer to that is—well, we just talked about fixed income. I just gave you a valuation-sensitive recommendation about fixed income. Now should you try to apply that in other areas? The problem is that it's a lot easier in fixed income to visibly see when the valuations are reasonable or very high or very low. Other asset classes are much more confounding.

**Mark Anson:** Let me try to tweak that a bit. You wrote a great paper about alpha hunters and beta grazers, in which you talked about the pure alpha hunters and how hedge funds are a demonstration of that. However, I think the market has come to understand that hedge funds are some combination of beta grazer and alpha hunter. Do you see a role for hedge funds within a pension fund portfolio allocation, and how would you view that role right now if you were looking at an underfunded pension plan?

**Martin Leibowitz:** Let me take the first part of your question. Hedge funds have, in aggregate and certainly in some segments, done very well in terms of producing viable alphas, not just beta rides, but alphas of some significance. They can do this also with relatively modest betas. What I think is important and all too often not well done is that people distinguish the returns that hedge funds generate between what they could have gotten from just riding a beta wave and that which is really the alpha, above and beyond that. People should make this distinction for the obvious reason, namely, that it can be much cheaper to ride a beta wave, and you shouldn't have to pay the fees for the benefits that come out of that, the kinds of fees that hedge funds typically charge. You're in there for the alpha. We've all seen that the hedge funds, as the ultimate in flexible investing entities, have managed, for various reasons and in various ways, to carve out some real alphas if you do the right kind of analysis. That answer says yes, this can be a way of getting alphas that are valuable, and they can be particularly valuable if one is trying to get a reduced beta and at the same time have the opportunity to generate some alphas. Having said that, you know that the alphas are not automatic, not every hedge fund produces them, and occasionally some hedge funds have had really horrendous blowups. Also, there are many more hedge funds chasing after the pie of opportunities that exist, although that pie itself may be expanding somewhat. This is not just like shooting fish in a barrel. One has to be careful in terms of both selection and monitoring.

**Margaret Towle:** There certainly is a debate within the alternative investment space in terms of alpha exposure and beta exposure, but what if we look at the instance of someone like a global macro manager? Whether they say it's alpha or beta, they seem to be dynamically managing the beta exposures, and that fills a useful role in the portfolio in terms of being flexible, opportunistic, and dynamic. Where do you see that in the role of hedge funds in a portfolio?

**Martin Leibowitz:** That's an interesting question. There's a lot of what I would term confusion in people's minds. How often have you had the following conversation:

*Do you believe you can predict the direction of the market?*

*No.*

*Why do you have hedge funds?*

*I believe they can get out of the market when it's going the wrong way.*

*Isn't that predicting the direction of the market?*

*Well, yeah.*

*So you think they can predict the market direction, but you can't?*

Some people would say yes to that last question, but you'll also hear people offer the more refined answer: "Even if it becomes evident which direction we want to go, which way we want to reduce risk, we're not in a position to move quickly enough to do it. The hedge funds are nimble enough that they can and, to that extent, their beta adjustment can be beneficial to us—in theory, assuming that they're going the way we would have gone anyhow and assuming that way turns out to be the right way." That's the more sophisticated argument for a beta-adjusting hedge fund. There's something to that argument. There's a lot of sequential chains to it, each one of which may not be totally secure.

**Meir Statman:** One of the articles planned for this pension issue of the *Journal* is from Estonia, where they have a mandatory defined contribution plan to which both employees and employers must contribute. This is part of their "three pillar" system. One pillar is the equivalent of our Social Security system, another is a mandatory equivalent to our voluntary 401(k) system, and the third is personal savings. Would you comment on that? Does that seem like a good policy that we might adopt?

**Martin Leibowitz:** It certainly is a policy worth thinking about, especially if it has a sufficiently high contribution rate. The defined contribution plan has its virtues, although I think there are ways of tweaking it so it can be improved. The key factor in just about any defined contribution plan is to get the contributions high enough and create an environment or system such that the contributions can go on long enough. I'm not familiar with the Estonian plan, of course, but it sounds like it has at least two of those ingredients. The three-pillar system goes back to a 1994 report written by Estelle James, an economist at the World Bank. Part of her analysis played off the Chilean system, which I think had just recently been instituted at that time. While that system had its problems, it had some of those characteristics as well.

**Meir Statman:** I think that the difference is that the first pillar in the Estonian system is the equivalent of our Social Security so that you cannot take your Social Security money and put it into risky assets. I believe the Chilean system allows more risk-taking, and some people who are given a chance to risk their money manage to lose it.

**Martin Leibowitz:** I also think the fees in the Chilean plan were rather excessive in the early years. My understanding is that they have resolved a lot of those issues. I believe Australia also has superannuation trusts based on

the three-pillar approach. I was surprised to see a recent Towers Watson report that said about 40 percent of all pension liabilities worldwide have some defined contribution characteristic. That's growing very rapidly. By the way, do you have any idea of the magnitude of defined contribution plans in the United States at this point? Let's say that defined benefit plans are roughly \$3 trillion and that corporate plans are about \$2.5 trillion. So that's \$5.5 trillion in defined benefit plans. How about \$8.5 trillion in defined contribution plans?

**Mark Anson:** That's certainly more than I would have guessed.

**Martin Leibowitz:** Yes, it's more than I would have guessed too, and it's more than you'll see in the usual statistics for the following reason: The usual statistics give you the 401(k) plans and the analogs of defined contribution plans, but they don't give you the IRAs (individual retirement accounts), and the IRAs are the fastest growing area of defined contribution, not because of individual contributions, but because of rollovers from former corporate plans. That number is just mind-boggling, and it has all kinds of interesting implications for what is a massive coherent pile of assets in terms of their market behavior. For example, extrapolating from what we saw at TIAA-CREF, we know that institutional investors rebalance their plans fairly routinely in one way or another, either by having outside limits or on a periodic basis or some combination of the two. Individuals, for the most part, don't rebalance over short-term periods. They basically take the allocation that the market gives them. Over the long term, they will rebalance and—amazingly—seem to come back into the 60-percent equity/40-percent bond alignment, as if it's an act of nature in some strange way. However, over near and intermediate terms, they don't rebalance. In addition, they tend to rebalance with their cash flows rather than with an asset revision decision. At TIAA-CREF, participants could change their fixed income/equity allocations daily on existing assets in their 403(b) plans, but they didn't. Instead, if the market pushed equities down, participants would basically do nothing with their actual allocation, but they would change the allocation on their new flows and put more into equities, not immediately but over the course of time, and eventually bring it back up to the 60/40 level. So there's very different behavior between defined benefit and defined contribution plans, and the defined contribution plans are getting so large that it's worth taking note of the implications of that.

**Ed Baker:** What about the endowments and foundations? Are you observing any changes in behavior there, given the recent past?

**Martin Leibowitz:** Well, yes, those plans have certainly paid a lot more attention to liquidity and contingency planning for liquidity. They have been much more careful in their commitment strategies for illiquid private equity investments. It's not as if they're not investing; they're just trying to be much more careful about the risks of overshooting their target allocations in a bad market.

**Ed Baker:** But you think the allocation toward those sorts of assets is still high and should still be high?

**Martin Leibowitz:** It depends. There's a big difference between the larger funds and the smaller ones. There's more of a focus on maintaining liquidity, not just for servicing those liabilities, but also for being able to take advantage of what may be dislocations in the market. It was frustrating in the depths of 2008 and early 2009 to know that there were some wonderful opportunities around, but you just didn't have the liquidity to even begin thinking about it. I think there's a general feeling that well-chosen private equity investments will provide a premium over time that can justify their illiquidity. Of course, if you can't afford the illiquidity, there's no premium that's worthwhile, but if you can, if you can earn a significant extra premium by the greater degrees of freedom that a private equity fund can give you, it's worth pursuing. Again, all of these things change over time. One has to be cautious not just about how individual managers change in terms of their business models as they become larger and larger, but about how the overall market changes. To answer your question, I think there's been relatively little change in the allocation assigned to illiquid investments. Maybe the advancing of it has slowed down a bit, but I think very few people have pared down that allocation significantly.

**Mark Anson:** I'd like to ask you a question about the debate over the appropriate rate at which to discount liabilities in a pension plan. In corporate plans, they use a AA discount rate, but for public pension plans, there's a huge debate over using everything ranging from the yield on a long-term Treasury bond to a taxable municipal bond rate to the actuarial rate that pension funds currently use. It would be interesting to get your views for a public pension plan, keeping in mind that if we were using ten-year or thirty-year Treasury bonds right now with yields at 2–3 percent, that's a very low discount rate on liabilities.

**Martin Leibowitz:** As you know, this argument has had people swaying back and forth in a theoretical sense and obviously in a very politicized sense. One of the things that concerns me is what do you use your liability calculation for? What does it really mean? What it's intended to mean is that this is the amount of money you have to set aside to fully fund at least those specified existing liabilities or future liabilities that are specified, given an investment in the corresponding instrument that gives you that yield. Essentially it's a kind of a notional defeasance. That's pretty harsh. That means you're taking all of the risk out of the game except for the inflation risk, which is what the beneficiaries suffer. By the way, it's worth noting that the United States is perhaps the only country, or certainly one of the very few, where most liabilities are denominated in nominal terms for the most part. I know there are certain COLAs (cost of living adjustments) in the public area, but relatively few in the private area. It seems to me that people think of the liability calculation as a notional construct of the amount needed to put the plan to bed. As we were talking earlier, would anyone put the plan to bed in a 2-percent interest-rate environment? I guess if you had a gun to your head, you might have to.



There was a circumstance in the United Kingdom in late 2005 and early 2006 where British corporate pension funds were under pressure to derisk because their liabilities were real liabilities—that is, inflation-adjusted liabilities—and to do so by buying U.K. linkers.<sup>8</sup> These were fifty-year, inflation-adjusted bonds, and the forced buying by some funds drove the real yield on those bonds down to virtually zero, creating distortions in the British government bond market. It was clearly a very artificially sudden move, which then reversed soon after the plans did what they felt was the forced buying.

**Mark Anson:** I had been in the United Kingdom a month at the time that happened, and it was a feeding frenzy. The more you pushed the rate down, the more inflated your liabilities became, and the more you needed to buy those bonds. It was a vicious circle, a vicious spiral downward.

**Martin Leibowitz:** And something that made no sense at all. It was really counter-productive. That was an example of a lose-lose-lose situation. So the question we're trying to answer here is what is the appropriate rate to use to discount pension liabilities? My inclination would be to say that it certainly should be some kind of market rate, because we've seen what actuarial rates can do. What you want to do is use this rate to get a sense of reality, but don't take it as necessarily the ultimate call to action, because it's not necessarily what you're going to do. To the extent that a fund has liabilities that stretch out over a span of time and are not absolutely immediate, the fund is in a position to be able to take some degree of risk. To the extent that the fund has a sponsor with a willingness, let's say the extremis, to back up the plan, assuming that the prospect of returns can also benefit that sponsor so that there is a kind of return-risk sharing, that is, both return sharing and risk sharing, then the plan may be able to take some greater degree of risk. What you're really looking for is a gauge of the level of liabilities. You don't want to take it as gospel that automatically dictates what the asset structure should be. Unfortunately, that's where a lot of the disconnect seems to take place. You shouldn't use Treasury rates, not when they're at 2 percent, that's for sure. You certainly should use a market rate, but you shouldn't use a rate that is highly vulnerable to credit risk. The corporate construct may be a reasonable kind of compromise.

**Mark Anson:** I have one final question that I think it's important to ask. There's this phrase: "the new normal." PIMCO (Pacific Investment Management Company) has been great at marketing that they created that phrase and that they know how to manage to it. The "new normal" essentially means that we're in for a prolonged period of slower economic growth rates, real GDP (gross domestic product) growth, not only in the United States, but globally; that we're in for a prolonged period of low interest rates; and that double-digit equity market returns should no longer be expected, that we're instead more in the area of maybe 8–10 percent total returns. With that in mind, what key suggestions would you have for the chief investment officer of a pension plan or for individuals managing their own portfolios? Do you

in fact agree with the new normal? I guess that comes back to a broader question: What trends do you see in the market right now?

**Martin Leibowitz:** I think that the phrase "the new normal" is a very useful way of clarifying that the world going forward may well be significantly different from the experiences and the return patterns we've had in the past. That's clear on a lot of fronts. Emerging countries are growing in a way that is going to transform the globe—there's no two ways about that. In many ways, that's very positive. First, in humanitarian terms, that's unbelievably beneficial; the welfare of the world has increased enormously. Second, on an economic basis, we're creating huge new markets for all kinds of products and services, many of which will be serviced by the emerging markets themselves, which is as it should be. However, it also creates opportunities for developed countries to grow new markets for new products as well. So I think we are indeed going into a new world with different kinds of deflationary pressures in terms of sourcing cheaper labor abroad, but also more inflationary pressures in terms of demand for what may become scarce resources in this new evolution.

“ I think we are indeed going into a new world with different kinds of deflationary pressures in terms of sourcing cheaper labor abroad, but also more inflationary pressures in terms of demand for what may become scarce resources in this new evolution. ”

So, yes, I think "the new normal" phrase is a good one, the game is changed, and to quote Rogoff and Reinhart (2009)—although this is a dangerous phrase—this time is different, that is for real, and things will be different going forward. Having said that, Rogoff and Reinhart's particular version of the new normal is a fairly dismal view of the future. For better or worse, I think the future is a lot more complex and unknowable than the view that we are going into a dismal decade or two in this country. I'd like to be more hopeful than that. Economies and countries and people tend to have a lot more resilience than you can almost intellectualize. I forget who said it, but I think there is great wisdom in the phrase: It's easy to think of all the things that can go wrong and put yourself into a depressed state on that basis, but the fact of

the matter is that many of the things that go right are not so easily envisioned. They come out of some surprise or some subterranean or subliminal process. There's another great anecdote that I'll cite: A French count of the last century said that an individual who, as he contemplates a course of action, thinks what may be the outcome of each of the scenarios that could develop in response to his actions and then thinks for each such outcome what would be the subsequent actions he might take and what those outcomes might be—well, such an individual will make very few mistakes. But then the count goes on to add—and I'm sure it sounds even better in French—"But he will accomplish very little."

**Meir Statman:** That's a good point. As far as resilience, I think people underestimate their own resilience, let alone the resilience of the system altogether.

**Martin Leibowitz:** And I think that time is a healer in many ways. Just consider the statistic I saw that says the average car in the United States has about 120,000 miles on it, some big number.<sup>9</sup> I just can't believe that residual demand builds up over time and with family formation and so on. There is that kind of healing process from time alone as we consume some of the items we have, and the less elastic demand becomes in various areas. So I do believe in the new normal, but I don't believe we should be too convinced that we know what form it's going to take.

**Mark Anson:** I wish we could predict it. Unfortunately, my crystal ball doesn't come in high definition.


**Margaret Towle:** This has been a most useful discussion. Just one last question: Is there any area that we didn't cover or any trend or development that you think is especially significant that you'd like to comment on?

**Martin Leibowitz:** I think you touched on virtually all of the areas that are on peoples' minds today. There is one issue that I think that deserves more discussion than it gets, and that is the whole issue of inflation in retirement. We mentioned that briefly. Just one quick comment: Even a low level of inflation, even a new normal level of inflation, over the span of the twenty to thirty years that people today can have a reasonable expectation of spending in retirement, can be devastating for what looked like an otherwise nominally comfortable level of payoff. I think that issue is not very well reflected in financial discussions in this country.

**Margaret Towle:** I would agree completely. It's an area that really needs to be addressed explicitly. I think we have been lulled into a sense of comfort because of the most recent experience in terms of inflation.

**Martin Leibowitz:** That's right. Do you know the one retirement instrument that has been generally reasonably attuned to inflation in the past? It's Social Security. I'm not going to get into where that's going to go in the future, but it's been really beneficial for a lot of people in many regards, not the least of which is keeping up with inflation. Do you want to have fun? Try calculating, again assuming that all goes well, the value of that stream of payments in present value terms for a typical individual. That's a liability for the government,

but it's a huge asset for individuals. Anyway, I'd just like to close by saying that it's been a pleasure to talk to you all.

**Margaret Towle:** We really appreciate your taking the time, Dr. Leibowitz, to provide us with your insights and thoughts and give us an opportunity to discuss your contributions. We look forward to seeing this interview in the *Journal*. 

## Endnotes

- 1 In December 1994, Orange County, California, became the largest U.S. municipal entity to declare bankruptcy when the county lost approximately \$1.7 billion in one of its principal investment portfolios. (This record stood until November 2011, when Jefferson County, Alabama, declared bankruptcy on \$4 billion of debt.) Orange County's portfolio, which was intended to be conservatively invested in short-term vehicles as a way to manage the county's cash flows, had been invested in riskier securities such as reverse purchase agreements, collateralized mortgage obligations, and derivatives linked to the interest-rate yield curve. As the Federal Reserve began a series of interest rate increases in early 1994, the portfolio's valuation declined sharply, leading to the need to file for bankruptcy. In 1998, Orange County reached a settlement agreement with Merrill Lynch, the firm it held most responsible for steering the portfolio to riskier investments, as well as with other brokerage, law, and accountant firms.
- 2 In October 2011, the U.S. Department of Justice and the New York State attorney general filed civil lawsuits against the Bank of New York Mellon alleging foreign currency fraud over the past decade. The suits hold that the bank allegedly manipulated prices on foreign currency transactions on behalf of pension fund clients to the benefit of the bank. The Bank of New York has defended itself against the charges, maintaining that the fraud charges are false and that the accusations were based on flawed analysis of its role as a principal in the foreign exchange market. New York's action followed similar investigations by authorities in California, Florida, Massachusetts, North Carolina, Ohio, and Virginia, which are examining the bank's foreign exchange practices that may have affected their pension and other investment funds.
- 3 Mark Anson joined the California Public Employees' Retirement System (CalPERS) as senior investment officer in 1999 and served as chief investment officer from 2001 to 2005. He also was chief executive officer of Hermes Pensions Management and the BT (British Telecom) pension scheme from 2005 to 2007.
- 4 A "waterfall" refers to the sequential structure of monthly payments on a pool of mortgage-backed securities. On a monthly basis, the principal and interest received from all of the pooled loans is paid to the holders of bonds issued by the trust that maintains the pooled mortgage-backed securities, starting with those investors holding the most highly rated bonds. Then payments are made to the holders of the next highest rated bonds, and so forth.
- 5 Ginnie Maes (GNMA, or Government National Mortgage Association) are mortgage-backed securities issued by government-approved issuers that participate in the Ginnie Mae program. These securities are guaranteed by the Government National Mortgage Association, a wholly owned government corporation within the U.S. Department of Housing and Urban Development.

- 6 Lewis S. Ranieri (1947–) helped to pioneer the areas of securitization and mortgage-backed securities while working on the mortgage trading desk at Salomon Brothers in the late 1970s. Ranieri also worked to develop the capital markets as a source of funds for housing and commercial real estate and led efforts to enact federal legislation.
- 7 Laurence D. Fink (1952–), currently the chairman and chief executive officer of BlackRock, was instrumental in the creation and development of the U.S. mortgage-backed securities market while working at FirstBoston in the 1970s.
- 8 Inflation-indexed bonds, also known as inflation-linked bonds or linkers, are securities in which the principal is indexed to inflation, with the goal of minimizing the inflation risk of the credits.
- 9 According to a report from the U.S. Department of Transportation, the average life span of a vehicle in the United States is twelve years, or about 128,500 miles (MSN Money, March 22, 2010).

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