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## International Faculty Profile

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*After receiving a postgraduate diploma in business administration and working as the assistant to the deputy general manager at Tata Engineering, Suresh Sundaresan realized his calling was in academia. Since completing his PhD in finance from Carnegie Mellon University, he has been a pioneer in research on swaps, options and other financial instruments. During a Chazen Study Tour to India in the wake of the 2004 Indian Ocean tsunami, he realized that he could use some of these financial market tools to help the poor. Today, he is leading cutting-edge microfinance research in collaboration with the Centre for Microfinance Research in Chennai, India, on ways to reduce the high interest rates that are traditionally charged to cover the costs of monitoring loans. As these have long been among the greatest challenges to expanded lending, a breakthrough in this area by Professor Sundaresan could help countless potential borrowers to improve their standard of living.*

You completed your bachelor's degree in mechanical engineering at the University of Madras in India. Why did you choose that field?

My primary interest was mathematics. While I did have the option of taking a bachelor's degree in mathematics, there was no job protection in it, and I come from a family where it was important for me to pursue something which would lead to a job opportunity. So, doing engineering was the easiest way in India at that time to get a job or advance to a higher level of education and then get a job.

You went on to complete a postgraduate diploma in business administration from the Indian Institute of Management in Calcutta. What prompted this change of direction?

After finishing engineering, I looked at some of my career options. I could have gone and worked in a large family company like Tata or a multinational as a graduate engineer. The career path was somewhat limited. It was more technically driven, and I was finding out that folks who did an MBA were joining firms at a much higher level. So, it made sense for me to appear for the national exam and try to get into one of the Indian Institutes of Management, which is what I did.

Your first job was assistant to the deputy general manager at Tata Engineering and Locomotive Company, one of India's largest corporate conglomerates. What was it like to work for Tata in the 1970s?

Tata's name was very prestigious in India when I graduated. Now, of course, it is very well known all over the world because they are expanding to different parts of the world: they acquired Tetley Tea; they've taken some of the brand-name hotels in Manhattan and Boston. So, I basically went with the name. When I started, I was actually quite disappointed because it was a huge bureaucracy. There were thousands of employees, and I was a speck in the ocean, so to speak. It was not a very happy experience. Within six months of joining Tata, I decided it was not what I wanted to do. I wanted to reposition myself in some other field. Then, it occurred to me for the first time that maybe I shouldn't be in the corporate sector. If this was the nature of the corporate sector, [I realized that] maybe I should go for higher studies and think of a career in academia.

After working for Tata, you went on to complete your master's and PhD degrees in finance from the Graduate School of Industrial Administration at Carnegie Mellon University. Why did you choose to study finance? And why in the United States?

Well, the [decision to come to the] U.S. was easy because all the top universities were there, and many of my colleagues from IIM Calcutta had gone there and done very well for themselves. So, the real issue was where I should go within the U.S. It turned out that Carnegie values technical backgrounds. Carnegie Mellon puts a great deal of emphasis on analytic and quantitative method, which I was very good at.

Actually, I didn't go in for finance. They gave me a fellowship, and I went there to do something in strategic planning. This was my initial thinking. Then, I met Herbert Simon, who

was my mentor. He disabused me of that notion and recommended that I focus on a core discipline. Strategic planning is an overarching thing. But, before you get there, you need to have a very good understanding of a core discipline. He told me that finance and economics would be exactly what I should be doing, because the strength of Carnegie is there and there's a lot that I can learn. That was when I made the switch. Once I did, I started to like the topic so much that there was no looking back.

Your research has addressed such topics as swaps, options, forwards and futures. How did you develop your academic interests in financial instruments?

In a way, my research focus reflects Carnegie's research philosophy. Their view is that if you are solidly trained in analytical tools and if you are smart, you'll go and ask the right questions. The first two years you just do fairly abstract courses. You simply absorb wisdom, hoping that it is going to become very helpful to you down the road. After I finished my qualifying exam and started looking for research topics, I was in a position to pretty much do whatever I wanted. It turned out that at the time I graduated, options markets were just coming out. Nobody really had a handle on how these contracts should be valued or what the risk-management functions of these contracts are. I was one of the first out of the gate and thought, "Well, let me take this area and start working."

Your current research focuses on default risk and how it affects asset pricing and sovereign debt securities. Can you tell us a bit more about it?

I came to Columbia in 1980 and started familiarizing myself with Wall Street because future and options [which I had studied previously] are all Chicago instruments. So, I spoke with my colleagues who were very familiar with the markets in New York, and one of the markets in which I became interested was the corporate bond market. At the time I joined, I saw some spectacular defaults. Companies were filing for Chapter 11, and you heard various points of view: from management saying why it is important to restructure, from unions, from suppliers who are left holding the bag. So, I thought it would be very useful for me to develop an understanding of what goes on. That's how I got into it. At the time I came to Columbia, there was another professor, who is now at Wharton, who was also interested. We got to working together.

At the same time, you are conducting research with the Centre for Microfinance Research, which is housed within the Institute for Financial Management and Research in Chennai, India. How did you become interested in microfinance?

Most of my research has been focused on multinational corporations and exchanges in developed countries. After the [2004 Indian Ocean] tsunami, which hit India among other countries, I took 40 MBA students on a study tour of India. One year prior to that, I had already started to spend some time in India doing research. During that visit with my students, the idea crystallized in my mind that some of the tools I have could be used to study markets where borrowers are very poor and can't post collateral but can still access credit markets. The challenge there was Why do lenders lend to very poor people, knowing that they may not be able to be paid? How come these poor people are able to borrow and be current and solvent on loans with interest rates of about 40 percent? It is a very puzzling thing. Everybody was telling me, "Nobody defaults." And I asked them, "What is the interest rate?" They said, "Forty percent." How is this possible? From both sides, there was something very puzzling. So, that's how I got into it.

The Centre for Microfinance Research in Chennai said, "Why don't you come spend the summer here. We'll take you to various borrowing groups, and you'll actually see how this is done." So, I spent a summer understanding exactly how microfinance is done. They sent me some data over a six-year period about how women have borrowed and repaid, as well as how they have moved up in their livelihood. That's how I got into it. Now I have a paper with a doctoral student in this area, and I [directed] a conference for the Social Enterprise Program on April 20 about credit markets for the poor. I am really now very much into this topic.

How many of your colleagues in the U.S. or European academy are focusing on this issue as intensively as you are?

Less in business schools and more in economics departments, because economics departments have a tradition of development economists, whose job it is to look at credit markets and the availability of credit to poor people. It is very natural that they should be the first out of the gate. But, more and more of the business schools are getting into it, and I would say Columbia is a leader because we have the Social Enterprise Program.

We already have an imprint in this area, studying things that are not-for-profit. We've been sending out students to do internship work in different parts of the world. Two of our own students went to study the tsunami relief effort in Chennai for the summer. So, we have an edge in this.

Increasingly, more scholars from business schools are getting involved because they find these questions quite challenging from an intellectual standpoint, and I guess they also see that this can be a very important engine—some would say a necessary step—for any economy to become a major, developed economy. You can't have a significant percentage of your population in poverty if you want to call yourself a developed economy. You have to make sure that they grow. And access to credit for poor sections of the society would be an important component of that.

Your current microfinance research explores the possible endogenous credit rationing that may arise from high interest rates for microloans. What are you finding?

Suppose that interest rates are 45 percent. A number of borrowers are saying, "I can't afford that interest rate. I am not going to borrow." This is what I mean by "endogenous credit rationing." Then, suppose hypothetically that we were to take the interest rate from 45 to 30 percent. More people may be borrowing. At least, that's the textbook answer. It's not something you observe in the data. So, what I tried to do is ask how we can design the contract to keep the default low and bring the interest rates down.

One of the things we are addressing is that right now [a microloan] is a fixed-rate contract. You go to these women—the money is mostly given to women—and charge 40 percent per year. They may have a good outcome or a bad outcome with their businesses. There will be times when they have to say, "I can't pay back." So, what they do is pay the loan off and move out of the loan relationship. That is not a desirable outcome, because their alternative is to go to a local moneylender, which is prohibitively expensive.

So, what we argue is to tie the loan to their economic outcome. In other words, when they are having a good outcome, charge them more. You simply say, "Look. Now, your crop is good. Why don't you just go ahead and prepay the loan or pay more? Then, if there is a drought or some kind of livestock infection and you are not able to pay, we will forgive [the loan] or keep it in arrears and add it up later." We are arguing that by making the loan contract flexible and floating with the economic outcomes, you can keep the default low and bring down the interest rate because they pay more in good times, so they know that in bad times they will not be asked to leave. We argue—at least in a theoretical model—that structuring the contract this way will help to reduce the interest rate. And, if the interest rate is reduced, we can ask if more people come to borrow.

Muhammad Yunus and his Grameen Bank were jointly awarded the Nobel Peace Prize in 2006 “for their efforts to create economic and social development from below.” What do you believe to be the future potential of microfinance?

There is no question that microfinance is a very innovative idea. The very fact that [Grameen has] sustained such a long period of time and become sort of a movement speaks for itself. So, I think [Dr. Yunus] deserves all the accolades he is getting. However, there are two structural problems with his model. First, you are giving small doses of credit—\$100 to \$200 is the average loan size. Second, you are giving it to folks among whom maybe one out of 100 is an entrepreneur. So, the question that arises is how you are going to scale this up. One-hundred-dollar loans that are repaid every six months are better than zero, but it’s not a ticket out of poverty. Scalability may not be feasible if borrowers are not entrepreneurs, if they are not educated and if they don’t have access to technology.

Therefore, a lot of complementary things have to go along with the provision of credit, not the least of which are education, technology, training and entrepreneurship. I don’t feel that just giving access to credit and collecting it on time is going to be the way out of poverty. There are some studies being done now to judge whether folks who have participated in microloans for four to five years are significantly better off, whether microfinance has made an impact on poverty and whether borrowers have in some measurable way improved their lot. However, we have not had large-scale studies of this sort. We think that microfinance, coupled with various other things, might be one way out of poverty, but I think a lot of hard empirical work remains to be done.

While conducting research about microloans to the working poor, you are also consulting with such capital markets powerhouses as Morgan Stanley and Ernst & Young. Do you foresee a time when these two worlds are integrated?

At some levels, you’re seeing technology leveling the playing field. I will give you one example. If you ask, “What is the single most active use for microloans?” it’s cell phones. Women [borrowers] are getting the cell phone and renting it to others. Using the phone, they can find out at what price they can sell in four or five local markets and get the best possible price. They can now get credit through cell phones. How did that happen? These are big communications companies, and the fiber-optic networks of these companies have actually made inroads to a point where it’s touching the lives of very poor sections of the society. So, in some sense, that convergence is taking place.

Another example I'll give you is ITC, which used to be a tobacco company in India—Indian Tobacco Company. ITC sells a wide variety of products, including fertilizers and pesticides. They have a fiber-optic network in every village, where they build kiosks. Farmers will come in with their produce and use the computers in the kiosk to discover the best possible price [for it]. They will collect their money, leave their produce with the kiosk and go. The kiosk will aggregate the whole thing and sell it. So, they are getting rid of the middleman. This is called “eChoupal” in India, and it is a big deal.

You can see [through examples like this] that technology at some of the big firms is starting to make an impact through their products and services. And then there is the other kind of impact, where the founder of eBay has created a \$200 million fund for microloans. TIAA/CREF, the pension giant and investment company, has created a similar \$100 million fund. The founder of Sun Microsystems, who is now a venture capitalist, is investing full-time in microloans. What you are seeing is that people are finding other ways to make a difference. That said, there will always be a difference between what a Morgan Stanley or Goldman [Sachs] will be focused on, and microloan markets. [The microloan market] is tiny for them. It will never be the focal point of their attention in the near future. But, they will be impacting that market, either through their products and services or through their philanthropy efforts, although increasingly the model is not one of philanthropy. It's one of commerce.