

My Studies in International Economics

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Abstract

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Introduction

In what follows, I first review some of the major influences that shaped my early years. I then relate the subsequent developments in my professional career, including my research orientation, chief publications, collaborative relationships, and longstanding involvement in undergraduate and graduate teaching and supervision.

The Early Years

Growing up for the most part in Brookline, MA, I had the benefit of a first-class education in the local public schools. I remember in particular Ms. Fitzgerald and Ms. Frame, my 7th and 8th grade English teachers at the Edward Devotion primary school, for their instruction and care in imparting the main elements of written expression to me and my fellow students. It was then that I first learned really how to write and the need for clarity and conciseness in written expression. I have carried forward these lessons and have found great satisfaction in my own professional writing and the writing of my students.

I later attended Brookline High School, which at the time had an outstanding coterie of devoted and effective teachers. I liked and continued to benefit from my English teachers, but the greatest impressions and influences that I experienced were in the study of French with Ms. Perrin and in Spanish with Ms. Placido. I wanted to emulate their methods of language teaching and thought at the time that teaching was what I wanted to do.

After high school, I enrolled as an undergraduate in 1944 at UC-Berkeley, having chosen to apply there on a recommendation of a brother who had been enrolled. When I entered UC-Berkeley, I declared my major as romance languages, Spanish in particular. My Spanish from high school was good enough that I could enroll as a freshman in upper division Spanish courses. To further my background, I also enrolled in college-level Latin and Portuguese. As I progressed, as part of my major, the more advanced courses were in Spanish literature and philosophy, which I found to be rather demanding and difficult for me. I then decided to reevaluate my long-run goal and switched my major to economics and business administration. This switch was motivated in part by parental influence, since my father, who was running a wholesale meat-packing business in Boston, let it be known that he would very much like for me to join the business.

My switch in majors was in 1946, which was after WWII had ended and veterans were returning to school in large numbers. Although the classes were now fairly large, I recalled that I especially enjoyed the courses in business cycles taught by Robert A. Gordon, labor economics by Clark Kerr, and money and banking by Ira Cross. I also took courses in accounting and auditing, and it was these courses that led to me to take a civilian job after graduation in 1948 as an auditor with the 8th Army Central Exchange in occupied Japan. This gave me an opportunity to travel, which I had always wanted to do, and to gain experience in working in a large organization. During my time in Japan, I was able to travel considerably, conducting audits of post exchanges on different military bases. I later became the head accountant at the main post exchange in Tokyo, which involved supervising a large staff of American and Japanese employees and preparing the periodic financial statements that were required. I took away from this experience that I could handle administrative responsibilities as well as the responsibilities

of working with large amounts of financial data and preparation of detailed financial reports. These skills served me well subsequently.

Following my stay in Japan, I enrolled in the MBA program at the University of Chicago. While I concentrated on the study of marketing and accounting, I found that I was most interested in the courses with economic content, in particular industrial organization. During my time at Chicago and given my family involvement in the meat-packing business, I was able to make arrangements for visits to some of the local slaughterhouses and get a first-hand impression of this phase of the business. The slaughterhouses were by no means very pleasant places to visit and to work, and to see how the cattle and hogs were being processed. Indeed, I felt that the writing of Upton Sinclair about the industry was not an exaggeration of the conditions in the slaughterhouses of Chicago. My time in Chicago convinced me that I did not want to follow in my father's footsteps in the meatpacking industry, and that I wanted to pursue a career in teaching and in economics in particular.

I decided therefore to apply for PhD study in economics and chose Columbia University, largely because George Stigler was on the Columbia faculty and that I was especially interested in specializing in industrial organization. Before entering Columbia in 1954, I taught economics and accounting at Union College, a small liberal arts institution in Schenectady, NY. This was a worthwhile experience and reinforced my conviction to pursue a teaching career. My PhD coursework was interesting and demanding. I took price theory with William Vickrey, monetary economics with James Angell, macro with Albert Hart, public finance with Carl Shoup, industrial organization and the history of thought with George Stigler, statistics with F.C. Mills, and international economics and international capital movements with Ragnar Nurkse. Of all these courses, those taught by Nurkse were for me by far the best and most interesting. After

completing the PhD oral examinations, I decided therefore to write my doctoral dissertation under Nurkse's guidance. This then got me started on a long career in the field of international trade and finance.

During my coursework, I had become interested in international commodity problems and sought Nurkse's assistance in developing a dissertation proposal. I remember vividly how we discussed different topics and his suggestion that I might write on issues of U.S. agricultural surplus disposal and trade policies. He guided me along in our periodic meetings, and he was of great help in reading and commenting on my research. It is to his credit that I was able subsequently to publish five papers based on my dissertation.¹ I continued to work on international commodity problems after completing my PhD, focusing especially on measuring the price responsiveness of primary commodity producers in a variety of settings, including rice and jute in India, Egyptian cotton, West African cocoa, and Malayan natural rubber. Thereafter, I concentrated on empirical research in international trade, beginning with a study of the Ricardian model of comparative advantage, using American and British data on trade and wages and productivity that built upon material covered in Nurkse's course. My research interests over the past decades have spanned both international trade and international finance, which is something that I can attribute to Nurkse's influence since his own research and publications similarly spanned both aspects of international economics.

On a more personal note, I had occasion in late 1958 to assist Nurkse in Geneva in compiling historical data on international capital flows in connection with the preparation of his Wicksell Lectures on trade and development that he delivered in Stockholm in April 1959,

¹ Details on my various publications noted here and in what follows can be found on my curriculum vitae that is available on: http://fordschool.umich.edu/faculty/Robert_Stern.

shortly before his untimely death. At the time, I was a Fulbright scholar studying econometrics in Rotterdam with Henri Theil. When Nurkse asked if I could come to Geneva for a couple of weeks to work with him, I welcomed the opportunity. During my stay in Geneva, we met each day to discuss my data collection and how it would fit into the preparation of his lectures. I look back on this experience with nostalgia and warmth as one of the high points of my academic career.

After Nurkse died, James Tobin of Yale University, who was on leave in Geneva and was a close friend of Nurkse, called me in Rotterdam and asked if I would be able to come to Geneva to help Mrs. Nurkse organize her husband's papers. This was a sad occasion, needless to say, and I was glad to be of assistance to Mrs. Nurkse in a time of need. It turned out later that I was able to work with Gottfried Haberler of Harvard University and a close friend and associate of Nurkse going back to his time in Vienna and in the League of Nations Secretariat, in assembling Nurkse's collected papers and publishing them in 1961 as a Harvard Economic Study entitled *Equilibrium and Growth in the World Economy: Economic Essays by Ragnar Nurkse*. This was the first edited volume that I published and that later motivated me to publish many other edited volumes individually and jointly, the last count being 29 volumes as of 2011-12.

In August 2007, I was invited to attend and contribute a paper for a conference in Tallinn, Estonia, to mark the 100th anniversary of Nurkse's birth and the issuance by the Estonian Government of a postage stamp with his portrait in his honor. This was a wonderful occasion, in which Nurkse's son, Dennis, at the time Poet Laureate of Brooklyn, and I were the only ones present who had had close contact with Nurkse. This conference gave me the opportunity to visit the house in which Nurkse was born and to celebrate publicly his life and accomplishments

and to express my sincere appreciation for the role that he played in my professional development.

Quantitative International Economics and Doing Trade Theory with Numbers

In my Fulbright year at the Netherlands School of Economics, I had close contact with Henri Theil. He supervised my work on an econometric study of distributed lags, which was later published jointly. To do this work required using a Monroe hand-cranked calculator for several weeks and calculating a seemingly endless number of correlation coefficients and analyzing their distributive patterns. It is interesting in the present computer age to look back to see how far we have come computationally in a half century.

Following my Fulbright year in the Netherlands, I received an appointment as an Assistant Professor of Economics in the College at Columbia University. In 1959-61, I taught a course in International Trade and one in Contemporary Civilization, which was a social science and humanities course required for undergraduates. I entered the PhD job market in 1960-61 and succeeded in obtaining an appointment as an Assistant Professor of Economics at the University of Michigan beginning in 1961-62. Wolfgang Stolper had been teaching at Michigan for several years, and he decided to change his field of specialization from international trade to economic development, thus creating the opening that I filled. Needless to say, I was delighted with this opportunity, which has served me well and enabled me to pursue my teaching and research for nearly the subsequent 50 years.

In my beginning years, I taught the PhD courses in international trade theory and international finance, served on some dissertation committees, and continued my research on international commodity issues. I also published two conceptual papers with Elliott Zupnick, a

long-time friend from Columbia days, on the theory and measurement of the elasticity of substitution in international trade and on the analysis of devaluation in a three-country world. Further, I published an empirical paper on “The U.S. Tariff and the Efficiency of the U.S. Economy” in the May 1964 *American Economic Review, Papers and Proceedings*. As far as I know, this was one of the first published papers trying to measure the welfare effects of U.S. tariffs.

Around this same time, I became interested in the subject of export-led growth, which a number of countries were experiencing. Italy was one such country, and I decided to undertake research on its growth experience. With the assistance of a Ford Foundation faculty fellowship, I was able to spend the 1964-65 academic year in the research department of the Banca d’Italia in Rome. This was a very enriching experience to interact with the research staff and to get advice on pertinent modeling and econometric issues and pertinent data. I had close contact in particular with Antonio Fazio, who was a young researcher at the Banca d’Italia and had spent a year studying at MIT. I was grateful to Antonio for our many conversations and for his feedback on my research. As many people may know, Antonio later became Governor of the Banca d’Italia and served effectively, until he was accused in 2004-05 of using his influence to resist foreign interest in an Italian bank. He resigned his position at the end of 2005 and subsequently was convicted in the Italian justice system and sentenced in May 2011 to four years in jail for market rigging and ordered to pay a 1.4 million euro fine. It is difficult for me to reconcile his downfall with the person that I had come to know well and respected in years gone by. In any event, I published an English language version of a book on Italy’s export-led growth in 1967 and an Italian language version in 1968.

Following my return from Italy in 1965, I turned my attention more directly to quantitative issues in international economics. In this connection, I enlisted the services of Ed Leamer, who was a PhD student at Michigan in the late 1960s, specializing in econometrics and international economics. This resulted in the preparation of a coauthored volume, *Quantitative International Economics*, which was published in 1970 and covered such topics as measuring price and income elasticities in international trade, the gravity model, and constant-market share analysis. This was a kind of pioneering effort at the time, and it is an especial tribute to Ed Leamer's knowledge and skills with econometric methods and data analysis, which he has continued to apply throughout his subsequent academic career.

At around this same time, I had turned my attention to writing a book, *The Balance of Payments: Theory and Economic Policy*, which drew on my teaching of the PhD level course in international finance at Michigan. Harry Johnson, with whom I had some contact, suggested that I undertake this book, and he offered some very helpful comments at the time. The book was structured in terms of the Keynesian IS-LM model and was published by Aldine in 1973.² It

² One never knows how useful or influential one's publications may be. But Marina Whitman (2010), my long-time colleague at Michigan, has written how my book influenced her thinking and teaching:

“By a stroke of luck, I found a useful organizing framework in Bob Stern's just-published (in 1973) book, *The Balance of Payments*. To me, at least, his approach was revolutionary, and far more realistic than the one I had absorbed in graduate school and had incorporated into my own teaching ever since. Rather than analyzing international economic interactions using what was essentially a closed economy model with the current account tacked on, adding the term $(X-M)$ to the definition of national income, Stern outlined a full-fledged model of an open economy, incorporating as endogenous shifts in both the current and capital accounts. Rather than defining balance-of-payments equilibrium in terms of a zero balance on current account, as I had absorbed from Kindleberger, he defined it as zero net flows of “accommodating transactions” or balancing items, that is, short-term flows of official capital and movements of international reserves. Finally, he incorporated into what was effectively a graduate-level textbook Mundell's two-

sold reasonably well for a few years until it was superseded by the movement to flexible exchange rates and the monetary approach to the balance of payments, which I had not covered systematically in my book.

During the 1969-70 academic year, the Michigan Economics Department was given authorization to recruit a new PhD specializing in international economics. It was then that Alan Deardorff was hired. He was completing his PhD at Cornell University and had worked especially with Jaroslav Vanek. On the basis of his excellent theoretical work on trade and growth, he was offered a position and joined the Economics Department in the fall of 1970. I subsequently had occasion to give him feedback on his writings on topics that were new to me and that he was preparing for journal submission. After a short time, I proposed that we might work together on some research that would draw upon his modeling skills in conjunction with my own empirical and policy orientation. Thus began a collaboration and close association between us that has continued for about 40 years.

It turned out that not only was Alan a truly accomplished trade theorist, he also quickly mastered issues of data and policy application and analysis. In particular, in 1972-73, the U.S. Bureau of International Labor Affairs (ILAB) put out a request for proposals for studies of the trade and employment effects of tariffs and other trade policies and for the effects of multilateral trade liberalization. We decided to focus on the latter topic and to address it by means of a computational general equilibrium model, following work that was being done at the time in economic development studies. In the event, our modeling proposal was turned down. We decided nonetheless to continue with the modeling work and to embark on the construction of a

instrument solution to achieving both internal and external balance under different exchange-rate systems. Eureka!"

data set covering the trade, output, employment, and pertinent elasticities for the major industrialized and developing countries. It was this joint effort that led to the development of what we were to call the Michigan Computational General Equilibrium (CGE) Model of World Production and Trade.

Once the computer code and data were in place, we tried various modeling experiments involving trade liberalization. The challenge then was to study and interpret the computational results. In the early stages, it appeared that some results were counter intuitive or much larger than seemed reasonable. What we did then was to go back to the theoretical structure of the model as well as the data to determine what was wrong and to make theoretical and data changes that yielded what we thought were more reasonable results of trade liberalization. We thus became deeply involved at the time in doing what we called “trade theory with numbers.” We proceeded to publish a series of papers beginning in 1977 in which we used the Michigan Model for a variety of different issues involving the effects of policy changes on trade and employment for the major industrialized and developing countries.

In the course of work with the Michigan Model, we maintained contact with ILAB and the Office of the U.S. Trade Representative (USTR). This led to our being commissioned by the U.S. Senate Finance Committee, which was responsible for monitoring and evaluating the U.S. negotiating position in the Tokyo Round of Multilateral Negotiations. For this purpose, it was necessary to obtain access to the U.S. tariff offers and those of its major trading partners that had been tabled in the negotiations. We had to obtain official clearance to gain access to the tariff offers. When we first ran the model and sent the detailed sectoral results on trade and employment to the Senate Finance Committee and the USTR, we were informed that the USTR objected to our results.. We could not find any errors, however.

On further investigation, it turned out that the USTR had not provided the most up-to-date data on the tariff offers that had been tabled. It was only after the Senate Finance Committee threatened to subpoena the latest tariff offers that the USTR provided the requisite data. Our computational results were that the sectoral trade and employment and aggregate economic welfare effects of the proposed reciprocal tariff offers were comparatively small in both absolute and relative terms for the U.S. These results were comparable to those that we had obtained previously in running hypothetical tariff reductions. Our task then was to meet with pertinent staff members in Washington to explain our modeling methodology and results, which was not always an easy task. In any event, we were informed by the staff of the Finance Committee that they found our study and results useful in countering the claims especially of U.S. organized labor that the Tokyo Round negotiations would lead to significant displacement of U.S. workers. Our study was published by the U.S. Government Printing Office in 1979.

During the 1980s, we used the Michigan Model to analyze a variety of issues, including the effects of changes in exchange rates, domestic tax/subsidies and tariffs, input-output technologies, and the structure of protection. We also used the model, in collaboration with Bob Staiger, to analyze the role of U.S. and Japanese factor endowments and factor contents in the context of the Heckscher-Ohlin trade model. Further, we carried out some modeling studies of international trade in armaments in the late 1980s and early 1990s.

Around the mid-1980s, Drusilla Brown began working on a new version of the Michigan Model that embodied developments in the “new trade theory,” which included the representation of monopolistic competition and product differentiation in manufacturing and services firms, economies of scale, and product variety, as well as new data and parameters. This new version of the Michigan Model was first applied by Drusilla and me to the U.S.-Canadian Free Trade

Agreement that became operative in the late 1980s. Then, in the early 1990s, we enlisted Alan Deardorff to work with us in applying the model to analysis of the North American Free Trade Agreement (NAFTA) that was being negotiated. We were commissioned by the U.S. National Commission on Employment Policy to use the model to analyze the economic effects of NAFTA and to calculate the size and patterns of U.S. employment disruption and wage losses, and the budgetary implications of adjustment assistance for displaced workers. Once again, our modeling results suggested small absolute and relative changes in U.S. trade and employment and small budgetary needs for adjustment assistance. Our results were thus a far cry from the “giant sucking sound” that Ross Perot was predicting about NAFTA during the 1992 presidential campaign.

In the years that followed, we expanded the database of the Michigan Model to include sectoral estimates of services barriers. This was important insofar as these barriers, which included domestic regulations, yielded much larger welfare gains than merchandise trade liberalization because the services barriers were considerably higher than the tariffs on merchandise trade. We also had occasion to use the Michigan Model to do a series of studies of bilateral and regional preferential trading arrangements (PTAs) for the U.S. and partner countries and to compare these results with the effects of multilateral liberalization. The computational results of these PTAs were again small in absolute and relative terms for the U.S. but somewhat larger particularly for the partner developing countries. There was some evidence of trade diversion, but it was not substantial. A message in this research was that the potential benefits of multilateral trade liberalization were estimated to be many times greater than the benefits of the preferential arrangements.

With the new century, Alan Deardorff and Drusilla Brown were turning their attention to other topics of research, and I had occasion to enlist the collaboration of Kozo Kiyota, a young Japanese economist who had obtained financing to work on modeling issues with me in residence at the University of Michigan. We concentrated especially on updating the database of the Michigan Model and using it to analyze a variety of PTAs especially for the U.S. and Japan, with results that generally paralleled those found in the earlier modeling work mentioned.

Social Questions

Beginning in the mid-1990s, my research interests were shifting towards social questions and issues of U.S.-Japan economic relations. In a 1996 paper, Drusilla Brown, Alan Deardorff and I explored the theoretical aspects of trade and labor standards, and we later did a paper on child labor. I also published some papers on my own, one of which was awarded first prize of \$10,000 in October 1998 in an essay contest on the topic, "Labor Standards and Income Distribution and Their Relation to Trade," sponsored by the Institute for the Integration of Latin America and the Caribbean (INTAL). In 2000, Deardorff and I published an edited, conference volume, *Social Dimensions of U.S. Trade Policies*. In 2007, Drusilla Brown and I published an edited volume, *The WTO and Labor and Employment*. Our most recent collaboration was a 2011 conference paper, "Labor Standards and Human Rights: Implications for International Trade and Investment," jointly authored by Brown, Deardorff, and myself.

In my capacity as the general editor of a University of Michigan Press series of Studies in International Economics, I had occasion to publish a book by Andrew G. Brown entitled *Reluctant Partners: A History of Multilateral Trade Cooperation, 1850-2000*. Brown was a retired UN staff economist, living in Wellfleet on Cape Cod, where I had a summer home. We

began meeting regularly in the summers and found a lot of interests in common, which we later pursued in a number of joint papers on issues of fairness in the global trading system, global market integration and national sovereignty, and trade agreements and international labor standards. We still maintain close contact and correspond frequently on developments in the international economy.

Foreign Lecturing and Modeling Projects

As already mentioned, I was a Fulbright Scholar in the Netherlands in 1958-59 studying econometrics and had a Ford Foundation Faculty Fellowship at the Banca d'Italia in 1964-65 to do research on Italian export-led growth. I later had a series of grants from the U.S. State Department to lecture in Japan (1973, 1977, 1985), Surinam and Barbados (1977), India (1980, 1990), Spain (1990), Hong Kong (1985), Indonesia (1985, 1990), Turkey (1985), Sri Lanka (1990), and Malaysia (1995). I lectured mostly on issues of trade liberalization and computational modeling.

In the course of my visits to India, I established contact with the National Council for Applied Economic Research (NCAER) in New Delhi and gave a presentation on the Michigan Model. This led to collaboration with the NCAER staff to develop a version of the Michigan Model for the Indian economy that was designed to study the economic impact of the process of liberalization that began in the early 1990s. We published a book in 1998, *The Impact of Trade and Domestic Policy Reforms in India: A CGE Modeling Approach*, coauthored by Alan Deardorff and myself together with Rajesh Chadha and Sanjib Pohit of the NCAER staff. The India model has continued to be used under Chadha's direction to provide computational estimates of India's trade and related policies.

In the mid-1990s, we were commissioned by the United Nations Development Programme (UNDP) to do a modeling study of a free trade agreement (FTA) between the European Union and Tunisia. The Tunisian Ministry of Foreign Affairs was particularly concerned about whether the FTA would engender a significant inflow of foreign direct investment (FDI) from the EU. We adapted the Michigan Model to incorporate FDI and found, to the disappointment of the Ministry, that our model suggested only relatively small FDI inflows. There was some concern expressed about the accuracy of our modeling results. Nonetheless, it turned out, following the implementation of the FTA, that the FDI inflows did not materialize as had been hoped.

In 2007, I traveled to Ethiopia on two occasions as a member of a World Bank team to study the Ethiopian financial sector in connection with Ethiopia's application to join the World Trade Organization. Since the Ethiopian financial sector was primarily under government regulation and operation, the main issue was the extent to which Ethiopia would have to liberalize its financial sector in the course of the WTO accession process. The study that I directed, jointly with Kozo Kiyota and Barbara Peitsch, attempted to measure the potential benefits of financial liberalization to Ethiopia using proprietary data and making comparisons with the liberalization experiences of other developing countries. But, in the end, the results and recommendations of our study were resisted by the pertinent government agencies even though we had received support in meetings with a number of Ethiopian private sector firms. Needless to say, this was a humbling experience in showing the political constraints on economic analysis and policy recommendations.

In retrospect, I learned a great deal from the contacts and experiences in my foreign travels, lecturing, and projects.

U.S.-Japan Economic Relations

Together with my Michigan colleague, Gary Saxonhouse, we obtained a series of grants beginning in 2000 from the Japan Foundation Center for Global Partnership and carried out a program of research and book publications subsequently, involving both U.S. and Japanese scholars on issues and options for U.S.-Japan trade policies, Japan's economic recovery and the lost decade, and newly evolving patterns of international trade. Saxonhouse was one of the leading world scholars on the Japanese economy. His remarkable accomplishments and influence were cut short by his untimely death in November 2006, following a battle with leukemia. In his honor, I edited two volumes of his selected papers together with Hugh Patrick and Gavin Wright entitled *The Japanese Economy in Retrospect*, which was published in 2010.

Undergraduate and Graduate Teaching and Supervision

For many years, I taught both undergraduate and graduate courses in international trade and international finance and helped to organize the graduate Research Seminar in International Economics. I also taught a junior-year honors seminar for a number of years. I didn't find the undergraduate teaching particularly satisfying because of the large class enrollments and limited personal contacts with the students. An exception here was the junior honors seminar that brought together the best economics majors in a small group setting that made it possible to read and discuss in depth a variety of interesting economics articles and books and to provide writing opportunities for the students. Similarly, the graduate courses and the Research Seminars were also very stimulating and provided valuable learning opportunities both for the students and myself. The weekly meetings of the Research Seminar were devoted to presentations of papers

by faculty members and invited speakers, and presentations of graduate-student dissertations in process.

As mentioned above, I have always looked back to my Columbia University days when I would meet regularly with Ragnar Nurkse to get feedback on my dissertation in progress. This experience motivated me to play a proactive role with the Michigan graduate students at the dissertation stage to give them feedback on the content and, if needed, the rewriting of their chapters. In my nearly five decades at Michigan, I served as chairman or as a member of 80 Economics dissertation committees on topics in international trade and finance.

Looking Back

As I reflect over years past, I consider myself truly fortunate for the working relationships that I developed. I am especially grateful to Ragnar Nurkse for his guidance and personal interest in my graduate student research. Some of the other individuals who supported and encouraged my work in the early years include Elliot Zupnick and Harry Johnson. During my career at the University of Michigan, my involvement in working with Ed Leamer was a high point in the late 1960s. Thereafter, I received endless benefits in my collaborative work with Alan Deardorff, and later with Drusilla Brown, Kozo Kiyota, and Andrew Brown.³ These relationships greatly enhanced my understanding of international trade and finance and contributed directly to my numerous individual and jointly authored publications. This is true also for my relationships with the many students whom I taught and supervised. I owe a great

³ I had occasion, together with Drusilla Brown and Bob Staiger, to organize a festschrift for Alan Deardorff that was held at the University of Michigan in October 2009 to mark his 65th birthday. I have edited the festschrift proceedings, which include reflections by many leading trade economist on Alan's contributions and reprints of his significant individual and jointly authored publications in a book published in 2011. My 2009 book, *Globalization and International Trade Policies*, contains many of my collaborative and jointly authored papers.

deal, furthermore, to Judith Jackson for her devoted and able assistance for over three decades with manuscript preparations, conference organizing, and course materials. She has been indispensable in keeping the Michigan research engine going.

I was honored in 1994 that some of my former students, Ed Leamer, J. David Richardson, Peter Hooper, and Keith Maskus, organized a festschrift for me. While a festschrift is an occasion to pay compliments to the honoree, I think it may be fitting nonetheless to refer to some of what the late Bob Baldwin (<http://www-personal.umich.edu/~rmstern/baldwin.htm>) said in his keynote speech at the festschrift concerning what he thought were my signal accomplishments and influences:

“The important point about Bob's research is not so much the particular topics on which he has written but the general approach that he has taken. From the beginning, Bob got it right. Somehow he realized that the period in which his career would take place was the age of empirical economics. I don't know just what the status of the computer was at the time he began his career, but he started right out by testing various hypotheses empirically. It is apparent that he appreciated early the importance of applying sophisticated statistical techniques to gain important empirical insights. This appreciation of applying sophisticated econometrics and utilizing the new computer technology to analyze important empirical and public policy issues is what, in my mind, uniquely characterizes his career. Further, he has passed this approach on to his students. Empirical work in trade is widely followed today, but let me point out that, in the 1960s and 1970s, it was not. In their book on *Quantitative International Economics*, Bob Stern and Ed Leamer were way ahead of the rest of us in appreciating what was unique

about research in the modern era. Theory is still important, but I am convinced that historians will look back and characterize this period as one in which empirical economics came of age and began to dominate the discipline.

A major accomplishment of Bob's research career has been the Michigan computable general equilibrium (CGE) model, which he developed along with Alan Deardorff. This is easily the most important CGE model with international economics and has had tremendous influence, not only in academic economics, but also in the policymaking field. For every major international economic policy in recent years, this model has been very important in influencing what economists and policymakers think about the economic impact of the policy. One additional benefit from the model is that it has encouraged its developers to think even more deeply about trade policies and the various institutions dealing with these policies. In my view, Stern and Deardorff have gone beyond being outstanding empirical economists and are now also wise in the ways of trade policy in a real-world setting.

Now let me move away from Bob's accomplishments through his writing and discuss another important feature of his career, namely, his ability to attract an extraordinarily talented group of graduate students. He has done this consistently over the years. One can look at the students of other trade economists, not just contemporary ones, but leading trade economists over the years, to realize how extraordinary his accomplishment is. So what is the secret of his success in attracting top-notch graduate students? Well, after talking to several of them, I think I've figured it out. Bob has followed what I would call the

big-time football model in building up his teams of outstanding graduate students-
-a model he must have become familiar with over his many years here at
Michigan.

How has Michigan managed to build up and maintain consistently an outstanding football team? The first point to make is that its coaches don't get their players just by waiting for them to walk in and express interest in playing. The coaches go out and recruit their players. And that is what Bob seems to do. He identifies the top graduate students, not just those who have wandered into trade but those in other fields (Ed Leamer was recruited from econometrics) and goes after them to write theses in the trade area. But how is successful recruitment done? Well, first of all you've got to have some scholarships to attract your recruits. And this is where the Stern-Deardorff research organization comes into play. These two guys have used Bob's MBA knowledge to put together a highly efficient, smooth research operation that must be the envy of many private research firms. They put out first-rate research proposals involving funding for graduate students that seem to be better than the rest of us can do. I know this from personal experience in competing against them for research funds. And they have found places to tap for research funds that I have never heard of. Thus, they always seem to have the funds to offer research assistantships to the top graduate students that they go after.

But, successful recruiting is much more than just having attractive scholarships. A key question in the mind of a recruit is whether the particular team he joins will be useful in helping him get into the pros after he or she

completes his or her college career. And Bob is especially helpful on this point. First, while they are on the team, he makes sure that their names get around to the pros. Part of the funds he raises are used for the series of working papers that come out of the Research Seminar on International Economics. So a graduate student knows that if he gives a good paper in the Seminar, it will be sent around to all the major academics and non-academics in the field. Secondly, a prospective recruit sees that Bob often write papers jointly with his students so they can rely on his name to help them get published early on after they leave. Third, Bob also uses the funds he raises to hold a large number of conferences for which he is able to attract the top people. He invites his former students to give papers at these conferences, so they get further exposure.

So is it any wonder that Bob has been so successful in attracting outstanding graduate students? He has built a big-time research organization that not only recruits but ensures that members of the team get the best opportunity to make the top professional ranks after they leave. None of the rest of us has come close to operating such an organization as the Michigan research machine.”

I am of course grateful to Bob Baldwin for his foregoing festschrift remarks on my behalf since he has captured my inner motivations, goals, and accomplishments.

References

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