Robert Merton on Regulating Derivatives

By Dan Richards
January 26, 2010

Robert Merton is a professor of finance at the Harvard Business School and the 1997 winner of the Nobel Prize in economics for his work on pricing models for options and derivatives. Professor Merton is past President of the American Finance Association, a member of the National Academy of Sciences, and a fellow of the American Academy of Arts and Sciences.

Dan Richards interviewed Professor Merton on January 4 at the annual meeting of the American Economic Association in Atlanta, GA. This interview is one of a series that Dan conducted at that conference, and we will provide links to videos of his other interviews. Dan is president of Toronto-based Strategic Imperatives.

You received your Nobel Prize for your work in the field of derivatives. This is a very a hot topic these days. Let's begin by defining exactly what we mean by derivatives.

> The name "derivative" is almost self-explanatory. A derivative security is a financial contract that derives its value and characteristics from the value or price of an underlying security. For example, a call option on a stock is a derivative, where you have the right to buy a stock at a given price. It derives its value from the underlying stock.
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> However, there are many instruments and securities that derive their value at some level from something else, which are not very useful to refer to as derivatives. The way I like to think of it is that derivatives are financial instruments whose role is to allow efficient and effective transfer of risk, rather than transfer of value. These tools vary and include futures, swaps and options.
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> They are all designed to allow the transfer of risk more efficiently without the transfer of value. That's what they are principally used for.
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> What many people call derivatives are structured products, many of which are opaque – including structured mortgage products. If you call those derivatives, then you have to call the debt and shares of every company a derivative. That is the sense in which it could become absurd.

How far back do derivatives go, as we understand them today?

It depends on how you want to measure that. Some people say biblical times. You can clearly document their use in the 17th-century Holland, when Amsterdam was the center of the Western financial world. Derivatives were front-and-center on various stock exchanges. There was much more trading and volume in derivatives than in the financial stocks themselves.

When you read about those times – and I don't know whether this is a good thing or a depressing thing – the same issues as what we are talking about today were talked about then: volatility, front-running and too much trading. They really do go back a long, long time.

In more modern times, we have had futures markets and options market, but the big change in recent times was in the early 1970s, when there was an explosion of development in the derivatives market, particularly in the financial space.

Derivatives today have a bit of a tarnished reputation. No less than Warren Buffett has called them "financial weapons of mass destruction." Why do they have such a bad name associated with them?

The answer can take several different forms. Of course, there have been a number of cases of the misuse of derivatives contracts by those who didn't really fully understand them, and that's been documented. There have also been misuses by fools and knaves, who were plentiful.

It also can stem from things you are not familiar with. We tend to attach a greater fear of risk to something we don't understand, even if it brings exactly the same amount of risk as something that we are familiar with.

It is also the case that, at some level, everything involves derivatives. It's almost reaching the point where you can say "derivatives are involved" and have it apply to any situation.

Derivatives trade either on an open exchange (such as the futures market or options market) or over-the-counter, where they are typically traded by banks or large financial institutions. The facts are that throughout this crisis, all traded financial futures markets functioned flawlessly. They functioned better than the cash markets. In many cases, they were the only markets that were functioning for transferring risk.

If you look at the over-the-counter markets, which have been the ones that had many of the issues, the estimate (although somewhat meaningless) is that the total notional amount of derivatives is between $600 and $700 trillion – a massive number. Of those, a vast majority were interest rate swaps, which have been used for more than a quarter of a century by banks and others to hedge their interest rate risk. Those have functioned; I know of no cases where interest rates swaps have raised problems.

If you look at the derivatives with over-the-counter equities, currencies or commodities, there have been no problems. When I say “no problems,” I could go further and say that they have been instrumental in allowing the system to continue to function during these very difficult and stressful times.

Where the problems occurred was in one set of derivatives called credit default swaps, which transfer the risk of credit. They were one of the biggest issues that have been raised. They are also very large and the newest type of derivative. There were issues certainly, such as with AIG, which was operating credit default swaps. But the swaps themselves, as far as I know, did not have major problems of default. The companies that furnished them and were using them had trouble, and we need to make that distinction.

It is important to understand that there is no financial institution in the world, including all the central banks, that can function without using the mathematical computer models of modern finance or without using derivatives. So the issue is not that these are some side items that are new and fancy and no one understands them and maybe we ought to get rid of them or minimize them. That is not reality.

The reality is that they are an integral and fundamental part of our system. What we need to address is what are the issues, what are the problems, and how can we assure ourselves that we will not have those problems repeat themselves.

As is understandable in these types of crises, everyone is both very upset and does not understand everything that is going on, and everyone has found it very costly. And they want an answer. It would be nice to be able to give one, but in many cases the facts they are working with are not even correct.

There are two somewhat related criticisms. One of them is the issue of transparency and the level of risk for an institution, where people at senior levels of management did not fully understand the risks of derivatives. Secondly, derivatives make it possible to have a degree of leverage that can cause problems. Are those accurate and fair criticisms?

They would be fair comments, but as you as intimated by your question, these are tools. They are not tools that, for the most part, are used by ordinary individual investors. The people who are using these are supposed to be professionals, who are highly qualified and this is what they do in their business. As I mentioned to you, central banks use them.

We shouldn't have a picture that this is about poor people who don't know what they are doing.

That said, there has been misuse. In fact, in regard to the question about senior management, I fully agree that going forward senior managers, boards of financial firms and regulatory overseers have to have financial knowledge of engineering, derivatives and modern technology. We have to have them knowledgeable enough to be able to properly manage and oversee these instruments. I think there have been many instances where that knowledge was not present.

This is not a case of getting rid of tools that are not essential. You need to make changes. It's a little like the head of the Food and Drug Administration or the National Institute of Health saying, "I don't understand nanotechnology, and therefore we are not going to allow nanotechnology to be used in medicine." Any reasonable person would look askance at that and say that's backwards. Nanotechnology may not be a good thing for medicine, but the criteria shouldn't be that because the head of the FDA doesn't understand them, we shouldn't use them.

That's putting the cart before the horse. What you really want to say is, "If that's part of what we need in modern medicine, then regulators better learn to understand it, or we will find someone who does."

Senior management, and boards in particular, and regulators need to ensure that they have the kind of knowledge necessary to oversee the activity in these markets. That is critical.

It does not mean that they have to be highly technical people, engineers or PhDs. But they have to be knowledgeable and trained well enough to understand what these instruments are and the basics of how they operate so that they can ask good questions and demand good analyses.

I fully concur that is likely to be one of the important problems that we need to address going forward.

So you've identified the need to create awareness among senior managers and directors. Are there other lessons that you would take away from the last year and a half going forward?

There are many lessons.

I think that the issue of transparency is very important. However, it is a word that is overused, and it isn't always the case that there is no cost to transparency.

Actually, in the derivatives area, there is very high degree of transparency in traded derivatives. You understand what they are and how they are traded on markets.

Some of the most mundane areas are the least transparent. Ordinary loans by banks – that is very opaque. Many of the money market operations are actually opaque. We often treat things that sound very familiar as if they are not a problem, when indeed they are.

At the same time, we have to recognize that there are a number of structural items that lead to crises, and those items are not caused by either fools or knaves. It lets us off the hook too easily to say that there were bad people or stupid people, and let's eliminate them and life will be good. In fact, in many cases even if you had fully ethical, well-behaved individual actions going on, they could still aggregate into systemic risks that cause crises.

If we don't understand that and accept that, then we miss out on what may be the causes of the next crisis, which eventually we will have, no matter what we do.

Congress and the media have called for greater vigilance on the part of regulators, perhaps stronger central regulatory bodies, over options and derivatives. In your view, would that be healthy?

We certainly need to reform the regulatory process. I am concerned on two points. One, we are putting too much reliance on the regulators. Whenever we have a tough problem, we say, "let's have the regulators look at it," as if they were omniscient, omnipotent and all-powerful. They are limited like the rest of us in what they can do.

What's worse than being uninsured is to think you are insured when you are not. If we simply say, "let's turn this over to a new set of regulators and a new set of regulations and then we will be okay," then it creates a set of expectations that I don't think are achievable. There are limits to what we can do, and we have to do the best that we can.

The other consideration is – and I am not quite sure why – at least in the US and it looks like in Europe, the legislatures appear to be distrustful of the regulators. This is because the kinds of legislation they are attempting to pass – and we don't know what will be passed (that's another issue) – are very micromanaged. There are specific rules that are absolute, instead of saying the principles we are trying to establish here in these markets are x, y and z. These regulators are charged with the task of meeting these principles and they pass whatever rules or actions are necessary. The legislatures want to specific types of micro rules – you will do this and you won't do that. That is just a prescription for a mess.

You cannot take something as complex as the global financial system and pass simple rules from Washington or Brussels or wherever that will be adequate to meet the needs.

One of the things we learned is that there are unintended consequences of social actions. We may be looking at one thing, and say we passed legislation to protect that. At the same time we may be having effects on others. Those are my worries.

We need to have good regulation. It's also important to note that, for the most part – and this is a broad statement – the existing regulatory agencies – the Fed, the SEC, and the CFTC in the US and the FSA in the UK – had enormous powers. They had whatever power they needed. For whatever reasons, they didn't succeed in averting this crisis. So one has to ask the question, "Is passing more regulations, if you can't even enforce the ones you have, a useful answer?"

The financial system is very important to us, as individuals and as nations. We must have the ability to transfer risk efficiently and deal with the problem of funding for retirement.

All these problems are going to require a well-functioning financial system to solve. We all have a big stake in seeing that regulation is done right.

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