

Career Narrative

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In 1975, I received my undergraduate degree *summa cum laude* from Providence College, a small, Catholic, liberal arts college in Rhode Island with a double major in economics and mathematics. I then entered the Ph.D. program in economics at Yale on a university fellowship. At Yale, my specialties were industrial organization, international trade, macroeconomics, and mathematical economics. After working as a research assistant for two summers for Herbert Scarf writing computer programs for new algorithms for solving integer-programming problems, I wrote a Ph.D. thesis under his supervision. The thesis used mathematical tools from differential topology to develop necessary and sufficient conditions for a general equilibrium model to have a unique equilibrium. This was the beginning of my research on the theory and application of general equilibrium models — economic models in which the interaction of consumers, producers, and (sometimes) a government determines prices, consumption levels, production levels, and so on.

Besides Scarf, I met a number of other people while in graduate school with whom I have maintained close relationships and who have had major impacts on my subsequent work. These include Andreu Mas-Colell, then a professor at Berkeley, with whom Scarf put me in contact because of his interest in topics similar to those dealt with in my thesis, and my classmates David Backus and Jaime Serra-Puche. The good fortune to work with Scarf and Mas-Colell allowed me to finish my Ph.D. in what was, except for putting the finishing touches on my thesis, three years. Rather than move away from New Haven, I decided to stay in the area, taking a job teaching at Wesleyan University in 1978.

After two years at Wesleyan, I moved to the Department of Economics at the Massachusetts Institute of Technology. It was while at MIT, mostly as a result of my interaction with graduate students such as David Levine and Michael Woodford, that I began to combine my interest in general equilibrium theory with that in macroeconomics. I began a collaboration with Levine that has lasted more than twenty years, studying the properties of dynamic general equilibrium models suitable for macroeconomic analysis.

While at MIT, I also became a friend of Frank Hahn, who was visiting from the University of Cambridge in England. Hahn convinced me to spend the 1983-84 academic year in Cambridge, which I did with the support of a fellowship from the Sloan Foundation. I enjoyed my time in Cambridge so much that I applied for a (tenured) position as University Lecturer in the Faculty of Economics and Politics. After receiving this appointment, I spent the next three years in Cambridge, where I was also a Fellow of Clare College.

While at Cambridge, I continued my work with Levine on dynamic general equilibrium. We both spent the summer of 1985 with fellowships at the Mathematical Sciences Research Institute at Berkeley. Collaborating with other researchers there, Levine and I wrote a joint paper with Mas-Colell and Woodford on gross substitutability in dynamic economies and a joint paper with Mas-Colell and William Zame on determinacy of equilibrium.

I also continued to work with Serra-Puche on applied general equilibrium. While at Wesleyan and MIT, I had worked with him on building applied general equilibrium models to analyze the impact of government policies, such as the 1980 tax reform, on the Mexican economy, especially on income distribution. In 1984, Mas-Colell arranged for us to visit the Universitat Autònoma de Barcelona to explain our work to the economists there. This visit led to a project, initially financed by the Spanish Ministry of Economic Affairs, that developed applied general equilibrium models to analyze the impact of the tax and tariff reforms that accompanied Spain's 1986 entry into what was then the European Community. Besides Serra-Puche and me, the researchers on this project were three Spanish economists, Antonio Manresa, Clemente Polo, and Ferran Sancho, and a Mexican economist, Pedro Noyola, who had previously spent a summer working with me at MIT and who had just finished his Ph.D. at Stanford.

Serra-Puche and Noyola had to give up the Spanish project after entering the Mexican government in 1986, but I continued. I have spent some part of every year since 1984 in Spain doing research and teaching. I have also used my stays there, mostly in Barcelona, to work on my Spanish and to learn Catalan. I have been a visiting professor at the Universitat Autònoma de Barcelona, the Universitat Pompeu Fabra, the Universitat de Barcelona, and the Universidad de Alicante. I have enjoyed giving numerous seminar presentations and public lectures throughout Spain and Latin America, and I have become very involved in academic and social affairs there: I have helped organize numerous conferences and workshops; I have written a number of papers in Spanish and in Catalan; I am an associate editor of three Spanish language journals, one published in Chile, one in Mexico, and one in Spain; together with a group of friends, I organize the annual *calçotada* (a Catalan winter onion dinner) of economists from the three Barcelona universities; my wife, Jeani, and I are members of the *Foguera de Hernán Cortés*, one of the social clubs that organize the *Fogueres de Sant Joan*, the major annual festival in Alicante; and so on.

Although I enjoyed my stay in Cambridge and still maintain close personal and professional ties with people there, I decided after four years that I was American, and not English, and did not want to spend the rest of my life in England. In 1987, I obtained a position as Professor in the Department of Economics at the University of Minnesota, where I have remained ever since. At Minnesota, I have also been associated with the Research Department of the Federal Reserve Bank of Minneapolis, serving as a full-time adviser during the academic years 1993-1994, 2000-2001, and 2001-2002, and part-time in other years.

One of my major activities at Minnesota has been supervising Ph.D. students. Since 1991, Edward Prescott and I have run a weekly workshop with our graduate students. Together we have supervised the theses of approximately fifty students who have gone on to positions in international agencies, governments, the private sector, and — predominantly — academics. (A list of my Ph.D. students, their thesis titles, and current positions can be found on my web page: <http://www.econ.umn.edu/~tkehoe>.)

In addition to supervising graduate students at Minnesota, since 1996 I have helped organize a workshop in dynamic macroeconomics in Soutomaïor, Spain with the help of the macroeconomists from the Universidade de Vigo, Omar Licandro of the European University Institute, Franck Portier of the Université Toulouse I Sciences Sociales, and José-Víctor Ríos-

Rull of the University of Pennsylvania. This workshop, which is funded by the Fundación Pedro Barrié de la Maza, allows young people — advanced Ph.D. students and new professors — to receive intense feedback on their work from senior macroeconomists. Participants come from all over, but predominantly from France, Portugal, and Spain. A professor from the Universidade de Vigo visiting the University of Minnesota, José María Da Rocha, had seen how Prescott and I were running the workshop with our graduate students and proposed that we try to do something similar in Europe. The success of our workshop has inspired at least one similar project, the Villa Mondragone Workshop of the Università degli Studi di Roma “Tor Vergata,” run by Michele Boldrin, a colleague of mine at the University of Minnesota and a veteran senior economist of the Soutomaioir Workshop.

At Minnesota, I have continued my collaboration with Serra-Puche and Noyola. While Serra-Puche was Secretary of Trade and Industrial Development in Mexico, from 1988 to 1994, and Noyola was Under-Secretary, I did research advising them on trade reform in Mexico and on negotiating the North American Free Trade Agreement and similar agreements with other countries in Latin America. In 1997, the three of us worked together with Thomas Rutherford of the University of Colorado analyzing possibilities for trade reform in Panama for the Minister of Economic Planning, Guillermo Chapman. At the conclusion of this project, we presented to the President of Panama and his cabinet a proposal for a reform. In 1998, the Panamanian government put a version of our proposed reform into effect.

Some of my recent research that I find most exciting is that related to international trade, capital flows, and financial crises: Harold Cole of the University of California, Los Angeles and I have developed a general equilibrium model to explain how the debt crisis in Mexico at the end of 1994 and the beginning of 1995 was able to occur in spite of the relatively low level of Mexican government debt. Gonzalo Fernández de Córdoba of the Universidad de Salamanca and I have developed a general equilibrium model that can account for much of the capital inflows and real exchange rate appreciation that typically occurs following trade and foreign investment liberalization in developing countries. Caroline Betts of the University of Southern California and I have developed a general equilibrium model that does a good job of accounting for real exchange rate fluctuations based on real shocks that buffet an economy. (Details on this research, and downloadable versions of the papers, can be found on my web page.)

Over the past two years, Prescott and I have coordinated a project centered at the Federal Reserve Bank of Minneapolis that studies major economic depressions of the twentieth century — both from the interwar period in Europe and America and from more recent times in Japan and Latin America — using a common framework. All of the studies in this project rely on growth accounting to decompose changes in output into the portions due to changes in factor inputs and the portion due to the changes in efficiency with which these factors are used. All of the studies employ simple applied dynamic general equilibrium models. Collectively, these studies indicate that government policies that affect productivity and hours per working-age person are the crucial determinants of the great depressions that occurred in the twentieth century. So far, we have published a special issue of the *Review of Economic Dynamics* based on this work, and we are planning on publishing a revised and expanded version of the work as a book in the near future.

My own research as part of this project has been joint with Raphael Bergoing of the Universidad de Chile, Patrick Kehoe of the Federal Reserve Bank of Minneapolis, and Raimundo Soto of the Universidad Católica de Chile. We compare the cases of Chile and Mexico, which both experienced severe economic crises in the early 1980s. Chile recovered much faster than did Mexico. Using growth accounting and a calibrated dynamic general equilibrium model, we conclude that the crucial determinant of this difference in the economic performances of the two countries was the faster productivity growth in Chile, rather than higher investment or employment. Our hypothesis is that this difference in productivity growth was driven by earlier policy reforms in Chile, the most crucial of which were in banking and bankruptcy procedures. To explain the difference in productivity growth between Chile and Mexico, we propose a theoretical framework in which government policy affects both the allocation of resources and the composition of firms.

Funding for my research has been provided by a number of sources, most consistently by the National Science Foundation. Since 1982, I have received seven multi-year grants from the National Science Foundation.

In addition to academic conference and seminar presentations, I have found myself in recent years giving many public presentations on trade reform and financial crises. These have ranged from testimony on NAFTA for a U.S. Senate subcommittee to appearances on local television and radio to newspaper interviews in Latin America and Spain. As well as being a co-editor of an academic economics journal and an associate editor of six others, I serve on the Board of Economists of the *Star Tribune*, a local newspaper. In 1991 I was elected Fellow of the Econometric Society, and in 1996 I was named Distinguished McKnight University Professor at the University of Minnesota.