ROUNDTABLE

Q Group Panel Discussion: Looking to the Future

Martin Leibowitz, Andrew W. Lo, Robert C. Merton, Stephen A. Ross, and Jeremy Siegel

Moderator Martin Leibowitz asked a panel of industry experts—Andrew W. Lo, Robert C. Merton, Stephen A. Ross, and Jeremy Siegel—what they saw as the most important issues in finance, especially as those issues relate to practitioners. Drawing on their vast knowledge, these panelists addressed topics such as regulation, technology, and financing society's challenges; opacity and trust; the social value of finance; and future expected returns.

Andrew W. Lo: Regulation, Technology, and Financing Society's Challenges

Over the course of the next decade or two, I see three tremendous challenges and opportunities in finance. The first challenge is the regulatory environment in which we operate, as pointed out by Rodgin Cohen, a highly respected securities lawyer, at a recent conference. He said that after having been in the business for almost half a century, he has never seen the kind of animosity and frictions between industry and regulators as he sees today in the financial industry. This tension is a problem because finance is a means to all sorts of important ends.

We seem to be cutting off our noses to spite our faces over the past several years. Financial economists bear some responsibility in that we need to be more involved with regulatory processes to make sure the very best financial thinking is reflected in regulations. We could all contribute to this challenge in one form or another.

The second challenge and opportunity is to think about how technological advances in other fields, particularly computer science, can be used in finance. We tend to be a somewhat closed group, which perhaps is true for all fields. We have our favorite perspectives

(Photo courtesy of the Q Group.)

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and paradigms, but one of the things that is changing rapidly, as many of you know, is data science.

A genuine revolution is taking place in the use of computational techniques for analyzing things that we traditionally think of as being outside the domain of computer science, and we now have many interesting synergies, with robo-advising being a case in point.

A tremendous amount of data, and therefore wisdom, is buried in these datasets, and we have to think about how to mine them, which may mean putting aside our paradigms and focusing instead on the underlying structures in the data that only these computational methods can give us.

The last challenge relates to how far we have progressed as a species. In 1900, about a billion and a half people were living on the planet. Now, the world has approximately 7 billion people. From an evolutionary timescale, in the blink of an eye, we have more than quadrupled the number of *Homo sapiens* running around. Most of these people are born without wealth, savings, or income, and they need some kind of financing to live out their lives.

This rapid change suggests that financial structures will be much more complex, which means that we will have to think about more sophisticated ways of dealing with some of society's biggest challenges. Examples of these challenges might include cancer and other diseases, climate change, and the energy problem. All of these issues require some kind of financing, and it is both a challenge and an opportunity to develop the kind of finance of the future to deal with these issues.

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Robert C. Merton: Opacity and Trust

The following comments are likely to be quite significant, either in practice or in academic research. The first issue has to do with the notion of inherent opacity and trust. What do I mean by inherent opacity? It is something we cannot make transparent. And if something is inherently opaque, then the only mechanism that works is trust.

Usually, we think of trust as in trustworthy. But trust actually has two components. The first component is trustworthy, in which we want the individual to do the right thing and we deal with the agency problem the best we can. The second component is competence; we want the individual to be competent. A well-meaning fool can do as much damage as an evil-meaning trustee.

Financial services, like financial advice, are inherently opaque. If you agree with this premise, then trust is, therefore, the only mechanism that provides an answer. And with this line of thinking, you obtain insights into what we can and cannot do and who can do what.

We see many references these days to roboservices. The news from Silicon Valley says roboservices are going to come and "eat all the banks' lunches." Certainly, in some areas, that will prove to be true, especially processing activities, such as clearing and settling. Having a phone that can get data to you anywhere, in order to think quicker in analyzing the data—that works. But replacing advice may not be as successful—or at least not without coupling it with something that is not from Silicon Valley.

Think of medicine. Suppose you need surgery. The process can be made more transparent by showing you all of the scientific studies, a list of all the tools to be used, and the step-by-step surgical procedure. Is that transparency? No. You cannot judge how the surgery will come out. Surgery is inherently opaque, and so is financial advice. Those engaged in providing advice who are really good at it will find themselves leveraged as opposed to facing stiffer competition.

The next issue is that goal-based investing will be very important in the next decade. For example, if you have a goal of funding retirement or a benefit plan, you set the goal and manage it through a process called LDI (liability-driven investing). If you follow a liability-driven goal, then regardless of whether your Sharpe ratio exceeds those of your competitors, you can outperform competitors who lose their focus on the goal.

It is not that managers are not good at getting high Sharpe ratios. Rather, they are too good at it because there is so much money and so much competition. It may be easy for a manager to show that competitors do not have as good a Sharpe ratio, but in the future, we are likely to have a more important focus. We will be driven to the idea of greater service by knowing the client better, understanding what the client really needs, getting the client to identify what the actual goal is, and then designing dynamic strategies that achieve that goal.

The third issue is globalization. Think of the applied area of designing retirement solutions. These solutions should not be designed, for

example, for Western or Asian cultures but, rather, designed to work across geopolitical borders. This approach is possible if that design is based on solid finance principles because those principles are as reliable as gravity. Finance principles apply everywhere, independently of the culture. This does not mean that culture does not matter. But if you design to principles, the cultural aspects will fall into place.

The fourth issue is the idea of replacing dynamic strategies with new securities. We know the replicating principle for derivatives: We can replicate a derivative with active trading. But we can also run the principle in reverse: We can replicate a dynamic strategy with a security. We are likely to see more and more of this type of replication.

Stephen A. Ross: Social Value of Finance

We need to make a social case for the value of finance. We must realize the bad state we are in because politicians, regulators, and the academic community do not see the need for a case to be made.

Before 2008, a faculty member at MIT might have said, "What are you people doing over there in finance? You are taking these really wonderful kids we have in physics and engineering, and they all want to leave and go into finance." They were saying that somehow finance is, if not socially irresponsible, at least nowhere near as valuable as what they were teaching them in other departments.

After 2008, it became impossible to make the case that finance is as important as other disciplines. People looked at those of us in finance as if we were the evil folks who caused all of the problems. Most people never learned the lesson of 2008, which was not how bad a situation various institutions found themselves in but, surprisingly, how few institutions really found themselves in that situation, and how much was really solved with finance.

Securitization did what it was supposed to do. It spread the risk. When you spread the risk, it does not go away and some people ended up bearing it. Some areas had too much risk because people made foolish decisions. An efficient market may protect the sheep from the wolves, but nothing protects the sheep from themselves.

We have to make the social defense for finance, and in doing so, we have to separate it from the general argument for the value of economics. To some extent, we are tainted by macroeconomics. Macroeconomic theory is now a place people turn to when they want to figure out what to do about monetary policy, and it is questionable whether we really know what to do about monetary policy.

We should be pushing the variety of ways in which the structures, theories, and empirics of finance are and can be used to better this world. Perhaps then we might see governments turn away from the current animosity they have for the financial world. We have not made the case strongly enough, and if we do not, we and the world will suffer.

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— Ross

Jeremy Siegel: Future Expected Returns

What kind of returns are we going to get in the next 10 years? Are we in a new world of returns going forward? One of the stylized facts that we all think about is the price/earnings ratio (P/E) of the market. For the long run, people throw out the number 15, which is not really a bad estimate.

Robert Shiller, of course, started this research. For stocks, 6.7% is the annualized long-run, real return, dating from 1926 to the present. It is not a coincidence that 1/15 is 6.7%. Stocks are real assets, so the earnings yield, which is the reciprocal of the P/E, should be 6.7%. It is comforting that there is some economics related to what we have seen in the equity market.

Where do we stand right now? One would think it would be simple to talk about what P/Es are today, but it is not, mainly because we have several different types of earnings definitions. As an example, these differing definitions tended to diverge by an extremely large amount last year, primarily because of significant write-downs in the energy industry.

The S&P 500 Index just crossed 2,000. S&P 500 operating earnings, which are very conservative but not as conservative as GAAP earnings, came in last year at $100. That is a P/E of 20, which is quite a bit higher than the long-run average.

Standard & Poor's thinks operating earnings will go to $110 this year. I/B/E/S already said operating earnings were $110 last year. Taking an earnings yield from a P/E of 18–20 gives a 5.0% to 5.5% real return going forward, which is about a point and a half under the long-run average.

It is critical to compare stocks with bonds. Ten-year maturity US Treasury inflation-protected securities (TIPS) were first floated at 3.7% in 1997. They went to almost 4.5% in 2000. They yield about zero now. Very few economists would have ever expected this development. The world's largest asset class, fixed income, has actually experienced a far more serious drop in yields than equities have.

Going back to 1802, the long-run real return on bonds is 3.5%. It has been lower over the more recent period, around 2.0% to 2.5%, which gives a historical equity premium of between 3.0% and 3.5%. It is interesting that 3.0% to 3.5% is the same number that Dimson, Marsh, and Staunton determined in their book, where they originally reviewed 16 countries and the world since 1900.[1]

The equity premium is above that now. A conservative P/E of 20 translates into a 5.0% real return. We are at zero on 10-year TIPS. The 30-year TIPS are a little bit higher, but there is some indexing risk that the government could shift over the next 30 years. Depending on how much inflation there actually is, we are at about a 5.0% equity premium now. So, either stocks are undervalued relative to bonds, or you can say that stocks are slightly overvalued but bonds are very much overvalued according to historical means.

Two possible reasons may explain why the real return is going to stay low. One is increased risk aversion. Older investors, who tend to have a high risk aversion, push down the safe rates. Bonds have also become good negative-beta assets for short-term investors. When the stock market drops 700 points, T-bonds usually go up 2.0% or 3.0%, which is comforting when diversifying a portfolio. By the way, the bond market did not have these negative betas in the late 1960s through the 1980s when inflation was a problem. If inflation gets bad once again, one could conjecture whether those negative betas on bonds will actually turn the other way.

The second reason why returns may stay low relates to slow growth. According to the US Congressional Budget Office (CBO), we have experienced 3.5% real GDP growth in the post-war period. The CBO says that growth will be 2.0% over the next 10 years. Apparently, labor market growth in the United States is at the slowest point in its 240-year history. We also have had a productivity collapse over the past five years. All of this combines to tremendously slow down real growth, and real interest rates are related to real growth.

Finally, we should probably expect future returns to be lower on stocks and bonds and probably much lower on bonds than on stocks. Stocks do not appear to be at risk for any deep decline, looking at the yield structure going forward.

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Question and Answer Session

Moderator/Leibowitz: How do demographic trends, lower birthrates, and higher life expectancies throughout the developed world change finance as we know it?

Merton: We have two significant changes around the world. The first one is that the population is older than it used to be. It is much older in the United States but is growing even older and faster in China and in South Korea.

The second change is that people are living longer, which is a good thing and not a problem. But like many good things, it has a dysfunctional aspect, which is, how are we going to fund it?

Retirement has three main sources of funding. Is government the answer? Unlikely. Not too many people are thinking social security will be expanded to higher benefits.

Employer plans? We know that the benefits have gotten smaller. And there has been an exodus, at least in the corporate sector, and eventually probably in the public sector, out of defined benefit (DB) plans because they were too expensive or too risky—that is the same statement—for what they were providing. Employers did not get out of DB to have more expensive defined contribution (DC) plans. So, the amount that people will get from employer plans is going to be less.

The only source left is personal saving. For working, middle-class people, personal saving is, for the most part, their house—if we exclude their retirement accounts.

So, if you are going to live longer and if you want to work the same number of years as your parents did, you have to save more to pay for that longer life and thus you have to cut your standard of living. If you want to enjoy the same standard of living as your parents did, you have to work longer. Everything in between is feasible. What is not feasible is to live longer and at the quality level of your parents and work for the same number of years.

That trade-off is at the core of what we need to address. Getting higher returns is not in the cards. You cannot manufacture another 200 bps unless you take more risk. If you take more risk, then you have to have a policy if the risk is realized.

What you can do is improve the benefits you get from the assets you have. For working and middle-class people, two things can do that. One is the annuity, because you give up your money when you no longer need it. In return, you are getting money when you do need it, which is when you are still here—a pretty good trade in my view.

The second thing that people can tap to extract more retirement benefits from the assets they have is the reverse mortgage. The Korean name, home pension, is much more descriptive. Basically, it does

the same thing as an annuity. It transfers value back to retirees when they need it.

Remember that we cannot rely on the government or on the expansion of DB plans, so the only way to fund a longer retirement is through higher personal saving. We are not going to transform personal saving sufficiently without legislation, such as has been done in Australia and Chile. The beauty of the reverse mortgage is that it uses the asset that people already have in order to save and then transforms it into more benefits. It is not magic, but it is very, very important.

Moderator/Leibowitz: Of course, there is the risk of people monetizing the value of their home as they need it. We cannot assume the valuation of the house will continue to rise. It was a problem in recent times.

Merton: That is part of why the name "reverse mortgage" is so unfortunate. It is not a loan in the usual sense. You never pay it back. The way to think about it is to imagine you have no beneficiary. The deal is you do not pay anything back—either interest or principal—until you leave the house. Usually the expression of "leaving the house" is to go somewhere where you do not need either money or the house.

That scenario is very different from the one in which people take a home equity loan, where if the bank decides it does not like that business, it calls the loan. The retiree would then have to repay both the principal amount and any cumulative interest, with full recourse. Part of the misconception about this product is because of its name.

Moderator/Leibowitz: You raise a very valuable point: The personal portfolio of most people is dominated by things such as homes, the present value of their social security, their health care benefits, and their human capital. All of these things are difficult to analyze. Are we missing something by not trying to put these items into the pot and seeing what the implications are for the areas where we do have choices?

Lo: Absolutely. We are missing out on the $64 trillion question, which is how to integrate financial decision making across all of the different decisions that are relevant for individuals. Obviously, from an academic perspective, we tend to focus on models and securities and figuring out optimal portfolio policies under various circumstances, but this question really goes to the difference between products and solutions when you think about providing value for individuals.

Perhaps the best way to think about this situation is the comparison of the iPhone with the telephone before we realized we needed an iPhone. The reason an iPhone is so useful is not because it is incredibly sophisticated—it is useful because it is incredibly simple. Investors are not looking for products; they are looking for solutions. Few people in finance think in those terms, at least not yet, and it will be a sign of maturity when we start developing solutions.

A case in point is medicine. We are now at the threshold of developing breakthrough therapies that can actually cure various human diseases, and these therapies are very expensive. One example is a gene therapy that literally manipulates the genes in your body to change your genetic structure. It costs $1 million per patient.

How are we going to pay for such treatments? That is the challenge of integrating all of these expenditures and, ultimately, designing the proper financing for them. This is the kind of solution that investors really want.

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>
> *— Lo*

Moderator/Leibowitz: We are often viewed as being aligned with Wall Street and the banking industry and thus the source of the problems rather than the solution. In terms of the social dialogue, this has generated a lot of ire against our field. In some ways, our financial evolution has enabled us to facilitate all kinds of things that would not have otherwise happened. So, how can we turn this around? How can we get the expression "financial engineering" to not have a bad ring to it?

Ross: We cannot do anything in the short run about that perception. It is going to be a long-run process. The question is, why do we want to turn it around? The answer is, or should be, we want to turn it around because if we have a credible voice in policy circles, then we will be able to apply finance and do some useful things with it. Without that, we will not be listened to or taken seriously. More importantly, others will think that everything we say has an ulterior motive behind it and that we are not talking for the social good.

This perception will be very hard to change. People want solutions, not products. In addition to offering solutions to people, we also must be careful to not oversell ourselves.

The truth of the matter is that it is easier to manage a $100 billion portfolio than it is to manage an individual person's portfolio. We are very comfortable saying, "I want to be on a mean–variance frontier" or "I want to be on some efficient frontier." But we are not comfortable with the decisions of an individual investor.

A friend of mine is an expert in these sorts of things, and he stood up at a symposium and said, "With all these economists in the room, I will bet that not one of you knows what the right time is to apply for social security." He was right on target. No one really knew because the rules are so complex. The environment in which an individual operates is very complicated, and we have only begun to scratch the surface.

If you are talking about issues such as behavioral finance, you talk about factors that affect individuals, and you do have to bring some of those ideas in when you are talking about doing what is good for a person. But in order to not oversell what we are able to do, we have to do some more basic research on what are the best solutions for some of these people.

Moderator/Leibowitz: Let us talk about the issue of robo-advising. Is this really a reasonable way to help people with lower assets who cannot afford the benefits of a financial adviser?

Lo: A lot of progress, particularly in the area of artificial intelligence, has been made that can be very useful for developing better robo-advising algorithms, but the problem is not artificial intelligence—it is "artificial stupidity." We need algorithms for capturing the mistakes and other human predilections that cause the most mischief for people's portfolios, and then we need to design products around them.

We are getting there, but it will probably be another 10 to 20 years before we have robo-advisers that can actually perform the functions that we do, and the functions that people are looking for.

Merton: We have to be careful to distinguish between a good idea, product, or solution and its execution. Robo-advisers can be terrible just as ordinary advisers can be terrible. We have to distinguish between a terrible or costly version of something that is good and something that inherently is not a good idea.

If I may go back to the topic of trust, recall that creating trust entails the aspects of trustworthiness and competence. It is not a question of the mechanics as to how much is done by a computer and how much is done by a human.

We use human beings in structured situations in an odd manner. A model is an approximation. Therefore, there are conditions under which the model does not work, which is when something, usually a human being, has to intervene and make a decision in a nonstructured situation—turn the model off or keep with the model. But you cannot anticipate what the decision will be because otherwise it would be part of the model. We all know that finance models have their limitations and that a well-trained person who understands the limitations of a particular model is incredibly valuable.

We are starting to see change. For example, there is a huge trend into index funds because of their lower cost. Why? Because an index fund is absolutely mechanical. It is transparent, and if you have transparency, you do not need trust. Since the 2008–09 crisis, $500 billion went out of equity funds. Why? Because in that crisis, trust was lost. People had to do something, and something mechanical and fixed did not require having trust.

The problem is that even with the best of conceivable robo- or financial-advisory systems, you will still have blowups. It is not going to be sufficient to have the best system run by the best pilot. The system is still going to be vulnerable, and it is not going to be easily understood or accepted comfortably by those who are in the passenger seats.

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— Merton

Lo: The fact is that investors have a hard time thinking about investing when they are losing extreme amounts of money over short periods of time.

The technical term is that they are "freaking out." When people freak out, it is hard for them to remember that they should think about stocks for the long run. Between the fourth quarter of 2008 and the first quarter of 2009, the maximum drawdown in the S&P 500 was 51%. We expect retail investors to sit back and say, "Yeah, no problem; that is just fine." Of course, there will be a fraction of them who will say, "I cannot take this anymore—after a 20% or 30% or 40% loss, I am out."

If we want to prevent that kind of behavior from happening, we have to change our products so that people do not experience those kinds of rollercoaster rides.

Moderator/Leibowitz: There is the issue of dealing with volatility, but there is also the issue of dealing with the prospect that a rebound may not happen or may be long delayed.

Lo: If you simulate strategies in which you pull out your money after a 20% or 30% loss, it turns out that pulling out your money is not the most damaging part of that reaction. The real damage comes from waiting too long to get back in. Following a simple rule such as reducing my equity exposure by half any time the S&P drops by a cumulative amount of 30% or more over a six-week period then waiting a fixed period of

time, say, 7 or even 18 months, and getting back into equities 100% actually does better than many other rules of thumb.

Moderator/Leibowitz: Suppose we have two types of investors, one who is going into a retirement home in five years, so basically has to consider many risks, and another one who has a very long-term horizon and can tolerate short-term volatility. What should these investors do?

Siegel: With a five-year horizon, there is a lot of variance in the market. That risk can be measured somewhat by the P/E. The risk is much higher if you start the five-year period with a high P/E than if you start out at or below average. Even with today's terribly low interest rates, if you must have safety over the next five years, it would be risky to put the money in stocks. But as stated earlier, when you look long term, the premium of stocks over bonds is very, very high. At this time, however, we have to expect lower returns on both asset classes going forward.

Moderator/Leibowitz: Should long-term investors hold any bonds?

Siegel: Only junk bonds, which are kind of quasi-stocks. Whether or not the investor holds junk bonds lets you know something about his or her risk tolerance. If you feel good by having your T-bonds cushion the loss on equities when the stock market drops 700 points, then you are paying for an expensive insurance policy, but that may be your risk preference.

At today's rates, if one is limited to stocks or bonds, preferences would point overwhelmingly to stocks.

Moderator/Leibowitz: It is interesting to recall that before 1974, it was not uncommon for endowment funds to be 80% in stocks. Their rationale was because they were long-term investments, the greatest fear was inflation and they felt that stocks would be a long-term inflation hedge.

Siegel: You can use TIPS. But with current TIPS returns, you have a slightly different perspective.

Ross: I recall a debate at TIAA-CREF about whether it was the money of a participant or the money of the fund that owns the asset. We are now in a world where individuals are making all of their own investment decisions, so we have a large percentage of people who aspire to be day traders. It is difficult to imagine anything that is worse for your financial health than being a day trader.

We can present this advice as reflecting the best solutions in the world, but the reality is that people are not going to take it. One of the great questions that arose at TIAA-CREF when a money market fund was added to the mix was whether people would allocate properly among equities, TIAA, and a money market fund. People did exactly what we thought they would do: A large percentage decided, "I'm going to put a third in each."

We have to bridge the gap between our good advice, on one end, and whether we might have some disputes about what our advice would be on the other end. Once we get to good advice, we need to get a good solution.

Moderator/Leibowitz: On that TIAA-CREF story, we did learn something. We found that a large percentage of the younger professors were investing in cash. When we talked to them, we learned that they knew this was tax-deferred money for their retirement. They also knew they had few other resources and that, in a pinch, they could use the cash for emergencies. Their allocation was not nearly as irrational as it seemed.

Siegel: That TIAA-CREF example reinforces the need for goal- or liability-driven investing. Forget about strategies. What is the risk-free rate for investors? You cannot know what risk is until you know the time frame of the investors.

Regarding the TIAA-CREF example, it is important to decide whether the pot is a savings account or a retirement account. It is hard to have two different goals because they conflict. One calls for having principal stability, which is a Treasury bill. The other calls for standard-of-living and income stability, which is a long-term bond. You cannot have both.

If you get clients to focus on rates of return and asset mixes, it is likely to be the wrong approach. You should get people to determine their goals instead of asking them how much they want to put in real estate.

Everyone in this room knows what people want for retirement. It is an income. Social security gives an income. DB plans give an income. In DC plans, for some reason, we do not show people the funded ratio. We are showing them the wrong thing, and then we are saying they are making the wrong decisions. We are telling people that risk is the value of their fund, when risk is really how much income they can sustain for retirement. We must get that straight, and by "we" I am including the US Department of Labor and the SEC so that they do not force us to give people the wrong numbers.

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— Siegel

Lo: One proposal is that we help individual investors by offering them some kind of variance-stabilized investment in equities. Equities in the long run make sense. But you have to make sure that the short run does not kill you first. Investors are willing to take risk, but they want to know that the risk that they signed up for is the risk that they are getting.

A simple strategy would be to use futures overlays on investment in an S&P 500 index fund. As the volatility investment piece spikes up, start putting more money into cash. As the volatility comes back down, put that money back into equities. Do this in an automatic fashion to stabilize the volatility throughout these kinds of rollercoaster rides. This simple change can make these products a lot more palatable to a broad set of investors.

Moderator/Leibowitz: Some people say that such a strategy sounds a bit like portfolio insurance.

Lo: Actually, it is related to portfolio insurance except that it works a lot better. You are not insuring anything but rather managing risk. Daily risk management is a reality now. We can actually do that because we have liquid futures markets, such as the S&P 500 futures. If we are trading that dynamically, we can smooth out a lot of volatility.

Siegel: If you have options, yes.

Moderator/Leibowitz: One way or another, if that becomes too much of a common strategy, it can be destabilizing.

Merton: And who is on the other side of that trade? If there is nobody on the other side of the trade, that is a problem. But I would argue that on the other side of the trade are the folks who actually can and want to take the risk, and who are willing to provide that kind of dynamic hedging.

Moderator/Leibowitz: Of course, people who take that kind of risk are also trying to lay it off.

Merton: Right, but that is why we have the options market. The options market now is much larger than it was before. We have the capacity to be able to do that.

Ross: The options market is really surprisingly small. In fixed income, it is enormous. But in equities, it is actually quite small. You have about $20 trillion in options now against the equity. That is not that big.

Lo: It is a little misleading because you have to look at it based on volatility. The equity markets are a lot more volatile, so $20 trillion in options in equities is a lot more than $400 trillion in fixed income given the low volatility of interest rates. You cannot just look at the notional—you have to look at risk-bearing capacity. From the kind of stabilizing strategies being proposed, the options and futures market will be more than large enough to handle the overlays you would need.

Ross: It can be read in the opposite way because the higher volatility in the equity markets is an argument for why you need more depth in that market to really cover it.

Moderator/Leibowitz: Let us change the subject and talk about target date funds.

Siegel: If a target date fund is a fund that is designed to hit a particular objective, or to get as close as you can to a particular objective, it would save investors the trouble of trying to figure how to do it. I am a big fan of that, but the current incarnations of target date funds do not do that at all. They are based on a variety of different myths about how much you should have in equity and fixed income as you get closer to some projected horizon for the individual.

One other point is that target date funds are completely divorced from life expectancy risk. How can you possibly run funds that supposedly benefit the individual without providing a complete solution that covers both insurance risk and inflation issues? What kind of annuity are you going to have at the end?

Moderator/Leibowitz: We are talking about trying to get an integrated product that can take people, with the risk that they can bear over time, toward a situation where they get a proper, real annuity.

Ross: There is a place for a properly designed product. But the industry has yet to design that product.

Merton: One of the needs recognized during the financial crisis was to give people what they think they are getting and let them know the risk they are taking and not taking. Ask people who are fairly knowledgeable, "What does a 2045 fund mean?" Most people think that it has some kind of glide path that adjusts over time and will glide you to a good place when you retire in 2045. That is not the way target date funds are designed. If you read the prospectuses, they do not even say they do that. They simply say, "We have a process. For five years, you have one base; for the next five years, you have another base." They do not even dissolve in 2045. They just stop changing the mix in 2045, and that is it.

If you look at the history of target date funds, it revolved around what could be devised that would not make us fiduciaries. These products look like clients are being advised because the portfolio changes over time. How would you like to hear this directly? "I have something to get you to 2045. By the way, it has been legally determined that this is not advice, or not a fiduciary, but I am going to make it sound like it is advice."

The second thing is, we all should be very happy that they do not work well, because if they did, we could solve the complex problem of inter-temporal

optimization for people where they would put money in every month for 10, 20, 30, 40 years and out the other end would come a good retirement. If such a product existed, there would be many fewer opportunities for those in our industry.

Target date funds suggest we can solve the problem with a simple rule that is based only on age and not even on gender or on how much people make. The worst thing we can do is promise something that we really cannot deliver or make people think it is simple and we have an answer when we do not. What is worse than being uninsured when you thought that you were insured?

In 2016, it is feasible to deliver customized products targeted to goals that take account of individual characteristics, delivering it at low prices consistently on a scalable basis to millions of people. For those who think that "on average" is good enough, I will bet there are people in this room with a size 6 shoe and others with a size 12 shoe. How about you turn all your shoes in, and when you leave, you all get a size 9?

In some ways, financial techniques have enabled people to do more things that they wanted to do, faster and earlier. That sounds like a good thing, and it has many good qualities, but it can also lead to misuse, to overshoots, to bubbles, and to crisis events because we made things too easy to happen too quickly.

It is feasible to deliver customized products targeted to goals that take account of individual characteristics, delivering it at low prices.

— Merton

Lo: Any kind of technology can be abused as well as used. What we saw in the financial crisis was not that securitization did not work—it actually worked way too well. It pumped tremendous amounts of money over a short period of time into US residential real estate; much too much money.

The same is true with all powerful technologies. But isn't that the nature of progress though—two steps forward, one step back? We have to recognize there will be frailties, fragilities, and unintended consequences of these technologies, and the answer is not to forswear them but to actually go back to the drawing board when necessary and develop better technologies.

Moderator/Leibowitz: How can we try to get finance appreciated for the good it does and put its overall role into the proper context?

Lo: Recently, I compared our field with some others—psychology, biology, and so on. Take a look at the website of the American Psychological Association. It is the largest organization of psychologists, both academic as well as practitioners. Read the mission statement. It is a relatively short paragraph that emphasizes the application of psychological knowledge to benefit society and improve people's lives. It is a very heartwarming and broadly encompassing mission statement.

If you read the mission statements for the American Economic Association and the American Finance Association, you will see a huge contrast. Nothing is mentioned about making society better or using economics or finance for the greater good. It is incredibly narrow and, as you might expect, focused just on what we do, which is to try to understand the allocation for scarce resources. I think that part of the issue is that we have been so focused on our field as a science that we sometimes forget about practice and the kind of impact—good and bad—that we can have. Ultimately, we have to spend more time thinking about the consequences of what we do.

Moderator/Leibowitz: Let me end on the following note. In some ways, what we are saying is that finance may not be a zero sum game. To the extent we can make finance more of a positive sum game, facilitating things on a net–net basis even though there are issues that we have to try to deal with and resolve, we will be doing as much societal good as we can, morally and ethically. Hopefully, it will also lead to a better place for our field in the future.

To the extent we can make finance more of a positive sum game, we will be doing as much societal good as we can, morally and ethically.

— Leibowitz

Notes

1. Elroy Dimson, Paul Marsh, and Mike Staunton, *Triumph of the Optimists: 101 Years of Global Investment Returns* (Princeton, NJ: Princeton University Press, 2002).