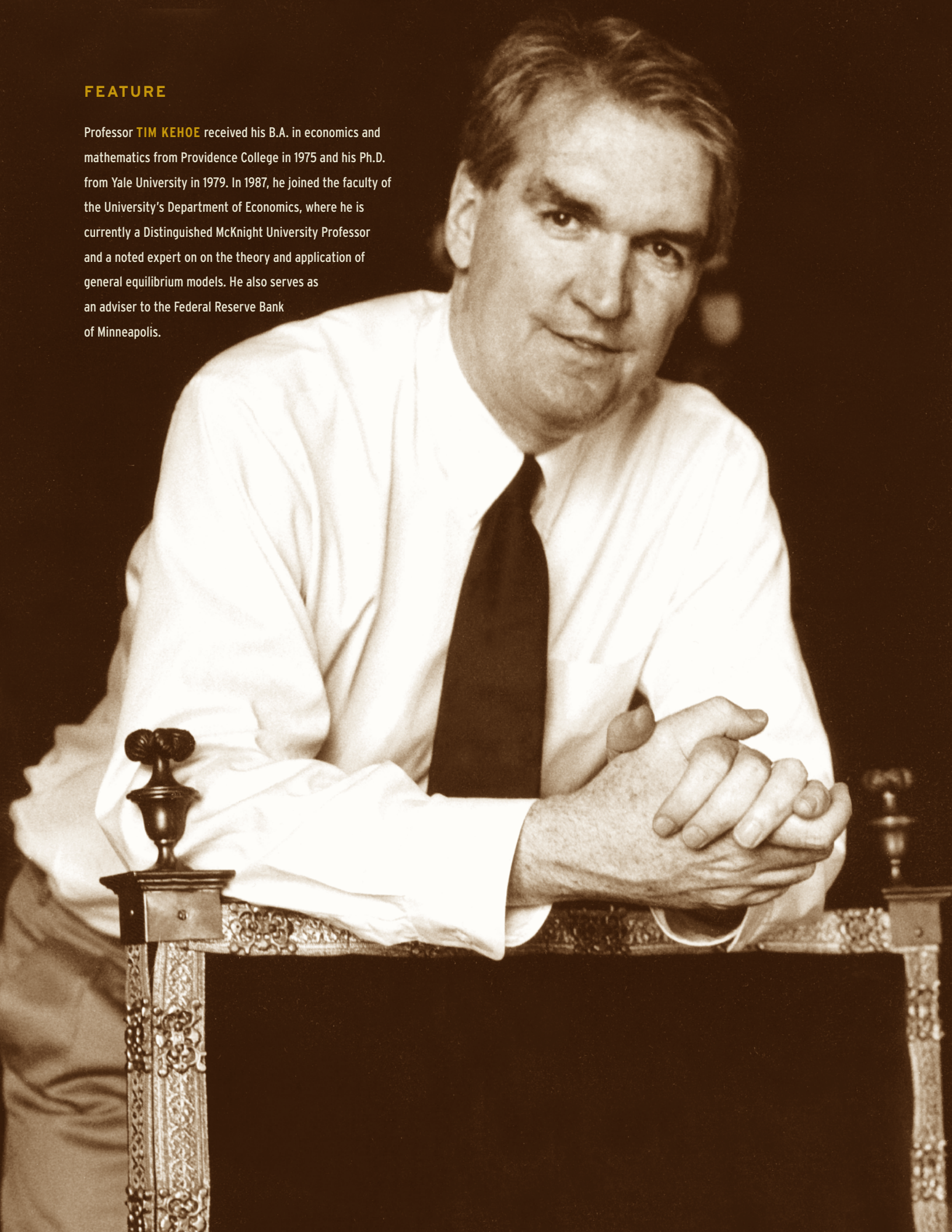


FEATURE

Professor **TIM KEHOE** received his B.A. in economics and mathematics from Providence College in 1975 and his Ph.D. from Yale University in 1979. In 1987, he joined the faculty of the University's Department of Economics, where he is currently a Distinguished McKnight University Professor and a noted expert on the theory and application of general equilibrium models. He also serves as an adviser to the Federal Reserve Bank of Minneapolis.



A Wealth of Nations

Catching up with international economist Tim Kehoe

DOUGLAS CLEMENT

PINNING DOWN PROFESSOR TIMOTHY KEHOE ON ISSUES ISN'T DIFFICULT. He's unfailingly direct about macroeconomics. His informed decisiveness is part of the reason Mexico, Panama, and the World Bank have called upon his expertise, and why he sits on the *Minneapolis StarTribune's* board of economic advisers.

But pinning Kehoe down for a face-to-face conversation can be a lot tougher. Yes, he has office hours, but often—especially in summer—he's on the road. A mid-June e-mail to his Minneapolis address jumps across the Atlantic. “The problem is that I am in Barcelona now,” Kehoe replies overnight. “I go to Prague tomorrow, then to Budapest.”

To Kehoe, abroad is not a synonym for unavailable. The exchange below was conducted through a call to Kehoe's cell phone as he traveled through the Czech Republic, another to his cell while he was in northwestern Spain, and in a series of e-mails. Its coherence is testament to Kehoe's capacity for focus in the midst of economic research across a wealth of nations.

Your early work in economics was highly theoretical. Now much of it is focused on real world issues—trade, business cycles, exchange rates. Why has your research taken this pragmatic turn?

Actually, I see my work on theory as being very connected to my applied research. All of it deals with general equilibrium models—models in which consumers, producers, and governments interact. There's a lot of exciting work in applied general equilibrium, especially in the overlap between trade and macro.

My Ph.D. thesis at Yale used differential topology to study when a general equilibrium model has a unique equilibrium and when it doesn't. Andreu Mas-Colell, a Minnesota Ph.D., helped me a lot back then. Later, when I taught at M.I.T., I met David Levine, a grad student there, and we used the same tools.

At Yale I also wrote computer programs to apply general equilibrium models. I worked with Jaime Serra-Puche, a grad student from Mexico who's still one of my best friends. We studied tax and trade policy reforms in Mexico and Spain. Later, Andreu introduced us to some young economists at the Universitat Autònoma de Barcelona, including Antonio Manresa, another Minnesota Ph.D.

We taught these guys how to build general equilibrium models on a computer, and then used the models to study what would happen when Spain joined the European Community (as it was called back then) in 1986. One of our research assistants, Cristina Echevarria, later came to Minnesota to do her Ph.D. In fact, I was her thesis adviser.

Why are applied general equilibrium models so important?

They are the tools that have revolutionized economics. They let economists put theories to work, combining data and models to analyze the impact of changes in government policy, things like the North American Free Trade Agreement, NAFTA. We pull together all the data that describe production, consumption, trade, and so on for the U.S., Canada, and Mexico. Then we build a computer model and calibrate it so that consumers, producers, and governments do the same things in the model that they do in the data. We then change government policy in the model, let everyone adjust, and see what happens. Applied general equilibrium models are the best tool we have for analyzing the impact of policies like NAFTA.

Your research on NAFTA revealed that economic models under-predicted its impact. How can they be improved?

Great question. In fact, trying to answer it has become my obsession. After Jaime Serra-Puche and I worked together for a number of years, he left academics to join the Mexican government and later became secretary of trade and industry. It was Jaime who negotiated NAFTA with the United States and Canada. I was his adviser and used applied general equilibrium models to predict what the impact of NAFTA would be.

It turns out that our models didn't do so well. In fact, none of the models that economists were using did very well. Trade in North America exploded in all sorts of areas that we had not expected.

I've been working on this with Kim Ruhl, a former student of mine from Minnesota who now teaches at the University of Texas. Jaime's and my models had worked great when we were predicting the impact of tax reforms, but they didn't work as well predicting the impact of trade reforms. As a researcher, I find this really

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exciting. It means that we have a lot of interesting things to figure out. As a former policy adviser, however, I am appalled. Economists have got to do a better job when a big debate on economic policy like NAFTA comes up again.

You've taught at universities throughout the world. Why did you decide on the U? What's unique about economics here?

As I mentioned, I ran into several people from the U in my early years in economics. And my brother Patrick was an assistant professor here. David Levine and I had also become friends with Ed Prescott, who was interested in our dynamic general equilibrium models. There was a revolution going on in macro, and economists at the U—Ed, Neil Wallace, and Tom Sargent—figured that David and I, with our work on dynamic general equilibrium and our interest in both theory and application, would fit right in. After teaching for four years at Cambridge University in England, I realized I really was an American and

wanted to return to the United States, so the offer that Minnesota made me was a dream come true—although I didn't fully appreciate it at the time.

Jim Simler, the department chair then, asked me what I wanted to teach. I asked him what he wanted me to teach. We went back and forth like this for a while. I didn't understand at first that the department wanted me to teach the economics I was excited about—to both grad students and undergrads.

In the early 1990s, I really got going with my teaching in my undergraduate class, Economic Integration in the Americas. Students learn about models—what they do well and not so well—and I help them think about economic issues in Latin America. I've had some great students in that class, and we've had a lot of fun. I bring in grad students from Canada and Latin America to give undergrads a more international perspective.

I have even more fun teaching graduate students. About 15 years ago, Ed Prescott and I started running a weekly workshop with our grad students. No one else was doing it at the time. Now everyone is. A student gets up and presents his or her stuff. It is intense, but fun. We can go out and drink beer afterwards, but it is all incredibly serious. We are trying to push the frontiers of economics, and Ed and I have turned out a lot of very good economists with this approach.

Now I run the workshop along with Cristina Arellano, a young professor from Ecuador. We have a lot of fun, but I must say I really miss supervising grad students with Ed. Of course, we still see each other a lot at the Minneapolis Fed, where we've been using applied general equilibrium models to study the causes of great depressions.

Why do you study economic depressions? Aren't they "historical relics"?

Actually, they're not. The sorts of things that happened in North America and Western Europe in the 1930s have happened more recently in Latin America, Japan, New Zealand, and Switzerland. Ed and I edited a special issue of the *Review of Economic Dynamics* about this a couple of years ago. We're hoping to publish an expanded collection soon.

We've found that governments in some countries are so fixated on avoiding unemployment and drops in investment that they impose policies that can destroy the economy for a decade or longer. These are big policy mistakes that are worth avoiding.

Keynes was wrong in passing off the long run as the time when we are all dead. If we do not watch out, the long run can be when we are in a great depression.

In Budapest you presented a paper called "Sudden Stops and Productivity Drops." Could you give us a brief summary?

It's related to the depressions project. Kim Ruhl and I are trying to understand why, when foreigners stop lending to a country, like Mexico in 1994 or Argentina in 2000, the economy falls into a depression. The data indicate that relative prices change a lot, telling producers to shift resources from one sector to another. When this happens suddenly, it can cause severe economic disruption. Kim and I are working on an applied general equilibrium model to analyze this sort of thing. We want to see what can be done to prevent it or to lessen the social costs.

Is it difficult to be on the road so much?

I have a lot of friends who are economists all over the world, but especially in Spain and Latin America. I love to get together with them and talk about economics. I also love to eat and drink with them. I was lucky enough to meet a great woman at the U, Jeani O'Brien, who is a professor in the history department. Jeani and I have been married for fourteen years. She also speaks Spanish and loves to travel with me when her schedule permits.

All this being said, I have been traveling a lot over the past few months and I look forward to getting back to Minneapolis—the summer is a great time there.

How do you explain the fact that the U's economics department is so highly rated nationally despite the fact that it competes against private universities with much deeper pockets?

That is a big problem. [Competition for top economists] is tough. I think that the administration at the U understands that it has a great department, however, and they are supporting us in trying not only to keep our department together but also to improve it. Our department, working together with the Minneapolis Fed, is the best place in the world to teach and study economics and to do economic research. We want to keep it that way.