CHAPTER ONE

Introduction: Understanding Economics and Economists

Economists have become ubiquitous. You turn on the TV news and you hear from them—economists say inflation is slowing; economists question the tax cut proposal; economists predict that a recession is likely. You pick up your newspaper or newsmagazine, and you read about economists.

As with many things ubiquitous, there is an ambiguity about what precisely an economist is, and what it is that he (most economists are male) is supposed to know. Thus, nowhere will one find a specified body of knowledge that an economist must know to call himself or herself an economist. In fact, unlike in law or medicine, where there are licenses that one must have to be called a lawyer or doctor, anyone can simply put the suffix "economist" after his name and call himself an economist.

One way of specifying who is an economist might be to consider who studies economics as an undergraduate. Each year approximately 25,000 undergraduate students (about 2 percent of all college seniors) major in economics.[1] The large majority of these majors have no intention of becoming economists; they are planning to go into business, with banking, finance, and general management the most popular fields. So, undergraduate economics majors do not, for the most part, consider themselves economists. Most are majoring in economics because business is not an acceptable liberal arts major, and the undergraduate economics major is a surrogate for a business major. Another way of limiting the number of economists might be to restrict it to members of an economic association. That wouldn't work either, however, since anyone can join these associations—there are no restrictions. Pay your dues and you are a member.[2]

So it seems that anyone can be an economist. The lack of formal requirements about who can call himself or herself an economist, however, masks another reality by which individuals who are economists judge whether or not someone is a "true" economist. For example, were an undergraduate student to ask an economist how to become an economist, he would tell her to go to graduate school. She might demur, asking, "Wouldn't it make more sense to go to Wall Street and learn how markets work?" Getting firsthand experience may sound like a good idea to her, but most economists would briskly dismiss the suggestion. "Well, maybe I should get a job in a real business—say, turning out automobiles." The answer will be "no" again: "That's not how you learn economics." She might try one more time. "Well, how about if I read all the top economists of the past—John Stuart Mill, David Ricardo, Adam Smith?" Most economists would say, "It wouldn't hurt, but it probably won't help." Instead, he would most likely tell her, "To become an economist who is considered an economist by other economists, you have to go to graduate school in economics." So the reality is that, to economists, an economist is someone who has a graduate degree (doctorates strongly preferred) in economics.[3] This means that what defines an economist is what he or she learns in graduate school.

A Profile of Economics Graduate Students

To get an idea of who becomes an economist, let's consider a profile that Wendy Stock and John Siegfried compiled.

As you can see, each year somewhat more than 900 Ph.D.'s are awarded, a rate slightly higher than in the past. Assuming the rate of production has averaged 800 over the past forty years, and that the average economist works for approximately forty years, and that few economists trained outside the United States come to work in the United States, and that 20 percent of the students who get Ph.D.'s do not stay in the United States, then there are about 25,000 Ph.D. economists currently in the United States. The composition of this group is constantly changing, and each year a bit over 2 percent of the economists are replaced with younger cohorts, which means that over a decade the

nature of economists is likely to change considerably, with new graduate students replacing retiring economists.

This table gives you a pretty good sense of who the graduate students are who are replacing the old economists. The first thing to note is that the percentage of U.S. citizens in graduate economics programs is declining; economics, like many of the sciences, is becoming a field dominated by non-U.S. citizens, the majority of whom stay in the United States to work. Notice also that while the percentage of women is increasing, the economics profession remains a primarily male profession. Another point to note is that most students finance their education with fellowships, along with research and/or teaching assistantships, although about 30 percent finance it themselves.

Graduate economics students attend one of the over one hundred Ph.D. programs in economics within the United States. The group as a whole, however, isn't the subject of this book. Instead, the book's main focus is the graduate students at elite graduate schools. These elite schools are disproportionately influential, and the students at these schools are destined to become the future elite of economics. This follows, since schools seldom hire from other schools ranked significantly lower than themselves, which means that this group will populate the top schools in the future and decide how economics is done.

Schools' rankings are generally well understood by economists, and conversations with newly minted economists often begin with, "Where did you get your Ph.D.?" Upon hearing where, the questioner will make a judgment about the quality of one's training and whether or not one should be considered a serious economist. (It's a bit like two dogs marking out their territory.) If you are planning to go on in serious economic research, you had better be able to answer that question with "I went to (fill in the name of one of the twenty of the top-ten-ranked economics graduate programs)." Otherwise you don't pass the initial sniff test.

Notice that I said "twenty of the top ten." The reason is that there are many different ranking systems. Developing rankings, and discussing the advantages and disadvantages of various rankings, is an industry in itself. There can be survey rankings (done in a variety of different ways), publication-based rankings (with publications weighted in a variety of different ways), and citation-based rankings (with citations weighted in a variety of different ways). Each of these

Table 1–1: A Profile of Doctoral Training in Economics in the United States: 1977, 1986/1987, 1996, and 2001

Measure	1976–1977	1985–1986 or 1986–1987	1995–1996	2000–2001
Number of doctorates awarded in economics and econometrics	838	861[a]	1,008	930
Percentage U.S. citizens	67.3	55.7[a]	42.9	38.0
Percentage female	8.7	19.3[a]	22.4	28.0
Percentage with B.A./B.S. degree in economics	63.6	59.7[a]	57.8	56.6
Number of full-time first-year graduate students (including master's)	2,886	2,584[a]	2,466	2,562
Number of full- and part-time graduate students (including master's)	12,063	12,830[a]	12,080	11,340
Number of full-time graduate students in economics (including master's) at doctoral institutions	9,938	10,473[b]	10,991	10,755
Median years to Ph.D.	5.7	6.3[a]	6.8	7.0
Type of support for full-time graduate students at doctoral institutions (percentage distribution)[c]				
Fellowship and traineeship	18.4	15.3[a]	18.8	19.4
Research assistant	14.5	11.9[a]	11.3	13.3
Teaching assistant	25.6	30.9[a]	28.9	31.5
Other	41.5	41.9[a]	41.0	35.8
Source of support (percentage distribution)				
Federal	7.4	3.1[a]	4.1	4.6
Institutional	44.9	52.4[a]	52.9	59.6
Other	11.5	9.4[a]	7.8	6.8
Self	36.2	35.1[a]	35.2	28.9

Table 1–1 (*cont.*)

Measure	1976–1977	1985–1986 or 1986–1987	1995–1996	2000–2001
Postdoctoral plans of new Ph.D.'s (percentage distribution)[c]				
Employment	90.5	85.4[b]	82.9	82.9
Postdoctoral study	3.9	6.0[b]	9.3	8.4
Postdoctoral status unknown	5.6	8.6[b]	7.8	8.7
Percentage accepting employment outside United States	16.2	19.6[b]	30.3	26.2

Sources: W. Lee Hansen (1991 tables 1 and 2) and the NSF WebCASPAR database system.

[a]1985–1986.

[b]1986–1987.

[c]Distributions do not always sum to 100 percent because some categories are not reported.

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rankings can be measured on a per-faculty or a total-number criterion (using various alternative measures of what is determined a faculty member). With so many ways of creating a ranking, there are many different possible rankings. Most possible rankings are explored and published, since college administrations often determine the level of support they will give a program on the basis of these rankings.[4]

Where there is general agreement about rankings is about the schools at the top, and six of the seven schools that I included in this study—Harvard, Stanford, Chicago, MIT, Princeton, and Yale—are consistently ranked in the top ten. (They are ranked as the top six in a recent survey, and the seventh school in this study—Columbia—is ranked twelfth; Thursby 2000.) These elite schools compete vigorously for top students. They invite accepted candidates to campus, wine and dine them, have them meet with faculty members, and work hard to sell their school to them. Except at Chicago, which follows a somewhat different model, the large majority of students at these schools get fellowships that provide them with as much as $30,000 to $35,000 a year in addition to tuition and fees, often guaranteed for three years. The large majority of the students who start the programs at these elite schools finish the programs.

Once they graduate, these students tend to dominate the profession: they are the majority of members on American Economic Association (AEA) boards, and they are the economists called upon when a reporter is seeking economists' view on an issue. Of course, not all of these graduates manage to remain in the elite, but it is from this group that the majority of the elite come. How large is this elite? There are probably around 100 to 150 of the definitely elite, 700 to 800 of the elite, and another 1,500 economists might be seen as peripheral elite. All have Ph.D.'s, and most have academic appointments, although some move back and both between academia and government.

The Graduate Economics Program

It generally takes a bit over five years of graduate study for students to get a Ph.D.[5] In the first year or two of most Ph.D. programs, students take courses in micro, macro, and econometrics, with some electives mixed in. At elite schools each of the core courses is usually taught by two, or sometimes three, graduate professors, each concentrating on

his or her area of specialty. These three courses—micro, macro, and econometrics—are known as the core, and they are what define the common training of economists. At the end of these courses, an exam, generally made up by the professors teaching the course, is given, and successful completion of those exams means successful completion of the core. At some schools the core exam is separate from the final exam for the course, but that separation is decreasing. Also, in the past, the department, not the professors, made up the core exam, but that too has changed. Thus, the professors teaching the core have enormous power in determining what an economist is in the sense that they determine what common core is taught.

After completing the core, graduate economics students move on to field courses, and they usually have to pick two areas of specialty. Often, at the end of the field courses, there are field exams, which end the formal required course work. After passing the field exams, students become known as ABD's (All But Dissertations). Thereafter students work on their dissertations, which generally can take anywhere from one to three years. During this time students typically work part-time as teaching or research assistants, attend seminars, and work on publishing papers. Often, students will write three essays as their dissertation, to make the translation into journal articles easier. (Journal articles, not books, are most important to academic economists in advancing in their careers.)

In their final year of study ABDs go on the job market. For the majority of graduate students there is a definite pecking order of desirability among jobs: (1) high-ranked graduate programs; (2) middle-range graduate programs; (3) international agency or top government (especially central bank) programs; (4) top undergraduate programs; (5) lower-range graduate programs; (6) lower-ranked undergraduate programs; and (7) private business—although, depending on a graduate's specific field, there will be some shifting among the lower-numbered choices in the order of preference. This pecking order reflects views inculcated during the student's graduate school training. Graduate programs at the elite schools are designed to prepare students to do academic research in economics at other graduate programs, and departments generally rank themselves on how well they do in placing their students into academic jobs.

CHAPTER ONE

What Academic Economists Do

Academic economists teach, do extensive committee work at the college or university that employs them, and carry on "research," which generally takes the form of writing articles. Books tend to count for little in economics department rankings. To provide outlets for all the articles, there has been a steady increase in the number of economics journals, many of which have also become available online: while there were about 200 journals in 1980, today the online database EconLit provides access to more than 600 journals. Moreover, the focus on articles is different from that in other social science disciplines, such as history and political science, where researchers generally write books rather than articles. Writing articles is, however, common in physics and the other natural sciences. Most elite economists judge other economists by their journal article output. In calculations of department rankings, books are seldom even counted.

Paul Samuelson, a Nobel Prize–winning economist and perhaps the dominant figure in economics from the late 1930s through the 1960s, captured an important aspect of the profession when he said that it is not for the applause of the public that economists work, but for the praise of their peers. Most economists at the elite level are primarily concerned with what other elite economists think of them, as opposed to whether they are looked on positively by the broader public. Elite economists are more likely to stay within academic institutions and use their skills to advance the knowledge of their peers. A few are hired as consultants, textbook writers, or court witnesses, but devoting too much time to such activities is looked down upon by the profession. Economists who dedicate their careers to such outside services for pay are treated with suspicion.

The Original *Making of an Economist*

In the mid-1980s, Arjo Klamer and I did a study of these elite graduate economic programs that was much discussed in the profession and widely reported in the popular press. That study did not paint a flattering picture of graduate economics education. It was a picture of a

profession lost in pure theory and technicalities, with little focus on ideas. There was a sense that economics dealt with mind games, not real economics problems. For example, in our earlier introduction, Arjo Klamer and I cited numerous views that were critical of economists, and quoted Robert Kuttner, who wrote, "Departments of economics are graduating a generation of idiot savants, brilliant at esoteric mathematics yet innocent of actual economic life."

Whether that assessment was right or not (many mainstream economists argued that it was quite wrong and, in any case, was far too simplistic), it was an assessment shared by numerous people at the time. It was the buzz, especially among critics of the profession, that economics had gone off the deep end on theory. The feeling was that the teaching of graduate economics had lost something that made economics special—that it focused too much on abstract theory, that it focused too much on modeling for the sake of modeling, and that there was too little empirical grounding for the theoretical work that was done. This situation existed in micro because many of the graduate micro courses were still digesting Arrow/Debreu general equilibrium theory, and in macro because the New Classical revolt against Keynesian economics seemed to be pulling macro along the same pure analytic corridor.

As with much successful research, a lot of the success of our original study was due to "right place/right time." We were not alone in our beliefs: the beliefs were shared by a large number of economists, many of whom were not critics of economics but were mainstream economists. The movements for change had already occurred. A new journal, the *Journal of Economic Perspectives*, was being created by the AEA, whose purpose was to provide an outlet and discussion forum for less esoteric research, and there was much discussion among economists over coffee or drinks about the changing way in which economics was done.

Our actual collection of data started in 1983, which led to a paper entitled "The Making of an Economist," written in 1985 and published in 1987 in the newly formed *Journal of Economic Perspectives*.[6] The paper caught on and was much discussed long before it was published. The results in it gave people some numbers to focus on and to put the issues in perspective. Our results, however, were hardly scientific. The survey was far from inclusive—we covered only a small group of elite

schools—and there were many aspects of graduate economics education that it did not touch. In other words, it was a decent conversation piece, but it was not a stepping stone for something actually to be done.

Our initial paper also left out much discussion of implications. We did so on purpose—to let the numbers speak for themselves and not let our critical views of the profession color the way in which the numbers might be interpreted. Our book, by contrast, was much more extensive: it included not only the initial study but also the conversations that we had had with the students. At the end of that book both Klamer and I reflected on the implications. Our reflections were quite different. Klamer concentrated on the lack of policy relevance; I concentrated on incentives for workmanship.

The COGEE Report

Since there were a number of economists who felt that something should be done, a consensus developed that a more substantive study might actually bring about change. It was for this reason that the Commission on Graduate Education in Economics (COGEE) was set up by Robert Eisner, then president of the AEA. The charge to the commission was to "take stock of what is being done (in graduate education), what results we are getting. . . . In all of this . . . the concern is, of course, very largely with the direction of research and focus of resources." In short, the commission was to look more deeply at graduate education than Klamer and I had done, and to do it right.

While there was a general agreement that what Arjo and I had reported was, in general, correct, our work was certainly not systematic. (We had financed our limited surveys ourselves, with help from small grants from our schools.) COGEE was a much larger fact-finding effort, with substantial NSF funding. It was felt that a commission made up of leading economists, basing their assessment on a more systematically structured study than ours, would provide more insight into what was really going on, and, if it was felt that change was necessary, could better articulate those changes that were necessary. It was also felt that, if changes were necessary, the commission would carry more weight in bringing them about. Thus, COGEE was appointed with representatives of the top grad-

uate schools, and one government economist.[7] Lee Hansen oversaw the statistical work that underlay the commission's project, and he directed publication of a number of supporting studies for the report.

In its makeup, the commission was broadly sympathetic to reform, although there was a diversity of views represented, as necessarily had to be the case if the commission was to be seen as representative of the mainstream economics position. To reduce political infighting it was decided that the report would not be an official report of the AEA, but instead a report that reflected the views of the members and nothing more. Still, given the distinguished stature of the commission members, it was felt that the report would make a difference.

Before I saw the commission's report, I predicted, in print (Colander and Brenner 1992) that the report would find that all was generally well with the profession, but that there were some areas for concern. I was partially right. Toward its beginning, the report announced that "the current state of the profession is healthy." I was pleasantly surprised, however, by the degree to which the commission considered the concerns of critics of the profession, and by the relatively strong (for a commission) recommendations that it made.

The commission's recommendations, published in September 1991 (Krueger et al. 1991), were the following:

1. Reasonable requirements in mathematics, statistics, and economics be established.
2. Remedial courses be offered to those who have deficiencies in economics, mathematics, or statistics.
3. Core courses be taught in a way that can balance breadth and depth, with sufficient attention to applications and real-world linkages to encourage students themselves to start applying the concepts.
4. The core should be regarded as a departmental "public good" and its content be the concern of the entire department.
5. Field courses should attempt to include more empirical applications.
6. Greater attention should be given to writing and communication skills.
7. Efforts should be made to ease the transition from course work to dissertation.
8. More differentiation should exist among departments.

Response of the Profession to the COGEE Report

The COGEE Report was greeted with formal silence by the profession.[8] I am told that Anne Krueger, the head of the commission, said that if

a pin had dropped at the same time as the report came out, the pin landing would have sounded like thunder. That may be a bit of an exaggeration, but there was no groundswell of change caused by the report. In 1999, I surveyed the members of the COGEE Commission about the changes brought about by the COGEE Report. The conclusions were the following:

1. No school changed its mathematical requirements in response to the commission's report, nor did any school lower its mathematical requirements. If anything, mathematical requirements have been raised. (The majority of the commission members felt that at whichever institution he or she represented the level of mathematical sophistication needed by incoming graduate students had increased.)

Moreover, the underlying culture continued to deemphasize reading the literature and studying economic issues outside a formal technical model approach. History of thought and history of economics requirements declined further. Moreover, graduate school culture lets students know that they should deemphasize these courses and focus on the "hardcore" courses. For example, at one top-ten school that had a core economic history requirement, I was told that either the requirement was overlooked or students were told to minimize their studying in the course to free up time for their other core courses.

2. Most schools already offered remedial courses in mathematics, so there was little change here. Most of these courses are given in August preceding the first semester. As Alan Blinder remarked, "We have always had 'remedial' math. (In fact, it is pretty advanced.) We still do." The content of these remedial courses has changed to a larger focus on game theory and dynamics to reflect the changes in the math used in the core courses—but not because of the report.

No school had a remedial program in economics before the COGEE Report, and none implemented one. This is the case even though many new graduate students have taken few, if any, economics courses. (Some have taken none.) It is still possible to do exceptionally well in the first two years in economics graduate programs without having taken undergraduate economics. For those students without an undergraduate degree in economics, this means that their economics training consists of the economics content of the core courses, and what they have learned on their own. When I asked one COGEE member about this,

I was told that most of the graduate students serve as TAs in a principles course, and they learn economics there.

3. At most schools, the emphasis on technique over intuitive application in the core course has remained roughly the same or even increased.[9] When I discussed the issue with graduate students in the late 1990s, some graduate students told me that they were encouraged to think of applying the models they learn. They are told to work on a paper in their first year, but they found doing that difficult because they have not had any in-class training in how to do so.

While the general focus on technique has remained constant, the techniques being learned are changing. Much more game theory is being taught and being made central to the core of the micro courses. This movement toward game theory makes the core more closely applicable to real-world events, since it allows a broader range of assumptions. This change, however, has not been in reaction to the COGEE Report; it has been part of the continuing evolution of microeconomic thinking.

4. The teaching of the core did change, but not to a "public good" as recommended by the commission. Instead it changed to a "subdivided private good." By this I mean that instead of one individual teaching the core course, as was common in the past, core courses are now taught by combinations of two or three professors. Essentially, the core courses now consist of a collection of mini-courses, each focusing on a separate area or modeling technique. These mini-courses are separable in that each professor sets the exam for his or her portion of the course. In one sense, this approach presents the students with more diversity, but in another, it removes any chance that a student might get an overall vision of the subject matter of the course. It increases the focus on the training of techniques. The development of these mini-courses has, in many ways, eliminated the micro/macro distinction, and one school, Stanford, has integrated the two while simultaneously developing departmental guidelines as to what will be taught in the subsections of the core.

To my knowledge, there are no integrative core courses, which provide an overview of economics, given at any top school. History of thought requirements and electives have been eliminated at most top schools, and older professors who took an integrative approach to

teaching are generally assigned to non-core courses. Where such courses still exist, students are discouraged from focusing on them.

5. These is a sense that in field courses there was a slight movement toward more applications.

6. Some commission members said that at their schools more emphasis is being given to writing in workshops. Some schools have developed a second year requirement that each student present a field paper. Alan Blinder summed up the view of many when he wrote, "We keep experimenting with various types of workshops, papers, etc., but nothing works terribly well, and on the whole, it is much the same." So I would judge that attempts are being made to improve writing. These attempts, however, have been ongoing, and are not in response to the COGEE Report.

7. Based on general discussion with graduate professors, attempts are being made to improve the transition from course work to dissertation. One commission member stated that at his school there was more assignment of advisors if the graduate student failed to develop ideas on his or her own. At some schools, workshops and luncheon seminars are required in the third year; these workshops are meant to focus attention of the student on developing a thesis topic. A few years ago the Social Science Research Council started a program, including summer workshops and fellowships, to encourage more focus on intuitive foundations.

8. Among top schools there has been no recognizable movement toward differentiation. If anything, the process has gone the other way. When Arjo Klamer and I did our initial study, there was a significant difference among top schools, reflected in differences in what students believed. These differences often reflected the differing view, of some major professors who taught the core. With recent cross-hires among these top schools, and the division of the core courses into subcomponents, such differences in beliefs among schools are far less noticeable. This is because (1) there are fewer differences in the profession, and (2) even if there are differences, those differences will not be taught to the students because the core courses are divided among two or three professors focusing on the particular sub-area of that course within which they work.

The Changing Face of Economics

So my conclusion is that Arjo's and my initial study, and the COGEE Report, had little direct effect on the profession. However, despite this, the profession has changed. Thus, if our study and the COGEE Report had an effect, it was an indirect effect that is not discernable from the broader evolution of the profession. The studies and the discussion around them become part of the profession's understanding of itself, which causes no specific changes but may change *proclivities* to change the system.

I say this because looking at the profession today, I am convinced that it is quite different than it was in the mid-1980s, when Arjo and I first sat over drinks and lamented the state of the profession. The commitment to theorems and proofs has declined, and there is a much stronger empirical branch of economics. Natural experiments and instrumental variables are now central to an economist's training. Behavioral economics has advanced enormously, and the macro that is done is fundamentally different from the macro that was done in the 1980s; advanced time-series statistics, such as cointegrated structural VARs and calibration, are commonplace, where they were hardly known before. What were taken as requirements of research in the 1980s are no longer requirements in the 2000s; the holy trinity of greed, equilibrium, and rationality has been replaced by a looser trilogy of purposeful behavior, sustainability, and enlightened self-interest. I could extend the list enormously, but there is no need to do that here. My point is simply that economics has changed and will continue to change, making it impossible to call the existing profession neoclassical any longer.

In *The Changing Face of Economics* (Colander, Holt, and Rosser 2004), I argued that these changes have occurred almost imperceptibly; economics changes not by revolution but by slow evolution. This reflects the continual exit of economists through retirement and the continual entrance of economists to replace them. In the fifteen years since the original "Making of an Economist" study, there has been about a 30 percent turnover, and it is this turnover that is changing the nature of economics. Our earlier study had little direct effect on the profession, but it, and the discussion that surrounded it, may have indirectly af-

fected the profession by its effects on the participants of the earlier study, because these participants became the profession. So, in my view, there is no better place to see the changes at the cutting-edge of the profession than through a study of graduate economics education at elite schools. The views of the students at these schools will become the views of the profession in the coming decades, if only by one funeral at a time.