individual experiences and strategies that the institutional complementarities we just observed are achieved, performed, and reproduced in practice and that we, as observers, can identify any logic in them. It is for the next chapters, then, to demonstrate the types of regularities produced by these institutional constellations in each country—that is, to explain *how* they mattered empirically, for economists and economics, in both expected and unexpected ways.

CHAPTER TWO

The United States: Merchant Professionals

> To be an economist in the United States, you have to believe that the market works most of the time. The situation in which markets don't work, or cannot be made to work, is really quite exceptional, and not all that interesting to study. . . . [And] you need a doctorate, preferably from a first-rank university. And to be influential in the profession, you need an appointment at a prestigious university. But the boundaries of who is considered mainstream, and who is not, are enforced quite fiercely.
>
> (Economic journalist, phone interview, May 1999)

American economics arose in the context of the broad institutional patterns described in the preceding chapter—the fragmented and professionally-oriented nature of the state bureaucracy, the regulatory emphasis on market competition, and the disciplinary organization of higher learning. As will be shown throughout this chapter, professionalized social science in the United States emerged simultaneously with professionalized civil service. Consequently, economics was not much constrained by the process of state-building; rather, it was part of it. In America, administrative institutions helped define economics as a specialized professional undertaking based on a skill monopoly. They did so, first, by seeking to anchor their own authority in the ideology of professionalism, and second by bringing professionals into the public domain through a market for policy. As a result, the identity of American economics has remained firmly located within universities, which alone could endow economists with essential skills, credentials and legitimacy; and the academic discipline of economics has retained a considerable degree of intellectual autonomy. In contrast to continental Europe, where economics was incorporated into a generalist form of technocratic expertise dominated by law, American economics developed largely as a technical and self-referential intellectual enterprise, which ultimately gave rise to the strong scientific program that persists today.

Paradoxically, the insulated "ivory tower" character of the disciplinary work of economics in the U.S. context has proved remarkably compatible with a very significant penetration of the world by economic tools and methodologies. In his 1961 presidential address to the American

Economic Association, Paul Samuelson captured this dualism well: "Not for us the limelight and the applause. But that does not mean the game is not worth the candle or that we do not in the end win the game. In the long run, the economic scholar works for the only coin worth having—our own applause" (1962, 18).

Being primarily based in universities, American economists were relatively isolated, and mainly talked with each other. When brought into the midst of political contention (through policy debates, for instance), they were compelled to emphasize their separate status and build up those technical abilities that sustained their legitimacy and impartiality in the eyes of political audiences. The forging of disciplinary strength within academia has supported the profession's jurisdictional power outside of academia and its penetration of society. Part of this influence goes unnoticed: simple economic concepts such as optimization, opportunity cost, or efficiency participate in a form of calculative rationality that has become taken for granted in the various institutions that organize social and economic life. Part of it, however, is much more visible: complex economic tools such as macroeconometric forecasting, financial products, auction designs, and various forms of economic valuation have been turned into large and often profitable industries serving both public and private clients. Hence, contrary to postwar France, where economics' main jurisdiction came to be located within the state, the commercial element in American economics is remarkably well developed, turning many of the discipline's instruments and technical innovations into marketable forms of knowledge. If in France economic knowledge was largely entrenched *within* the state apparatus, in America knowledge cultivated outside of the state would in turn be marketed *toward* it.

This combination of the scientific and the mercantile in modern American economics may seem odd, especially when seen in comparative perspective. The strangeness, however, fades away when the point of comparison switches from "economics elsewhere in the world" to "other professions in the United States." First, as Abbott (1988) has shown, American professions display both a high degree of formalism in their knowledge base and a strong competitive dimension in their mode of operation. This suggests a symbiotic relationship between the strength of the professional system and the strength of the disciplinary system in the American context (just as the weaknesses of both are also symbiotically related in the French context). Second, the commercial dimension of American professionalism is not a given but is partly the product of a historical evolution: according to Steven Brint (1994), the twentieth century was characterized by a movement away from "social trustee

professionalism" toward a form of "expert professionalism" closely connected to the business enterprise. Although this trend in economics has been a global one, it is this chapter's contention that, *in comparative terms*, it has taken place particularly early and has been much more pronounced in the United States.

Forms of Academic Entrenchment

American economics is both an extremely large field and an internationally hegemonic one. From 1969 to 2008, fifty-two out of sixty-three Nobel Prize winners (82.5 percent) have been American, and another seven of the non-American Nobel laureates have taught in the United States for long periods.[1] This pattern of international domination is even stronger today than in the prize's early years. Since 1980 (until 2007), thirty-eight out of forty-four awards (86 percent) were given to U.S.-based professors (though a significant proportion of these were foreign-born). In what looks like a powerful feedback loop, top American economics departments produce the vast majority of the discipline's authoritative work, which further legitimates their hegemony over the rest of the field worldwide.

The relative intellectual homogeneity of American economics itself partly explains this remarkable position. The field is more consensual and cohesive than its neighbors in the social sciences and humanities—among the latter, only philosophy comes close—as well as many hard sciences. Compared with other disciplines, the job market, access to resources, and publication process in economics are also tightly controlled by powerful departments—and increasingly so in recent decades—with sometimes very high levels of self-reproduction.[2] There is little differentiation among graduate programs: a European observer recently said admiringly that "major graduate departments in the United States operate like factories, with production processes reminiscent of assembly lines, with well-defined standards of quality control" (Drèze 2001, 4). Correlatively, the boundaries of what constitutes serious work in economics are fairly explicit, widely shared, and clearly enforced. Technical sophistication—whether in terms of mathematical theory or statistical and econometric work—is a necessary condition for academic excellence, so much so that knowledge of tools generally takes precedence over knowledge of the economy in graduate teaching.[3] Consensus on best scientific practice also extends to substantive matters. As we saw earlier, American economists tend to agree more widely than their colleagues in other countries on fundamental principles, notably free trade, the economic

benefits of technology, and the efficiency of the price system. (This is true even though important differences may persist in opinions about the ultimate goals and effects of specific economic policies.)[4] In all, a striving for a certain "moral purity" seems to permeate the ideology of American economics, which may take many different forms, such as the exclusion of laymen, the boundary against practical education, the defensive attitude toward politics, and a homogeneous intellectual and methodological stance.

The reasons for this character are institutional, political, and cultural. They relate to the competitive organization and geographical dispersion of the American university system and its articulation with other institutions in American society. Historically, they also relate to the power of business elites, to the fear of political radicalism, and to the religiously inspired cultural tension between the worthy and the unworthy that finds its resolution in a culture of calculability where everything and everyone can be measured (and thereby compared).[5] If American economics harbors many churches and is filled with plenty of fierce theoretical and policy struggles, it has one dominant religion—what I later call "applied quantification."

The American University and the Rise of Economics

It is, however, with a different kind of religious foundation that we will begin this narrative. By and large, the purpose of higher education in pre–Civil War America was to teach religious piety and discipline. The vast majority of faculty were involved in preaching and missionary work. Introduced in 1817 in the northeastern colleges, political economy was regarded as nothing more than a minor branch of moral philosophy. The first American economics textbooks were written by clergymen,[6] and a religious understanding of economic activity was pervasive. Capitalism and the laws of political economy were thought to be in harmony with the laws of God and consistent with the higher purpose of moral elevation.[7]

The creation in 1865 of the American Social Science Association (ASSA) "by a group of New England gentlemen educators and men of affairs who wished to study and find solutions to various social problems" (Coats 1993b, 353) marked the first step toward the assertion of a new model of authority, as Haskell (1977) has beautifully shown. The study of society moved away from religion and toward the systematic collection and evaluation of factual information, mainly for the purpose of social reform. Through its association with public commissions and civil service reform, the ASSA served as an institutional vehicle for the aspirations of rising professional groups—doctors, lawyers, and college

teachers—seeking to extend their competence, as well as local notables trying to achieve social prestige and recognition.[8] In both form and content, the ASSA was thus a "predisciplinary" organization. Even though one of its divisions was called Economy, Trade and Finance, the community of inquiry it represented remained loose and did not yet possess a distinctive disciplinary identity.[9]

Within the narrow but growing community of teachers, American economic discourse did not gain much coherence (aside from a generally uncompromising commitment to laissez-faire) until the end of the nineteenth century.[10] Homegrown theory was virtually nonexistent—in economics as elsewhere (Tocqueville had already noted a certain distaste for abstract thought among Americans). The small size and geographical dispersion of American colleges were certainly major factors in this localism and "sectionalism" of American academic culture, in economics as in every other field.[11] Between the 1850s and the 1890s, Americans seeking advanced training went to Germany for their doctoral education; there they were exposed both to the historicist stream of thought prevalent in German social science and to a model of academic training centered on the research seminar. Upon their return to the United States, these "economists" became actively involved in higher education reform and in establishing an institutional base for the field of political economy. The recent creation of universities and graduate schools (like that of the other modern subjects that were to become the social sciences) and their open and as of yet unsettled internal structure constituted a unique opportunity for the incorporation of the new discipline. The number of specialized teaching posts in political economy expanded rapidly, from three chairs in 1880 to fifty-one in 1900.[12]

With the rise of the research-oriented university, the ASSA gentry-dominated model of advancing knowledge came to face the growing challenge of a younger generation of practitioners who were operating from purely academic bases, and it began to decay rapidly. In contrast with their European counterparts whose elite situation was a given, grounded in history, class, and state patronage, American university professors had to achieve their own legitimacy and social standing in a culture that had never been strongly deferential to intellectual authority.[13] They relied on professionalization to accomplish that goal. The creation of specialized disciplinary associations such as the American Historical Association (1884) and the American Economic Association (AEA; 1885), which both emerged from a split of the ASSA, marked the advent of a different approach to the nature and role of the social sciences. While initially retaining the reformist orientation of the ASSA (a point I discuss at some length later), the new organizations were strongly

committed to "redefin[ing] social science as a university-based, research-oriented enterprise" (Haskell 1977, 166). As disciplinary organizations, they were designed to protect and further the interests of the new *academic* professionals against the all-encompassing claims of traditional elites represented by the ASSA. For instance, the yearly meetings of the American Economic Association soon turned into a forum for the presentation and discussion of academic papers. Professional publications, often linked to particular universities, followed almost immediately: in 1886, Charles Dunbar at Harvard launched the *Quarterly Journal of Economics,* and in 1892, J. Lawrence Laughlin at Chicago founded the *Journal of Political Economy.* In 1911, the American Economic Association started an in-house journal, the *American Economic Review.* Within the time span of a few decades, disciplinary economics was born in America.

The expansion of the American university system thus created an opening for the rapid institutionalization of economics and its transformation into a full-fledged scholarly enterprise. Certainly the university revolution in England, which led to the establishment of the London School of Economics and the commercial faculties at Birmingham and Manchester at the end of the nineteenth century, bore some resemblance to the American situation. Yet the existence of an already entrenched institutional hierarchy dominated by Oxbridge and the small size of the British university system at the time meant that economics still had to fight its way against established academic guilds and colleges in order to win a position. By contrast, in the American context, the social sciences were at the vanguard of the revolution in higher education and were thought to embody the highest moral purpose on which the new academic institutions claimed to be built. University leaders (presidents and boards alike) often favored them as "secular substitutes for religion" and saw in them a continuation of the old courses in moral philosophy.[14] The "moral" potential of economics and other social sciences thus made them a privileged medium for the assertion of Progressive principles—and indeed, institutionalist economists were often deeply involved in the moralizing enterprises characteristic of the Progressive period (such as anticorruption, the campaign against child labor, and Prohibition) in addition to the more familiar promotion of expertise. From the point of view of universities, and, later, foundations, social scientists would not only provide leadership in solving the various problems of American society but also serve to establish the (moral) reputation of their institution. Economists were thus prominently involved in the creation of graduate schools and schools of commerce, and in the transformation of universities into research institutions. They

were also at the forefront of the movement to establish the American Association of University Professors in the early part of the twentieth century.[15]

American economics had thus become mainly a by-product of the professorial function before World War I. By the 1920s, however, the involvement of capitalist foundations concerned about "intelligent social control," as the director of the Laura Spelman Rockefeller Memorial once put it, prompted the creation of research organizations specializing in the methodical production of empirical knowledge. In 1916, William Willoughby, a Princeton professor, started the Institute for Government Research—one of three organizations that were later consolidated into the Brookings Institution—with the aim to bring to Washington economic studies and data relevant for the conduct of policy.[16] In 1920, Columbia professor Wesley Clair Mitchell presided over the founding of the National Bureau of Economic Research (NBER), a fact-finding body whose attention was concentrated on the study of the business cycle. The Carnegie Corporation and the Laura Spelman Rockefeller Memorial played especially critical roles as funders of these organizations and also helped secure influential appointments for social scientists in policy circles during the interwar period.[17]

To anticipate a bit, the financial base of economic research and training continued to expand in the postwar period. First, a number of newcomers in the philanthropic field (the Ford Foundation and the Alfred P. Sloan Foundation in particular) threw their support and vast resources behind the discipline. But the most significant change came from a vast increase in federal support, through the National Science Foundation's social sciences program and the systematic contractual use of economic research by military and civilian agencies. Both of these forms of support reached their peak during the 1960s and 1970s, in the wake of the Sputnik shock and the social programs of the Great Society.[18] Although this financial base weakened substantially during the more adverse political and economic climate of the 1980s, economists have consistently retained more federal and nonfederal resources than other social scientists, as figure 2-1a and 2-1b show, though they have fared less well relative to other science and engineering fields. As we will see later, the marked preference for economics over the other social sciences, which is general across private funding organizations both large and small, must be interpreted in relation to the discipline's greater ability to distance itself from accusations of political bias—an ability it owes, in part, to its more extensive reliance on formal mathematics—as well as its more intimate relationship to the business world, a topic to which I now turn.[19]

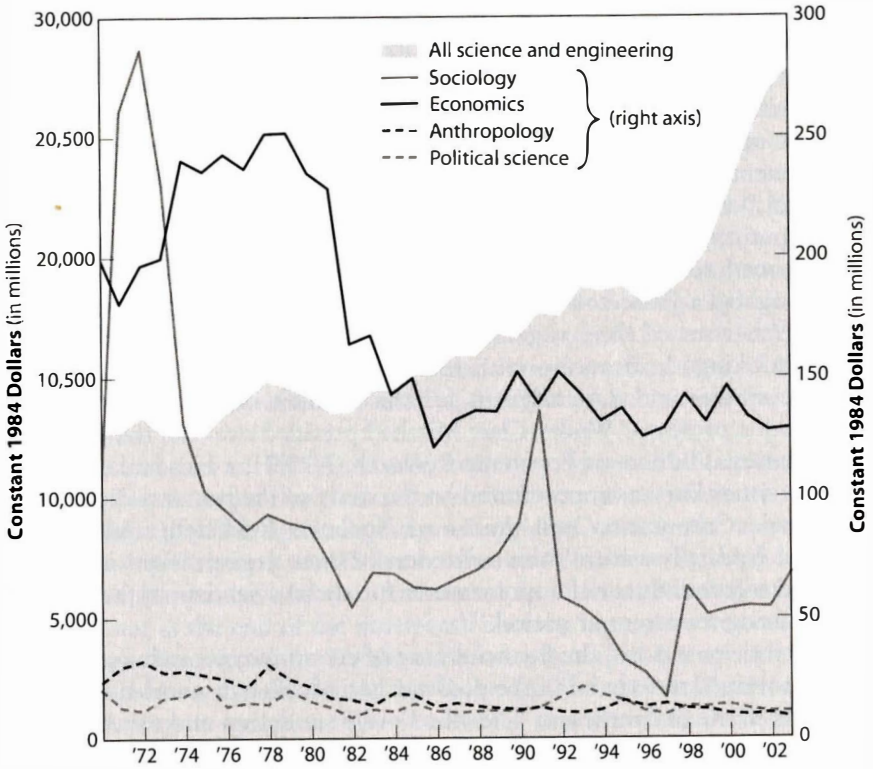

Figure 2-1a. Federal obligations for total research, 1970–2003.

Source: National Science Foundation, *Federal Obligations for Research by Agency and Detailed Field of Science and Engineering* (2004); *Academic Research and Development Expenditures* (2006); Census Bureau (for Consumer Price Index).

The Ambivalent Relationship to Business

Figure 2-2 reports trends in the number of bachelor's degrees in economics granted by American universities since World War II, in comparison with the same statistics for the neighboring fields of sociology, political science, and business. The data show that while economics has experienced nearly continuous growth throughout the twentieth century, the pace has been modest and does not even match the general expansion in undergraduate enrollments.[20] Part of this trend, however, is largely offset by the dramatic upsurge of business degrees, whose share of all bachelor's degrees awarded in the United States grew from 3 percent in 1920 to about 14 percent in 1960 and more than 20 percent today.[21]

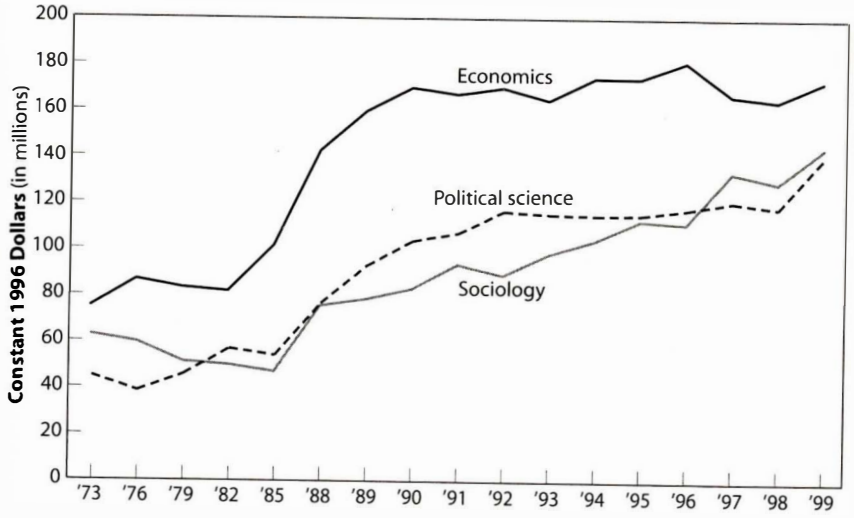

Figure 2-1b. Nonfederal expenditures for academic research, 1973–99.

Source: National Science Foundation, *Science and Engineering Indicators* series.

This suggests that in the United States, the expansion of economics as a field has been largely tied to its close connection to business. The pattern is certainly not new. In the early stages of the academicization process, the business orientation within economics was strong. Nonacademic audiences played an important role within the institutionalized channels of economic science, whether as members of the AEA or participants in outlets of scholarly production.[22] Between 1900 and 1914, more than 25 percent of the authors of articles in the main American journals were listed with a nonacademic occupation—although these percentages drop precipitously after World War I. During this early period, it was also not unheard of to have businesspeople serve as reviewers for journal articles.[23]

To a certain extent, this practical orientation could be found within economics departments as well. In fact, in a number of cases the impulse for business education came from within the economics department itself: for instance, founding deans for the schools of business at the University of Pennsylvania (Edmund James, Simon Patten), Harvard University (Edwin Gay), the University of Chicago (J. Lawrence Laughlin, Leon Marshall), and the University of Michigan (Edmund Day), were all economists. As early as the 1920s, the economics faculty in business schools was one of the largest, second only to the accounting

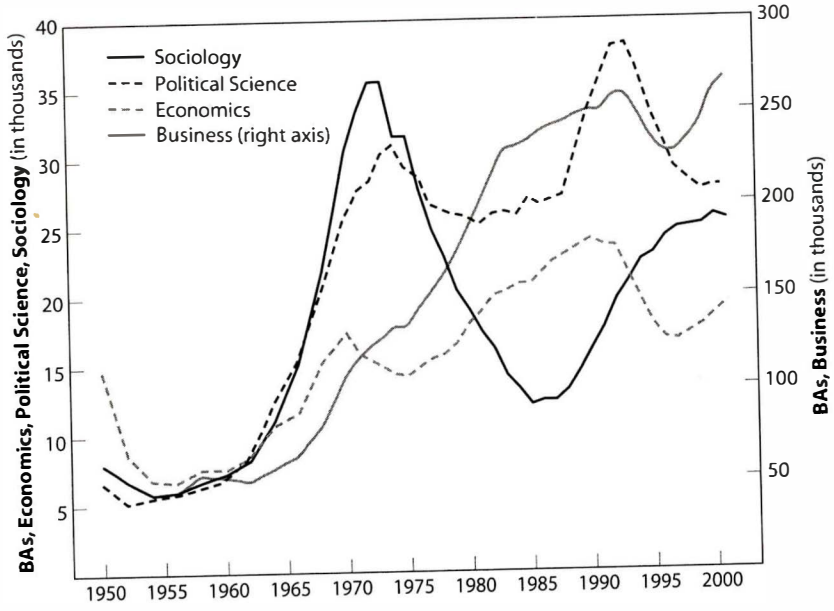

Figure 2-2. Bachelor's degrees: Selected social sciences and business, 1950–2002.
Source: U.S. Department of Education, National Center for Education Statistics.

faculty.[24] By 1959, when the Carnegie and Ford foundations published their influential reports on business education, two semesters of economics were a basic requirement in all U.S. business schools. In about half of universities and colleges, the department of economics was located *inside* the business school.[25] Finally, although practitioners continued to dominate teaching in business schools (only about 40 percent of their full-time faculty members held a PhD in 1959), more than half of these doctorates were in economics—and the proportion was significantly higher among senior professorial ranks and in PhD-granting institutions.[26] The foundations' reports, both of which were authored by economics professors, urged business schools to increase the "advanced economics" content of business training and to trust "economic theorists" rather than "business economists" for such instruction.[27] Although the two highly influential studies were advocating a general "scientization" of business education, it is quite remarkable, but not all that surprising, that they both singled out economics as the discipline most able to provide the rigorous intellectual foundation they called for. The philanthropic organizations that had called for the reports endorsed their conclusions, throwing their considerable resources and authority behind the reform of business training. The result was a rapid diffusion of

economic approaches throughout the business curriculum—including in domains that were not traditionally the province of economics, such as accounting or marketing. This is also when the transformation of finance into "financial economics" began.[28]

Yet the evolution of the fields of business and economics reveals a fundamental tension between, on the one hand, the desire of business schools to develop their own "practical" identity by developing ties with business organizations and professionalizing the field of management and, on the other hand, the scientific project within academic economics itself.[29] Hence, when economists started to reclaim a place in the business curriculum on *scientific* (rather than practical) grounds in the 1950s, they did so while forcefully reasserting the need for maintaining the institutional separation between economics and business and the intellectual *primacy* of the economics curriculum. At the University of Pennsylvania, for instance, the economics department split off from the business school in 1974. In many cases, business courses were newly confined to the postgraduate level.[30] These strategies probably allowed economists to maintain—and sometimes establish—a secure place in the undergraduate curriculum without fear of being overtaken by the more popular business program. Indeed, economics' position at or close to the top of the academic hierarchy in PhD-granting institutions has remained relatively unchallenged throughout the twentieth century. In 1926, more students at Stanford majored in economics than in any other subject; at Harvard and Berkeley, economics was the second most popular concentration; at Yale it was the third most popular choice.[31] In 2000, Harvard still awarded around 11 percent of its undergraduate degrees to economics majors, higher than the percentage for any other field, including political science (the most popular choice in 1926). Recent trends at Princeton are similar.[32]

The relationship between economics and business in the United States is both more secure than elsewhere, but still ambivalent, if not schizophrenic. On the one hand, the persistence of an institutional separation at elite schools means that economics departments can both maintain the discipline's scientific standing against the "pollution" of practical programs and guard its professional unity through its largely monopolistic control of the professional schools' job market. On the other hand, the demands generated by the business and policy worlds constitute a formidable source of institutional strength by connecting economics to the practical functions of the university and to vast nonacademic markets. Thus even though the proportion of business faculty with an economics PhD has not increased significantly since the high point of the 1970s,[33] the continued rapid growth of business schools has had a dramatic impact on the field of economics: in 2003–4, for instance, there were 549 economics PhDs teaching in the top twenty U.S. business schools, as

compared with 637 in the top twenty economics departments. The absorption of increasingly large contingents of economics PhDs has turned business schools into formidable players within economic science itself—a transformation that is attested by the remarkable string of Nobel Prizes in economic science awarded to business school scholars since 1990.[34]

Boundaries: The PhD and Gatekeeping

At the heart of American economists' establishment of broad jurisdictional rights over the business and other professional schools' market is an educational monopoly. This monopoly, however, was never natural. Rather, it was the result of specific institutional processes that rewarded credentialed, disciplinary scholars and purported to keep legions of alleged dilettantes at bay. Economic questions have always had broad public appeal, partly because of their inevitable connection with politics; some of the most original minds in America tried their hand at economic writing, with more or less success. One of the best-read economic writers in all of American history was the single-tax enthusiast Henry George, a self-taught journalist who made no mystery of his aversion for the established teaching of political economy.[35] Although George's writings were immensely popular, and he became a sort of folk hero who converted many to socialism, political economists never engaged him seriously. In fact, the world of professional economics came to establish itself in part against those lay practitioners who threatened its integrity—whether maverick theorists like George, practitioners of all stripes located outside of academia, or scholars from other disciplines.

The main element in the process of professionalization of American economics was the redefinition of the PhD, an *academic* credential providing evidence of specialized *scholarly* competence, as the primary mechanism for certifying expertise in both scientific and practical matters. Partly following the German model, the PhD had emerged early as the critical device whereby the American academic profession would reproduce itself.[36] With the institutionalization of disciplines and the departmentalization of universities, however, a PhD "in something" became the basis for the development of academic specialization. In contrast to Germany, where doctorates were only loosely connected to disciplines, the professional project within American academia came to be organized around more exclusive intellectual communities.[37]

To understand the specific role of the PhD in American academic professionalism in general, and in American economics in particular, we have to remember that specialized, academic credentials is not the only way a profession may establish what Starr (1982) calls its "cultural authority." In the United Kingdom, the PhD was regarded as a Continental oddity well into the 1950s. Recruitment was controlled by informal networks, so much so that at least until the 1970s the brightest people went into teaching positions straight from their undergraduate degree. In France, where the educational system is much more differentiated, there is (or was, until recently) little consensus on which credentials may signal expertise in *economics* per se, and university professorships were obtained through an idiosyncratic examination, the *agrégation*. By contrast, the openness, size, and competitiveness of the American academic labor market provided a social structure that encouraged reliance on impersonal criteria of performance. An analysis of one of the first AEA membership directories containing detailed biographical information reveals that the majority of academic members (over 60 percent) and half the government members in 1938 had a PhD (*American Economic Review* 1938). This pattern, however, did not apply to members coming from the business world (only 20 percent had a PhD).This discrepancy was, in fact, of great concern to the association and led to the circulation of a number of proposals to restrict membership to "properly qualified" members.[38] By 1969, the percentage of PhDs among university-employed members of the AEA had grown to 79 percent, and 34 percent for business members. [39]

American economics exemplifies, in many ways, the ideal type of successful academic professionalism. Economics departments deliver a greater proportion of PhDs relative to other degrees than any other social-scientific field, a feature that has persisted throughout the postwar period.[40] PhD production is concentrated among a small number of departments: between 1904 and 1939, Columbia alone represented 21 percent of all students working on an economics PhDs, Chicago 13 percent, and Harvard 9 percent.[41] By the early 1970s, these figures had come down significantly, and Harvard had replaced Columbia as the dominant school. Still, the top twenty departments continued to produce more than half of all economics doctorates, a figure that has remained fairly stable until the present day.[42] Graduate training tends to be homogeneous across higher education institutions, even though differences in style are clearly perceptible. As a result, an economics doctorate is a general certification mechanism for academic as well as nonacademic jobs. Thus the annual convention of the American Economics Association, where PhD graduates annually sell their skills to potential buyers, attracts a diverse pool of employers, including many businesses, government agencies, and international institutions. As figure 2-3 shows, in 2001 only about 56 percent of economics PhDs were employed in educational institutions (a figure close to pre–World War II patterns) compared with more than 81 percent in 1970—and a large part of this change is due to a massive shift of graduates toward the business world: employment of PhD economists in business and industry has grown from 11 percent to 24 percent of the total over the same period. The PhD has thus gained currency well outside the boundaries of academia, which, in

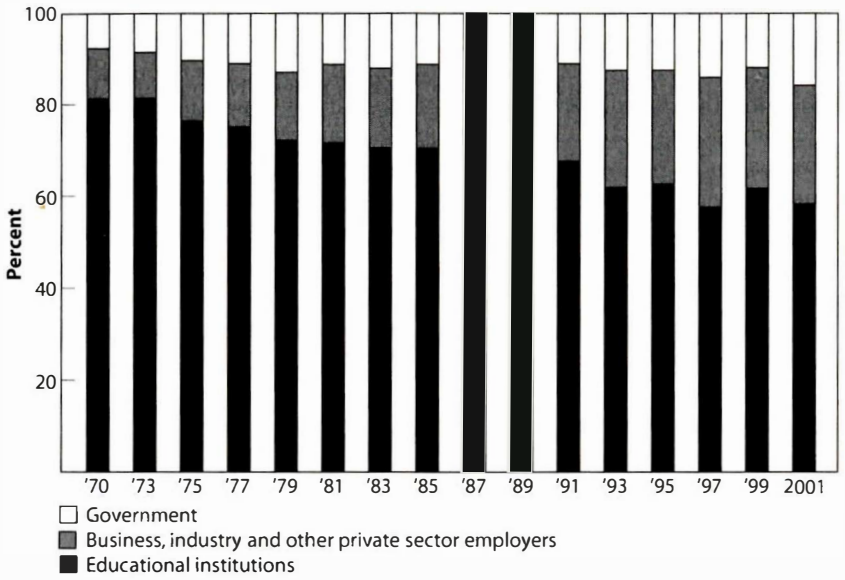

Figure 2-3. Employment sector of doctoral economists, 1970–2001.

Source: National Science Foundation, *Characteristics of Doctoral Scientists and Engineers* (for 1975, 1987, 1991); *Characteristics of Science and Engineering Doctorate Recipients: Selected Trend Tables* (for 1993, 1995, and 1997); and *Characteristics of Doctoral Scientists and Engineers in the United States* (for 1999, 2001). The category "other" was uncertain and thus removed. I am grateful to John Tsapogas of the National Science Foundation for his help in completing the data series.

turn, has fueled the process of professionalization.[43] Thus, figure 2-4a shows the dramatic expansion of economics doctoral degrees starting in the 1960s, and figure 2-4b documents the parallel growth of the American Economic Association.

If the centrality of the PhD as an institution is fundamentally rooted in the competitive structure of the academic market, the forms of incorporation of economic expertise outside of academia have only reinforced it. As will be suggested throughout this chapter, American public administrations have largely relied on the institutions of university-based professionalism as a basis for their own recruitment processes, particularly in the higher positions. Consequently, the (rare) appointment of "non-specialists" to top-level "economic" positions has sometimes triggered bitter gatekeeping or jurisdictional struggles. The case of Leon Keyserling (vice-chairman and then chairman in the first and second Council of Economic Advisers [CEA; 1946–48, 1948–50]) is emblematic of the issues at stake. A lawyer who had done graduate work in economics,

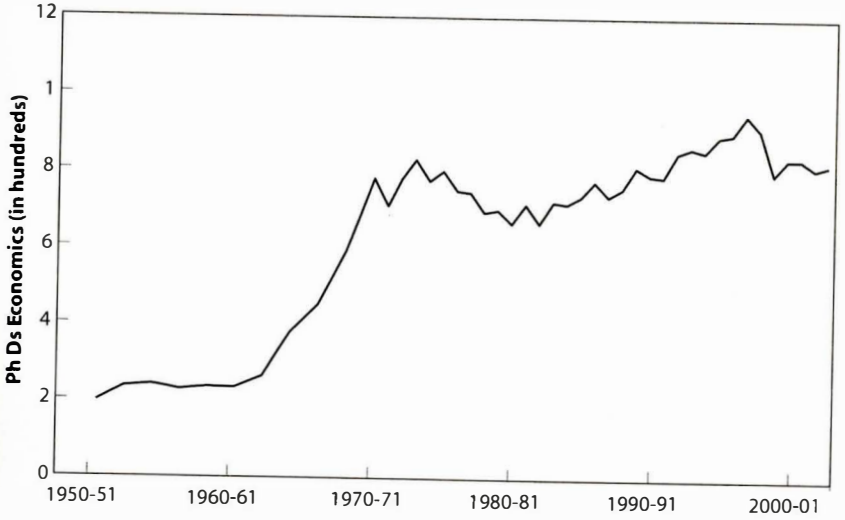

Figure 2-4a. Annual number of PhDs in economics granted at American universities, 1949–2002.

Source: U.S. Department of Education, National Center for Education Statistics.

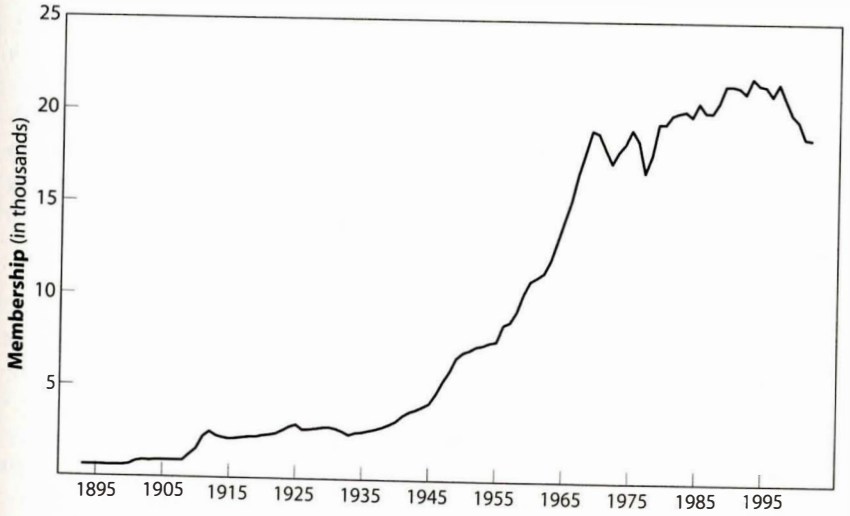

Figure 2-4b. American Economic Association Membership, 1893–2002.

Source: American Economic Association.

Keyserling helped draft key legislation as a Senate staff member during the New Deal and played an essential role in bringing the CEA to life after World War II. Yet, he recalls,

> The general viewpoint among the so-called professional economists was that I was unqualified for CEA membership because I had not completed the essay requirements for a PhD! If, instead of coming to Washington in 1933, I had completed these requirements, taught a course or two during these years, and written a few of the entirely useless (for practical purposes) types of econometric articles which usually appear in the *American Economic Review*, the so-called professionals would have deemed me entirely qualified. (Keyserling, letter to H. Norton, 1971, cited in Norton 1977, 115)[44]

What this liminal case and others indicate is that the PhD came to be constructed by the academic economics profession both as a licensing instrument for certifying expertise *and* as a moral guarantee of professional impartiality. As the interview quote at the onset of this chapter suggests, the personal narratives I collected confirm the continued centrality of the doctorate to the boundary work of American economists against the jurisdictional claims of nonspecialists. During the early years of the Reagan administration, for instance, in a dramatic contest over scientific authority, a group of journalists, think tank ideologues, businessmen, and politicians helped bring about a dramatic transformation in economic discourse—the supply-side revolution.[45] This heavy politicization of economic issues prompted a revival of gatekeeping work on the part of academics, of which Paul Krugman's activism may be the best example. In countless articles, books, and opinion pieces Krugman impugned the authority of people without academic credentials and challenged the ability of "political entrepreneurs" and "pseudo-economists"—from Reagan's supply-siders (1994) to Clinton's "pop internationalists" (1998) and George W. Bush's tax revolutionaries (2003)—to speak with authority on economic issues.[46] The following is an example of this boundary work:

> On one side there are those whose views are informed by academic economics, the kind of stuff that is taught in textbooks. On the other there are people like Kuttner, Jeff Faux of the Economic Policy Institute[47] and Labor Secretary Robert Reich. Some members of this faction have held university appointments. But most of them lack academic credentials, and, more importantly, they are basically hostile to the kind of economics on which such credentials are based. . . .
>
> There are important ideas in (economics) that can be expressed in plain English, and there are plenty of fools doing fancy mathematical models. But there are other important ideas that are crystal clear if you can stand algebra, and very difficult to grasp if you can't. (Krugman 1996a)

The last paragraph of the quotation suggests two points. First, economists define their skill mainly through the mastery of mathematical tools, acquired in graduate school. The PhD thus serves as a key instrument of both professional standardization vis-à-vis outside markets *and* disciplinary, intellectual standardization inside.[48] The belief that professional standing depends on economics' ability to cohere around a "strong" scientific program was articulated quite early, for instance, in the AEA's effort to homogenize economics instruction in the early 1950s. Hence the so-called Bowen report of the AEA recommended that all economists "should have a sufficient orientation to mathematical ideas, symbols and modes of thought to make economic theory and statistics more intelligible" and implicitly suggested that "mathematical economists"—people with "a command of mathematical skills at the most stratospheric level"—should dominate the professional hierarchy.[49]

The second point is that the use of mathematics is extremely codified, too. As McCloskey (1985) has shown, economic model-building has become a tightly controlled process, guided by, first, the methodological imperative to make—following Friedman's (1953) recommendation—"valid and meaningful predictions about phenomena not yet observed" and, second, by the rhetorical imperative of parsimony and elegance. What binds American economists together, then, is a common set of *practical* rules, normalized through PhD training, regarding the proper way to "do" economic science. These rules apply both to theoretical work (models), where conclusions have to be derived in a strictly deductive manner from a limited set of *acceptable* assumptions, and to empirical work, with its fetishist emphasis on causality. But how did this character of American economics develop historically? What are the factors that influenced the field's intellectual trajectory? And how different is it from economics as it is practiced in Britain and in France?

The Meaning of Science in American Economics

To understand the intellectual trajectory of American economics, we have to return to the period when academic research as a whole got institutionalized in America. For economics, the critical historical juncture took place between 1885 and 1914. This was the time when economists, through their negative and positive interactions with university administrators, public institutions, and business corporations, came to define

both their place in American society and the intellectual boundaries of their scholarly enterprise.

The Defense against Politics and the Rise of Scientism

No one took as much to heart the missionary and progressive nature of the "new" social sciences as did the founders of the American Economic Association, many of whom (like Richard T. Ely, John Bates Clark, Henry Carter Adams) combined their scientific aspirations with Christian commitments[50] and sought to reform society by mobilizing popular support for their progressive views. Rapid economic growth had brought irreversible changes to American society, most notably the emergence of a large population of impoverished industrial laborers, whose radical actions attracted the sympathy of a number of young historical economists. Under the leadership of Richard T. Ely, a prominent figure in the Social Gospel movement, the American Economic Association adopted a progressive platform at its inaugural meeting. The ambitions laid out in the document were not unlike those of the AEA's German counterpart, the Verein für Sozialpolitik: to serve as an enlightened society of experts with an avowed social reform purpose.[51] Most spectacularly, it embraced the view that rational administration was the key to social and economic progress:

> We regard the state as an agency whose positive assistance is one of the indispensable conditions of human progress.
>
> We believe that political economy as a science is still in an early stage of development. While we appreciate the work of former economists, we look not so much to speculation as to historical and statistical study of actual conditions of economic life for the satisfactory accomplishment of that development.
>
> We hold that the conflict of labor and capital has brought into prominence a vast number of social problems whose solution requires the united effort, each in its own sphere, of the church, of the state, and of science.[52]

The Christian socialist and anti-laissez-faire stance expressed in the platform was controversial from the beginning. Reflecting both the more radical social orientations of midwestern teachers and their professional desire to keep the doctrinal views of nonacademics (businessmen in particular) at bay from serious economics, these positions initially deterred the most orthodox economists. Hence while General Francis Amasa Walker, an apologist of industrialism who was famous for his theoretical justification of profit, was chosen as president of the AEA, other important conservative figures such as J. Laughlin (founder

of the Political Economy Club) and the mathematician Simon Newcomb initially declined to join the organization. As the AEA experienced a rapid influx of members from around the country, most of whom endorsed a laissez-faire position, political tensions increased to the point where the "westerners" envisioned a split.[53] In the end, however, they relented to the pressure. In 1887, the organization purged contentious references from its platform and from then on defined itself in exclusively scientific terms.[54] Positions on matters of public policy continued to divide the academic social sciences, however. During the wave of academic freedom cases that spanned from the 1890s to the 1910s, many economists came under sharp public attack for promoting views that offended powerful constituencies in matters as varied as the labor movement, free silver coinage, public utility franchises, or fiscal policy. E. Bemis was dismissed from the University of Chicago, E. Ross from Stanford, and H. C. Adams from Cornell. John Commons had to temporarily retire from academic life after the state legislature came down upon the University of Indiana, and university trustees at Syracuse (his next appointment) decided to discontinue his chair in sociology.[55] Richard Ely was tried at Wisconsin for favoring strikes, after which he gave up much of his political engagement.[56] At Wharton, Scott Nearing was sacked in 1915, presumably because of his activism against child labor and the war; the school's first two deans, Edmund James and Simon Patten, who were active in various progressive causes, also ran into difficulties.[57] The list continues.

As Furner (1975) has shown in her well-known study of these cases, the switch from "advocacy" to "objectivity" constitutes a key turning point in the history of American social science. As knowledge production became increasingly accountable to external control (such as boards of trustees and university administrators, or state legislatures in the case of public universities), reformist activism in the United States came to be represented as incompatible with the academic vocation. The turn-of-the-century political attacks against progressive social scientists set the limits of acceptable behavior and drove them to confine their scholarship to "safe" intellectual ground. In the case of economics (but the pattern is similar in other social sciences), these pressures encouraged a retreat to a more narrowly "scientific" discourse, which protected scholarship from easy vilification. Hence, not only did these cases help transform the social role of academics, who went from openly supporting social reform to a form of politically hands-off professionalism channeled through research bodies and expert commissions; they also had powerful intellectual consequences. In a context of political incertitude and relative lack of autonomy of the intellectual sphere, marginal analysis came to be regarded as a safe and attractive research strategy by American economists,

especially by the younger generations who had to create a position for themselves.[58]

The other reason for the shift has to do with the structure of the intellectual field and the nature of intellectual authority in American society. In contrast with the German Verein für Sozialpolitik and the French Société d'Économie Politique, which represented currents that were dominant, if not hegemonic, in their respective countries (historicism on the one hand, *libéralisme* on the other), or even the British Royal Economic Society, which in many ways was Alfred Marshall's personal achievement, the AEA toward the end of the nineteenth century already regarded itself as an umbrella organization for a diverse and regionally fragmented field. In this context, economists soon realized that the public display of their own internal disagreements could damage their credibility. Lacking the hierarchical controls and intellectual authority of its European counterparts, the American economics profession sought to find common ground by neutralizing the political element in political economy.

At the same time that it allowed the AEA to reconcile the variety of opinions of its members, the turn to scientific professionalism also helped legitimize social scientists' claims to relevance vis-à-vis potential users in government and business, thereby redefining "science" as the most promising strategy to influence policy.[59] On the demand side, the Progressives' crusades against political corruption, waste, and inefficiency rapidly pulled the new academic experts into the public domain. As Furner puts it, "Direct appeal to the public on controversial social questions was retained as a theoretical right, but economists were expected to channel most of their efforts through government agencies or private organizations where scholars could serve inconspicuously as technical experts, after the political decisions had been made, rather than as reformers with a new vision of society" (1975, 257–59).

By the 1920s, a whole set of institutions articulated the language of the objective, impartial knowledge of facts as the necessary precondition to the resolution of the social and economic problems of an advanced industrial society. Closely associated with this was the notion that the new scientific methods and procedures of marginal analysis and statistics were the best defense against the perceived evils of radical political partisanship. Being contentious by nature and, as we have seen, quite contested in practice, the modern social science disciplines thus saw academic institutions as the best guarantee of their moral authority.

Philanthropic foundations, which also emerged during this period, came to embody this cultural attitude about the effectiveness of rational knowledge and its potential use for societal betterment through their support of applied, quantitative studies produced in academic settings.

The (discursive, at least) imperative of relevance and the problem-solving orientation also came from the close relationship these organizations entertained with government and business.[60] Here, too, relevance was coupled with an explicit rejection of openly political positions, as well as the curbing of scholars' involvement in social reform, both of which were accused of threatening the organizations' legitimacy in the eyes of those wealthy audiences they sought to appeal to.[61] One way out of this dilemma was to equate the idea of socially useful knowledge with the collection of factual data. Hence, the foundations helped guide the development of an entire research economy that prioritized applied, quantitative studies and fostered a detailed, applied orientation among American social scientists. It is under this particular institutional regime that the economic school of thought best known as American institutionalism flourished.

THE "POSITIVE" CHARACTER OF AMERICAN INSTITUTIONALISM

American economics at the turn of the century was a diverse intellectual field, shaped by different European influences and by a decentralized university system. American students returning from German universities in the middle to late nineteenth century promoted the study of social and economic institutions as the core mission of political economy, and managed to entrench their approach in places such as Johns Hopkins (around Richard T. Ely), Wisconsin (around John R. Commons, Edwin Witte, and Selig Perlman) and later Columbia (around Wesley C. Mitchell). Harvard and Chicago, on the other hand, remained traditional neoclassical power bases, closer to the Marshallian tradition in Britain.[62]

Whether geographically or intellectually, the boundaries between "institutionalism" and neoclassicism were far from clear-cut, however. American institutionalist thought brought together a fairly diverse crowd of practitioners. In an attempt to reconcile their scientific aspirations with their awareness of social change, a fair number of people found themselves in a position of intellectual compromise between both approaches: of the earlier generations, many liberal historicists (such as E.R.A. Seligman) also embraced marginalism.[63] Some institutionalists went further and converted fully to the neoclassical orthodoxy (a good example was John Bates Clark's spectacular turnabout). Studies of interwar economics have confirmed the persistence of such an intellectual continuum from institutionalism to neoclassical economics during that period, with a number of prominent figures (Allyn Young, for instance) holding intermediary positions.[64] Yonay's (1998) work in fact suggests that in their aspirations to control the "soul of economics," American institutionalists were no less scientistic than their neoclassical counterparts.

They relied on positivist rhetoric, sought to build intellectual legitimacy by likening their work process to that of the natural sciences (particularly biology), and presented themselves as the "true" heirs of Alfred Marshall in their methodological exchanges with the Marshallian orthodoxy. Furthermore, their aspirations to shape and control the economy were far more ambitious than those of the neoclassicals, who remained much more wedded to laissez-faire ideas and therefore tended to have less impact on policy.

To the extent that an institutionalist school ever existed as a relatively organized body of thought, its distinctiveness came more from its attitude toward economic research than from the existence of a unified paradigm or even a common political stance. Its principal intellectual characteristics were an inductive, empirical approach to the study of the economy, and a faith in government policy and institutional reform as a way to engineer social transformation. Both features of institutionalist thought stemmed from the strong belief in the usefulness of economic knowledge for human and societal betterment, and both have continued to inform the development of American economics to the present day.

The intellectual characteristics of American institutionalism are particularly interesting to analyze in comparative perspective.[65] First, while the American movement shared with its German precursor a taste for induction and the close observation of facts, it differed quite substantially from it (and to a certain extent from the English historical school as well) in the importance it came to give to history. As Ross remarked, by the 1920s, one of the school's "striking features was that, for the most part it did not study institutions and thus did not fully engage with history" (1979, 417). Rather, American institutionalism (especially in its later versions at the National Bureau of Economic Research) remains more closely associated with the systematic collection and analysis of data on current economic conditions than with historical work in the German mold. One of the movement's main figures during the interwar period, W. C. Mitchell, sought first and foremost to identify empirical regularities through the close quantitative observation of facts; he is best remembered for his monumental work on the business cycle.[66] In his 1924 presidential address to the American Economic Association, Mitchell laid out a "quantitative" future for economics dominated by questions of measurement, not only of physical and monetary quantities but also of human behavior through the development of the experimental method—a prescient statement. This purely inductive approach, he argued, would make the mathematical sophistication of pure economic *theory*, as envisioned by Marshall or Jevons, irrelevant. In fact, he predicted, "our whole apparatus of reasoning on the basis of utilities and disutilities, or motives, or choices" will become obsolete. "Motives will not be disregarded, but they will be treated as problems requiring study" (1925, 5).

Little did Mitchell realize that economic quantification in America would ultimately follow *both* of these routes. Mitchell's esteemed colleague at Columbia, Henry L. Moore, had pioneered the statistical estimation of the laws of neoclassical economics. During the interwar period, Moore's students' at Chicago—Henry Schultz (who headed a statistical laboratory funded by the Social Science Research Council) and Paul Douglas—pursued his program of establishing the validity of the neoclassical intellectual apparatus on a purely *statistical* basis, by estimating some of its key concepts (e.g., demand curves, elasticity) from actual empirical markets, mainly agricultural product markets. "What we have to do to make our discipline an experimental science," Schultz wrote, "is to examine our concepts or laws from an operational point of view." (1928, 647).

The language is strikingly similar to Mitchell's. It is often not well appreciated by sociologists how much the intellectual programs of institutional and neoclassical economics in fact *overlapped*, not least in their common reliance on statistics. Certainly Mitchell, in his emphasis on an inductive exploration of the economy through measurement alone, had little faith in Moore's efforts to statistically specify neoclassical concepts. But he applauded Moore's patient collection of data and his careful work with it. It is also important to point out how much *this* research program seems to have been at odds with the interests of British economists at the time. Anticipating Keynes's reaction to econometrics later on, Marshall and Edgeworth disdained Moore's efforts.[67] It is not that British economists were mathematically illiterate or uneducated about the state of the real economy (they certainly were not), but theory for them always had a much higher status. In the United States, one would have to await the Samuelsonian revolution after World War II for such a clear hierarchy to establish itself, and even then, it was never complete and has arguably lost part of its appeal. By the 1980s, indeed, an inductive, atheoretical research program in economics started to come back with a vengeance, both on intellectual grounds (e.g., Sims 1980) and in response to outside demands from business and government.

From this broader perspective, institutionalism ceases to be a sort of parenthesis in American intellectual history. The institutionalist research program's loss of intellectual ground after the 1930s and its rapid demise after 1945 become understandable in light of the specific trajectory of quantification in America: the modern history of American economics is fundamentally a history about "rival ideals of quantification," as Porter (1994) put it, rather than rival ideals of economic analysis (as is arguably

the case with French economics). American institutionalism was displaced because its model of quantification was made obsolete by the combined rise of mathematical economics and econometrics, which associated empiricism with the explicit formulation and testing of economic theories. The quantitative bent of economics, however, persisted under new forms and continued to rely on America's deep cultural reverence for numbers and facts as the only means to achieve relevance and scientific legitimacy. Its institutional bases—in universities, foundations, and government agencies—also continued to inspire and insist upon this view.

The Postwar Mathematization of American Economics

In the 1930s, the use of mathematics for the advancement of economic analysis was familiar to American economists, yet by and large pioneering work in this area had failed to leave an imprint. Among the forerunners, Simon Newcomb was a mathematician and astronomer whose interest in economics had emerged almost accidentally and his *Principles of Economics* was virulently attacked by important institutionalist figures. Schumpeter notes that the publication of Irving Fisher's *Mathematical Investigations* (1892) "passed practically unnoticed"([1954] 1994, 873). Empirical work, on the other hand, was generally descriptive, with the notable exception of agricultural economics (e.g., Moore, later Ezekiel), where the unique availability of agricultural data and the proactive attitude of the Department of Agriculture toward economic research had stimulated the early development of applied econometrics. Other pioneers in mathematical economics and econometrics were mainly European, from France, England, and Austria. U.S. academia, however, rapidly closed the gap with Europe in the 1930s and 1940s, thereby taking over scientific leadership in the field. Three events played a critical role in this evolution: the birth of macroeconomics, the connection with military research, and McCarthyism.

THE NEOCLASSICAL SYNTHESIS AND THE ECONOMETRIC REVOLUTION

As an analytical framework focused on aggregate variables, macroeconomics lent itself quite naturally to mathematical formulation. The English economist John Hicks (1937) pioneered a mathematical representation of macroeconomic relations, which was later expanded upon by Franco Modigliani in the United States (1944).[68] However, it was probably not until Samuelson's *Foundations of Economic Analysis* (1947) and his textbook *Economics* (1948) were published that mathematical modeling crystallized as the aspiring dominant method for economics. While Hicks was shy about his mathematics, pushing them into the appendix, Samuelson had no such qualms. *Au contraire*: he made it very clear that

mathematics ought to be embraced as the natural language of economics. In the opening pages of the *Foundations*, Samuelson defined his approach as

> the method of comparative statics, meaning by this the investigation of changes in a system from one position of equilibrium to another without regard to the transitional process involved in the adjustment. . . . This method of comparative statics is but one special application of the more general practice of scientific deduction in which the behavior of a system (possibly through time) is defined in terms of a given set of functional equations and initial conditions. (Samuelson 1947, 7–8)

In short, economics should emulate theoretical physics: at the macro level, it should describe the economy with a minimum set of equations; at the micro level, it should rely on the methodology of constrained optimization. Samuelson's textbook popularized these distinctions and rules as the basic method of economic theory and set out, with considerable confidence in the engineering skills of economists, the main themes of Keynesian macroeconomic policy. Currently in its eighteenth edition, it has been a considerable editorial success, both in the United States and worldwide.[69] From the point of view of his impact on the *style* of economic analysis (even leaving aside his properly *theoretical* contributions), Samuelson was probably right when he immodestly stated: "I can claim that in talking about modern economics, I am talking about me."[70]

The revolution was sweeping: by 1960, nearly 80 percent of *theory* articles in the three main U.S. economics journals used algebra, up from about 20 percent in 1930.[71] The *Foundations* convinced a new generation of economists that, as Robert Lucas put it, "mathematical analysis is not one of many ways of doing economic theory: It is the only way. Economic theory is mathematical analysis. Everything else is just pictures and talk" (Robert Lucas, cited in Walsh 2006, 168). The turn to modeling gave economics both a lofty scientific status and a high moral ground; armed with their macroeconomic models, economists now claimed to be able to deliver economic growth and full employment. The economy had been turned into a "thing" whose behavior could be described (through national accounts), modeled into equations, tested, predicted, and acted upon.[72] "The heyday of Keynesian economics," Solow writes, "provides a wonderful example of the interplay among theory, the availability of data, and the econometric method" (1998, 65).

Indeed, the mathematical revolution had an empirical counterpart. Unsurprisingly, the intellectual trajectory in the handling of economic data parallels the trend toward structural equations in economic theory. By the 1940s, the so-called econometric approach, which promoted the use of

probability theory to "find the correct choice of model for the observed data," was on the rise, posing a serious challenge to the descriptive statistical research program of the NBER.[73] From a largely inductive style based on the identification of empirical regularities, economics moved to a structural approach where theoretical models were fitted to data. In the United States, the "measurement without theory" debate gave a somewhat dramatic flair to the transition, with one of the leaders of the new approach attacking Mitchell and Burns for the lack of theoretical grounding in their 1946 volume, *Measuring Business Cycles*.[74] Said Koopmans: "Fuller utilization of the concepts and hypotheses of economic theory *as a part of the process of observation and measurement* promises to be a shorter road, perhaps the only possible road, to the understanding of cyclical fluctuations" (1947, 162). With this, the era of descriptive statistics was judged to be intellectually obsolete, although in practice it persisted somewhat longer, notably at the NBER. Ronald Coase reportedly said of institutionalism: "Without a theory, they had nothing to pass on except a mass of descriptive material awaiting a theory or a fire."[75]

What gave mathematical economics a new impetus in the twentieth century were convergent intellectual and organizational developments. It is indeed not irrelevant that by the time Koopmans published his review, he was a member of, and about to head, a strange new institution: the Cowles Commission for Economic Research. The watershed had come in 1930, when a small network of like-minded European and American scholars with a serious background in mathematics joined forces to create the Econometric Society. Almost immediately thereafter, a wealthy Colorado banker named Alfred Cowles III gratified his interest in the scientific production of economic forecasts by providing financial backing for the precarious association and its journal, *Econometrica*.[76] With Cowles's underwriting, the Econometric Society grew rapidly, going from only 16 members at the time of its founding in 1930 to 163 members in 1933 and 671 by 1939.[77] Meanwhile, the Cowles Commission (later Foundation) for Economic Research, which acted as a sponsor to these organizations, also provided a stable research base for a number of refugee scholars with nonstandard affiliations (some of whom may have otherwise had difficulty finding regular jobs in the American academic system). In addition to their varied national origins (many Cowles members came from continental Europe), several also held noneconomics degrees in fields such as physics (Tinbergen, Koopmans), mathematical statistics (Frisch, Wald), and mathematics (Roos, Davis, Debreu).[78]

In 1939 the organization moved from its peripheral location in Colorado Springs to the University of Chicago, a decisive step toward incorporation into the core of the American academic system.[79] Further recognition came in 1942, when the commission began receiving funds

from the Rockefeller Foundation, as well as small amounts from the National Bureau of Economic Research. Under the leadership of Jacob Marschak, the commission's research program began focusing on modeling the economy as a system of simultaneous economic equations with random variables. In the process, Cowles scholars also devised statistical methods to estimate economic models' parameters from observational data. If the Cowles Commission did not invent the language of modern economics, it certainly played a key role in making the "model construction–statistical estimation" sequence part of the disciplinary vulgate. Ultimately, Cowles would become the main center for the development of large-scale macroeconometric models, later moving to more abstract work in linear programming and Walrasian general equilibrium analysis.[80] To realize the organization's immense impact, one need only mention that fully a third of the recipients of the Nobel Prize in economics between 1969 and 1990 had been formally associated with it.[81]

WAR AND COLD WAR

World War II was the second important event in the mathematical evolution of American economics. Its conduct brought to the fore the need for planning, forecasts, and resource allocation strategies, and federal agencies tapped quantitative abilities where they existed, primarily among statistically inclined scientists and social scientists. Hence work conducted under federal government auspices led to the development of output analysis, statistical estimation, national accounts, resource allocation, and linear programming techniques.[82]

The outbreak of the cold war created an even larger market for skills that seemed most attractive to the federal government in a highly uncertain international context, such as game theory, allocative programming, and operations research. The Department of Defense, notably the U.S. Navy and the U.S. Air Force, actively supported these lines of analysis, which "seemed to have potential value for the missions of the national defense and security establishment."[83] The technical demands of the war economy under its various forms (declared or latent) from the 1940s to the 1960s, and the reorganization of scientific research around a "national security state" investing massively in engineering and the physical sciences, exerted a powerful "pull" effect on economics.

As Mirowski and others have shown, the government's intensive investment in national defense explains much of the intellectual reorientation of American economics in the postwar period.[84] Military funding introduced economists (but also philosophers and psychologists) to engineering-based techniques of operation research and cybernetics, new computational tools, and new technical challenges (the "missile gap"). The new institutional configuration helped push economics into previously uncharted

intellectual terrains such as game theory and artificial intelligence, and contributed to an extensive redefinition of its place in society. Economics was now becoming the "general" science of rational decision making.[85]

The second, perhaps less obvious, effect of military funding is that it sheltered the most technical segment of the profession from the intellectual demands of university economics at the time, as well as from the need for direct policy relevance. The latter had dominated debates about the place of economics in the early part of the century and was a central concern of financial sponsors like the Rockefeller Foundation. The evolution of the Cowles Commission after 1948 is a good case in point. By the 1950s, the organization switched patrons and became a beneficiary of the quite lavish funding of the RAND Corporation (a postwar military think tank turned nonprofit organization) and the U.S. Office of Naval Research. Under the attractive label of "decision theory," and with Tjalling Koopmans now at the helm, Cowles's research program started evolving in a much more abstract direction.[86] The effect was to launch economics on the path of mathematical formalism for at least two decades, a development some regard as profoundly un-American—a sort of historical aberration in a mostly pragmatic intellectual path.[87] Indeed, the crowning achievement of this program, the Arrow-Debreu (1954) proof of the existence of general equilibrium, drew much of its inspiration from the French mathematical collective "Bourbaki" and its taste for rigorous axiomatization.[88]

It was partly the increasing abstraction of the work at Cowles that caused some important quarters of the profession to doubt the value of the scientific program being carried on there. As Mirowski and Hand (1998) have argued, with the Columbia-Wisconsin institutionalist pole virtually wiped out, the postwar intellectual landscape in American economics centered on three powerful poles: MIT (Samuelson), Cowles (econometrics/general equilibrium), and the University of Chicago. Of these, Chicago was probably least receptive to the influence of the other poles. Indeed, despite the commission's being housed there from 1939 to 1955, there was much about Cowles that Chicago economists disliked. Milton Friedman and Frank Knight in particular objected to Cowles's Walrasian, formalist method, its interest in computer simulations, and, not the least, its sympathies for socialist planning and government intervention, with which Cowles's characteristic systems of structural equations had an explicit affinity.[89]

WITCH HUNTS

And it was, obviously, not an opportune time to show such sympathies. The cold war had begun, and public and private patrons were nervous about the ideological implications of the research they supported. In

1952 and 1954 two successive congressional committees launched investigations into the activities of the major foundations on the suspicion that they helped spread radical ideas.[90] Similarly, the social sciences were first excluded from the National Science Foundation at its creation in 1950 on the grounds that their messy politics might "compromise the perceived ethical neutrality and taken-for-granted disengagement of natural scientists" (Gieryn, 1999, 97). Finally, many insidious campaigns targeted individual scholars. Frederic Lee suggests that "at least twenty-seven economists" were explicitly harassed, or worse, during the McCarthy era (2004, 180). Red-baiters made life at Stanford miserable for Paul Baran.[91] Paul Sweezy at the University of New Hampshire was prosecuted for refusing to answer a state legislative committee's questions about his political activities. A particularly nasty episode unfolded at the University of Illinois in 1950–1951, soon after the economics department started to recruit scholars from Cowles; the dean who oversaw the hiring process, Harold Bowen, was forcibly removed from his position.[92] Others (like future Nobel Prize winner Lawrence Klein) could not find a job because of their sympathies for Marxism or even progressive Keynesian views. Indeed Samuelson reports that "'Keynesianism' was a naughty word politically long after the war," frequently associated with Marxism in right-wing circles.[93] Some institutionalists who had been involved with the early policy experiments of the New Deal also appeared suspect of political partiality and liberalism, if not outright radicalism.[94]

Faced with these attacks, the profession kept a low profile and avoided direct involvement: the American Economic Association created the Exploratory Committee on the Status of the Profession in 1952 but it did not empower it to investigate specific academic freedom cases.[95] The result of the witchhunts was that Marxian economics was effectively muted for more than a decade within U.S. academia, even though the *Monthly Review* (which Paul Sweezy had founded in 1949 with journalist Leo Huberman) managed to carry on its operations and continued to command remarkable prestige among left-wing intellectuals worldwide. But one would have to await the rise of the New Left in the wake of the civil rights movement and the anti-Vietnam War mobilization for the movement (now renamed radical economics) to regain some legitimacy and experience a revival under the banner of the Union of Radical Political Economists.[96]

The other revolution was quieter, but no less powerful in its consequences. With the scientific competition with the Soviet Union accelerating, dominant institutions in the research economy (from the Ford Foundation to government-sponsored agencies) increasingly embraced the formal methods' promise of efficiency, accuracy and mastery of the social and economic world. When the social science program of the National

Science Foundation was finally born in the late 1950s, for instance, its administrators were extremely careful to assert its legitimacy by emphasizing the similarity of methods with the natural sciences, and by mainly supporting highly technical research (including pure mathematical theory).[97] A review of funding patterns by the National Science Foundation over the 1958–79 period shows its heavy involvement in quantitative research and econometrics, notably in the areas of productivity and large-scale modeling (for instance at the Cowles Foundation during the 1960s and 1970s). Furthermore, the best funded scholar over this period, Mordecai Kurz, was supported as head of the Institute for Mathematical Studies at Stanford University, where he coordinated an international network of mathematical economists around Kenneth Arrow.[98]

By the 1960s, economics departments increasingly educated students in developments in neoclassical theory and econometric techniques. U.S. academic economics as it developed through the intellectual medium of what came to be known as the "neo-classical synthesis"[99] (which relegated Keynesianism to the status of a special case of general equilibrium theory) was much less challenging in its policy implications than earlier stagnationist forms, which assumed that the economy was subject to chronic underemployment of capacities and thereby justified a much more active spending policy.[100] Now rekindled as "growth theory," American macroeconomics claimed to deliver the tools to outrun the Soviet Union in the competition for global economic power. Hence the key institutions in the U.S. research economy concentrated their support on those aspects of economics that were antagonistic neither to the interests of the United States nor to those of American capitalism.[101] It is quite remarkable that the only study of Marxian theory ever supported by the National Science Foundation was entrusted to the father of postwar orthodoxy, none other than Paul Samuelson.[102]

Economic Imperialism

The centrality of mathematics in economics is by no means unique to the United States, of course. As we will see in the following chapters, British economists, as well as a large segment of the French economics profession, are also very comfortable with mathematics as a theory-building tool. However, the intellectual and institutional trajectories leading to the mathematization of economics, and its implications for the broader shape of economic science, bear some unique characteristics in each of the three countries. The endless competition over technique in the United States, whether empirical or formalist, is largely grounded in a historically evolved professional culture that identifies such methods with objectivity and the pursuit of efficiency. It also plays a crucial role in the regulation

of the academic market itself. In a competitive and largely self-referential academic environment which is itself partly a product of that same boundary work against direct political involvement, the development of sophisticated mathematical tools, or the creative manipulation or application of established ones, has proved to be crucial in ensuring distinction and professional stature. Consequently, being able to master the right mathematical and statistical technology often takes the form of a strict moral imperative. This was strikingly formulated by one of my interviewees, a prominent academic economist who summed up the modus operandi of the discipline in the United States as follows:

> You are only supposed to follow certain rules. If you don't follow certain rules, you're not an economist. If you don't do it right, you're not *pukka*. . . . *Pukka* is the opposite of *kuchcha*. *Pukka* is brick, and *kuchcha* is dirt. *Pukka* is brahmin, *kuchcha* is outcast. *Pukka* means "high caste" in Urdu. So that means you should derive the way people behave from strict maximization theory; where people are maximizing economic art, that's *pukka*. *Kuchcha* . . . would be adding odd things to your argument, things that you have, the noneconomic arguments. So considering an argument where fairness played a role, for instance. Of course, there are people who do fairness in a *pukka* way. By being axiomatic. "I'm going to make these five axioms and then I'm going to derive how the world is." The opposite would be arguing by example. You're not allowed to do that, I know you're not allowed to do that. There's a word for it. People say, "That's anecdotal." That's the end of you if people have said you're anecdotal. . . . [Another thing is] what modern people say . . . The modern thing is: "it's not identified." Your causality is not identified. God, when your causality is not identified, that's the end of you. (professor, University of California, Berkeley, November 2003)

Characteristically, all the great scientific revolutions in postwar American economics relied extensively on the success of new formalizing technologies, which made the previous set of rules obsolete and fostered the image of cumulative scientific progress. The Samuelsonian revolution generalized the use of mathematical metaphors and the technique of economic modeling. The formalist revolution (Arrow-Debreu) imposed strict axiomatization. The rational expectations revolution drew on the rigorous modeling style of general equilibrium theory to require macroeconomics to rely on strict microeconomic foundations and the hypothesis of perfectly competitive markets.[103] By contrast, important intellectual challenges in postwar British (post-Keynesianism) or French (the regulation school) economics were based on new substantive frameworks rather than on technical virtuosity. The regulation school, for instance,

used very little, if any, mathematics, in spite of its "authors" coming almost exclusively from arguably the best mathematical college in the country (Polytechnique). We may contrast this with the fact that unorthodox approaches in the United States were obliged to conform to mainstream methodological and formalist standards.[104] Influential currents in American Marxist thought, such as John Roemer's work, use the tools of game theory and the analytical methodology of neoclassical economics to investigate classic Marxist questions.[105] In a world where training is homogeneous and scientific rules are fairly rigid, the only way to establish some form of legitimacy is by following the same methodological standards as the dominant group. Reflecting on the trajectory of American Marxism, McCloskey notes:

> The new analytic Marxists have produced an impressive literature doing MIT neoclassical economics as well as or better than the MIT neoclassicals. The plan is to argue in terms that the neoclassicals appreciate, as in Stephen Marglin's *Growth, Distribution and Prices* (1984). Rhetorically speaking the plan is admirable. We are not going to make progress in economics until we discover how to talk to each other. (1994, 155)

One consequence of this implicit consensus is that the different subfields of economics—which before World War II were organized around local and rather independent intellectual subcultures, from industrial organization to money and finance—have been unified by the common language of constrained optimization. The unification of this language has in turn motivated the expansion of economics into new and increasingly remote fields.[106] The discipline's ability to expand its range of empirical investigation has also been assisted by the greater availability of ever more detailed data, technological revolutions in computer power, and the explosion of social demands for economic expertise, as I discuss in detail later. Hence formalism and abstraction have enabled modern economics to evolve into an internally unified science capable of seizing opportunities to spread to a wide range of intellectual domains.

This imperialist expansion of modern economics is largely an American development, however. The European mainstream has been less eager to apply economic methodology to such a large variety of objects. It is, for instance, remarkable that the economic approach to human and social behavior was developed in the United States (Becker 1976), as were the school of public choice for the analysis of political behavior and the program to apply economic theory to the design of legal rules, which has gone by the name of "law and economics." In each of these cases, the theoretical innovation relied on extending the paradigm of the rational economic actor (i.e., optimizing under constraint) to individuals

and situations that were previously exempted from it: e.g. state actors, intimate relationships, and crime.[107]

These examples tend to vindicate Abbott's (2000, 144) argument that the formulation of "totalizing claims" is part of the nature of disciplinary development. Still, nothing in that argument enables us to understand the particular, substantive direction that totalizing claims have taken in American economics, namely, the derivation of *everyone's* behavior from constrained optimization rather than (for instance) the building of comprehensive frameworks (as in various forms of structuralism, which have been more common in Europe). The imperialism of American economics is rooted in a deep moral belief that no one stands outside of economic rationality and that, furthermore, money is the primary medium through which economic rationality expresses itself.

"Intelligent Conservatives"

The single most important reason for this imperialistic development of American economics is what we can loosely call the Chicago school. It is among Chicago economists that the search for neoclassical purity has reached its peak, both at the level of the single individual and at the level of the entire economy. First, *every* individual is a rational, self-interested (even rent-seeking) actor: public officials, elected politicians, husbands and wives, or criminals are no exception. The work of Gary Becker, George Stigler, James Buchanan, and Richard Posner finds its roots in this basic assumption. Second, the economy operates as the competitive model assumes: "Markets clear, decision makers optimize, money illusion is absent" (Reder 1982, 19). There are no rigidities; there is no market power.

An article Milton Friedman published in 1953, which is still today one of the most debated articles on economic methodology, perhaps best epitomizes both of these commitments. In "The Methodology of Positive Economics," Friedman formulated the controversial claim that economic theory should be judged not by the realism of its hypotheses but solely on its ability to correctly predict observable outcomes—as if the hypotheses were correct. Characterized as "instrumentalist" by Boland (1979), this position made the clarification of practical problems of policy making the relevant yardstick by which all "positive" economics should be evaluated.[108] Many commentators have concentrated on the "as if" methodological statement,[109] seeing it (quite erroneously, I think) as a general license for the kind of economic formalism that came to redefine the field in the 1950s and 1960s. This interpretation is doubly misleading. First, it casts Friedman as an economic formalist. But the association with institutionalism was, after all, quite prominent in Friedman's training (as well as in the training of other leading Chicago economists such

as Gary Becker).[110] Consider: his mentor at Rutgers, Arthur F. Burns, was an institutionalist economist. Friedman started his career working closely with Mitchell at the NBER before being hired by the National Resources Committee as a statistician during the New Deal. And one of his best-known empirical works, *A Monetary History of the United States* (which Friedman published with Anna Schwartz in 1963), was written in an arguably institutionalist vein.

Second, this interpretation misreads the particular intellectual context in which Friedman formulated his claim. To some extent, the emphasis on predictive accuracy can be read instead as a license for a certain form of *empiricism* directed against econometrics, as I argue later. More important, Friedman's argument was explicitly intended as a defense of laissez-faire economics against what he saw as two threatening tendencies developing in neoclassical economics: first, the claim, common since the 1930s, that "monopolistic competition" was widespread in the economy, and, second, any attempt to conceive of behavior as deviating from constrained optimization. Friedman deployed the criterion of predictive accuracy essentially as an argument for preserving these two central assumptions.

Friedman legitimated holding on to both of these hypotheses on the grounds that they were more parsimonious, less confusing, and yielded real-world predictions that were just as good. But convenience was not all there was to it. At stake were beliefs about economic reality itself, not simply about the *epistemological relationship* of economics to economic reality. The assumption that people behave rationally was not seriously challenged until the recent emergence of behavioral economics—but even that view remains marginal in economics today. To a large extent, the same applies to the hypothesis of perfect competition. Postwar Chicago economists (Director, Stigler, Posner, Friedman, Hayek, Becker) played a key role in legitimating the representation of the real economy as naturally competitive and downplaying various forms of economic concentration as efficient responses to market conditions that do not seriously threaten competition. (Importantly, these views were endorsed by conservative foundations, such as the Volker Foundation, or the Walgreen Foundation, which bankrolled some of the research done at Chicago, as well as Chicago scholars' more political pamphlets).[111] So successful was this line of argument that when John Kenneth Galbraith raised serious critiques against it in his best seller *The New Industrial State* [1967], his description was vehemently rejected, including by the then largely Keynesian economics mainstream.[112] Few economists were willing to entertain the idea that Galbraith's emphasis on the power of large corporations was a good characterization of the structure of the U.S. economy.

The effects of this naturalization of the competitive model as *the* world were far-reaching for macroeconomics. Not only was the perfect competition hypothesis largely accepted at face value, but it was also never subjected to rigorous econometric testing.[113] One prominent economics professor whom I interviewed lamented:

> The reason why we lost is that we sold ourselves to that methodology. You see, in economics you test hypotheses. But if the null is that the world is perfectly competitive, the data is always too weak to reject it. It is almost impossible to refute the null. Summers wrote an article for the *Journal of Finance* where he showed that it takes 5,000 years worth of data to reject the null of efficient markets. (professor, West Coast university, November 4, 2003)[114]

Friedman's instrumentalist epistemology has thus served to legitimate the preservation of a rigid version of price theory (in which nominal price or wage rigidities do not exist, for instance), which is perhaps paradoxical given the tendency of some to interpret his work as "anything goes" when it comes to hypotheses. It is precisely the point that anything does not go. In practice, Chicago's reluctance to accept empirical evidence or theoretical innovations that represented a threat for the competitive markets hypothesis was remarkably successful at both establishing perfect competition as the obligatory reference point and fostering a generally critical, if not dismissive, attitude toward econometrics.[115] Empirically, Chicago disciples in macroeconomics typically privilege more inductive studies of correlations associated with the method of "calibration"—an approach to parameter estimation that *starts from the assumption that the model is correct* and, in a typical Friedmanian fashion, is supposed to explain regularities documented by empirical studies. (This stands in contrast with the standard approach in econometrics, where a model is always *tested* against some alternative.)[116] The Chicago method is thus a strange mix of a quite dogmatic form of neoclassical economic theory with an empirical approach based on stylized facts and detailed microeconomic studies. Ironically, the latter are not dissimilar to the kinds of quantitative work that used to be carried out by many institutionalists. Hence the technique melded a then unparalleled mathematical prowess with the two perhaps most powerful and enduring ideals in American economics: the virtues of free markets and applied quantification.[117]

What has been uniting Chicago economists across generations in the postwar period (the interwar period was a much more diverse terrain) is the firm conviction, reproduced in model assumptions and modeling techniques as well as in the refusal to engage in econometric debates, that—on the macro front—competitive markets should, essentially, remain the baseline, "irrespective," as one interviewee said, "of what your eyes and ears tell you." Or maybe it is that "what your eyes and ears tell you" has been different at Chicago than what it has been elsewhere. In

the traditional neoclassical view, the competitive markets hypothesis was an unattainable ideal, against which the necessarily imperfect economic reality could be measured. If necessary, markets could be brought in line by means of active government intervention. In this view, natural economic reality was the world of imperfect competition.[118] This allowed economists to legitimate a certain role (both macro and micro) for the state as a protector against the market (in the case of externalities, for instance) *and* as an institution that was also in the business of fostering competition (hence the support for antitrust policies). In the postwar Chicago tradition, by contrast, the distinction between reality and ideal made much less sense—what comes out of Chicago writings (for instance, by Friedman or Stigler, both influenced by Aaron Director) was a much more *pragmatic* definition of the competitive markets hypothesis, in which none but the most egregious business practices posed a serious threat to the competitive system. This understanding made it easier for real markets to meet the competitive market standard *and* came to sustain a minimalist interpretation of antitrust policy as well as a strong antiregulatory streak.[119] Chicago *saw* (sees) the world in a very distinctive manner: natural economic reality *is* the world of perfect competition.

How can we explain sociologically the intellectual distinctiveness of Chicago economics within the broader U.S. field? Some have emphasized the university's position relative to state power–in this case, its relatively peripheral situation both with respect to the policy process and even within the city of Chicago itself. Being less involved in government, Chicago economists were less supportive of it, which further contributed to their isolation from it. Indeed, similar patterns could be observed with respect to both the Institut de France and, to a lesser extent, the French University, as well as for the Manchester school in England during the nineteenth century. But the equation between distance from political power (whether geographical or institutional) and political position is far from perfect. Ultimately, Chicago's distinctiveness may have had more to do with the lesser importance of foreigners in the department, the intellectual legacies of influential teachers with extremely long tenures (Knight, Friedman, Stigler, Becker), as well as with consistent patterns of recruitment and socialization through core courses in price theory, rigorous qualifying exams, and a workshop system designed to mold students into reliable adherents of the Chicago approach—"intelligent conservatives," as Richard Posner once put it.[120]

The Academic Roots of Public Expertise

We have seen that American political institutions and culture have played a constitutive role in structuring the jurisdictional and scientific orientations of American economics. Yet *administrative* mechanisms have also helped articulate distinctive conceptions about the exercise of public power and correlatively distinctive understandings about the nature of economic expertise and the role of economic experts.

Since the end of the nineteenth century, American officials have relied on institutions devoted to higher education and research to certify the quality of the economic experts whom they employ. This is true at all levels of the civil service: At the higher end, economists recruited from academia on a temporary basis usually occupy specific positions in a wide range of agencies, the Council of Economic Advisers being the most visible. At the lower levels of the civil service, public administrations have given formal recognition to the institutions of university-based professionalism as a basis for their own recruitment processes, classifying and matching candidates to administrative positions according to their specialized skills. The most remarkable application of this academic credentialism may be found in some of the independent agencies, such as the Federal Reserve or the Antitrust Division of the Department of Justice, where a PhD from a highly ranked department is a sine qua non for obtaining a position. In 1996, the thirteen branches of the Federal Reserve System employed more than 250 PhD economists, likely the highest concentration anywhere in the country.[121] Finally, governmental administrative agencies have come to routinely purchase expertise through a market for technical advice in which suppliers are generally located outside of state agencies—in universities mainly, but also in think tanks and private consulting bodies.

The Making of the Economic Expert

In a well-known paper about the role of economists in American policy making, Robert Nelson identified the Progressive Era as the period when a distinctive set of dispositions (in Bourdieu's terminology, an *habitus*) vis-à-vis the place of the economic expert in American government was forged. It was during that time that the economist, he argues, came to be regarded as "a professional expert who advises government in technical and scientific matters and takes social values and political preferences as given. Once these values and preferences have been expressed by political leaders, economic expertise can be applied to make the governing process work as efficiently and as effectively as possible" (1987, 53–54).

Whether Nelson's characterization represents a reliable analysis of the relationship between economists and the political realm, or whether it should more likely be read as an instance of the ideology that underlines it, does not really matter for our purpose, since our argument is that both are closely intertwined anyway. More interesting, perhaps, are the historical conditions under which such an understanding developed. As sug-

gested earlier, the "professional ideal" took shape around the turn of the century during the coincidence of, on the one hand, academics' search for insulation from political controversy and, on the other hand, an emerging institutional niche for economic expertise within government and business. We thus have good sociological reasons to think that the attitudes Nelson identifies as characteristic of the relationship between economists and government are not sui generis to the practice of economics, in a manner analogous to Merton's (1973) ethos of science, for instance. Rather, they have been forged in the context of the dynamic and highly peculiar interaction between academic science and policy in the United States.

During the Progressive period, which extended roughly from the mid-1880s to World War I, social movements sought to assert the autonomy of governments at all levels (municipal, county, state, federal) by promoting a class of public servants that would be immune to political patronage. In this major political transformation, members of the then emerging professions were incorporated into various public bodies as governments engaged in a deliberate attempt to "remove various economic and social problems from the political arena" (Silberman, 1993, 276). For instance, the creation of independent regulatory commissions as well as federal institutions for data collection relied extensively on the new professional associations (American Economic Association, American Statistical Association) for expertise and guidance. A large number of academic economists took up temporary positions in such institutions, which also served as important training grounds for the younger generations of researchers.

In some cases economists were more directly involved in policy design. Perhaps the most radical of the Progressive civil service reform laws was drafted by John Commons, then at the University of Wisconsin, and enacted under La Follette's governorship of that state. Commons, along with several of his academic colleagues, was appointed to various state commissions, prompting the critique that in Wisconsin the university governed the state. Yet, as Commons wrote in his autobiography:

> I could never see it that way. I was never called in except by Progressives, and only when they wanted me. I never initiated anything. I came only on request of legislators, of executives, or committees of the legislature. The same was true of many other members of the faculty. . . . [Each professor] can furnish only technical details and then only when he is wanted by politicians who really govern the state. So with the "brain trust" at Washington. [Commons is writing during the New Deal.] I see individuals coming and going according to whether or not they furnish the President with what he wants. (1963, 110)[122]

Commons presents public involvement as the outcome of a competitive political process. In his account, the pattern in Wisconsin was not a

government of experts, as critics would have it. It was, at most, a government that relied on external expertise to govern. There was thus nothing essentially technocratic about Commons's involvement—it was, rather, understood as the purchase, by state agencies and reform organizations, of a set of discrete technical services that could be revoked or stopped at any point in time (as they indeed were with the change of administration in Wisconsin in 1914).[123] In this instrumental relation, it was the university, and not the state, which "functioned as a permanent professional base from which [Commons] asserted claims to expertise, established policy connections and made temporary forays into the world of policy research and influence" (Schweber 1996, 173).[124]

As in Wisconsin, administrative rationalization in other states and at the federal level also relied extensively on the emerging professional communities rooted in the universities, albeit to a somewhat lesser extent. Certainly, the pattern was not entirely new,[125] nor did it all come from the demand side, as Commons suggests. As historian Daniel Rodgers (1998) has shown, German-trained economists had brought the model of expert-staffed public inquiry commissions back from Germany and used these commissions to influence state and federal policy after new academic norms made more open activism taboo. The AEA aggressively sought to make itself relevant to the federal government by lobbying for the establishment of standards for statistical and economic work in federal agencies, particularly in the Department of Agriculture. A decisive push for the formalization of professional standards came during World War I when the U.S. Civil Service Commission officially asked the AEA to examine and classify "some 900 cards filled in by economists and statisticians who had expressed their willingness to serve the government." The AEA obliged and in 1918 complemented this task by creating several specialized committees to channel economic experts into public service.[126] No fewer than sixteen major AEA figures, among them Frank Taussig (U.S. Tariff Commission and Foreign Trade Committee), Mitchell (War Industries Board), and Edwin Gay (Central Bureau of Planning and Statistics) ended up working in federal war agencies.[127]

Successive American governments drew upon professional organizations and institutions (which, in this period, were almost exclusively academic) to build up their own capacities in the economic domain. In the Progressive conception, the new forms of expertise on which governments had to rely remained socially defined and validated *outside* the political system (not *by* it as in France or Germany). Through the formal involvement of academic institutions and actors, public administrations implicitly recognized the economic expert as an academic whose value lies in the possession of a specific competence. As I will show later, such understandings have continued to shape the relationship between

economists and the state throughout the twentieth century—the institutionalization of the Council of Economic Advisers and other public advisory bodies (for instance, the Congressional Budget Office) being among the most conspicuous aspects of this administrative regime.

Conversely, the early and formal acknowledgment by political institutions of the "usefulness" and technocratic capability of academic economists has shaped the latter's identity in powerful ways. Andrew Abbott (2005) describes this codependent pattern as the "linked ecologies" of states and professions. It encouraged academic institutions to "professionalize" along technocratic lines and to embrace the attitudes that are usually required of the regular civil service. Through the "demands for expertise" placed upon the academic sector, American state administrations participated in the structuring of the academic profession itself, in the shaping of its substantive orientations, and in the construction of particular professional roles and attitudes among American economists. By relying on academic disciplines to establish their own job classifications and recruitment criteria, public institutions fostered disciplinary specialization and the establishment of strict certification mechanisms.

American Foundations and the Public Purpose of Social Scientists

Although the practice of associating university economists with the political and policymaking processes in the United States became fairly habitual during the Progressive Era, only a few government agencies made use of *permanent* economic experts before the New Deal. The two major exceptions were the Federal Reserve Board, where economists had been present from the institution's creation in 1913 (having helped design it), and the Department of Agriculture, where a practice of using economic research to inform the design of policy had led to the formation of a specialized research unit in 1921, the Bureau of Agricultural Economics.[128]

The 1920s represent an interesting transitional period between the progressive drive for efficiency and faith in rational knowledge, on the one hand, and the activism of the New Deal and World War II, on the other, when economists poured into government service. The experience of World War I had already changed both the practice of economic policy making and the government's willingness to intervene in the economy. Emergency government during the conflict had a considerable impact in legitimating activist approaches to economic policy, in bringing economic experts into contact with government, and in developing awareness among public sector officials and businessmen about the necessity of improving economic and statistical information.

In many ways, however, it was capitalist foundations that epitomized and promoted this new conception of the role of certified social-scientific knowledge in bringing about ordered and controlled social progress. During the interwar period, an institutional nexus centered around the Carnegie Corporation and the Laura Spelman Rockefeller Memorial Fund served as a sort of interface between universities and government agencies and helped promote the view that factual knowledge should be the primary guide of government action. In Washington, Herbert Hoover contributed to enhance the relationships between government departments and the extra-governmental research economy that was then developing among philanthropic foundations and research organizations. During his terms as secretary of commerce (from 1921 to 1927) and then as president of the United States (from 1928 to 1932), his administrations routinely commissioned work from academics, "sponsored scholarly studies, called conferences, enlarged statistical services, and assembled and used a large battery of expert advisers" (Lyons 1969, 50). Mitchell's National Bureau of Economic Research, for instance, worked almost exclusively on projects commissioned by the Secretariat of Commerce and financed by philanthropic money.[129]

This economic research sector remained largely external to the state, however.[130] Rather than looking at expert knowledge as a technocratic arm of the state itself, Hoover understood it as facilitating the public involvement of private actors. The Committee on Recent Economic Changes, for instance, was intended primarily to help inform the decisions of the new managerial elites of American capitalism, and much less to serve as a guide for active policy reform.[131] Indeed, the Hoover administration remained highly suspicious of government economic intervention—even after the outbreak of the Great Depression and in spite of the more ambitious proposals of some of his own economic advisers.[132]

Still, the Hooverites' attitude toward the rational use of social-scientific research reflected a certain technocratic pragmatism, which would soon come to characterize the New Deal. Yet whereas much of the social-scientific research encouraged by Hoover had been financially sponsored by private organizations (primarily the Social Science Research Council [SSRC] and the Carnegie and Rockefeller foundations), the Roosevelt administration created a momentum for building up research capabilities ***within*** the structure of government itself, sometimes by relying on the very same personnel. For instance, two key personalities in Hoover's system, Wesley C. Mitchell and Charles E. Merriam (a political scientist, former head of the SSRC), were appointed at the head of the National Planning Board, a research organization within the Public Works Administration, which would soon become a key source of

economic advice for the White House, acting as a think tank for long-term economic issues and (in later years) postwar planning.

The incorporation of economists in government during the New Deal relied on two complementary trends on the supply and demand sides of the labor market. On the supply side, there were simply no academic jobs to absorb the flow of young economics graduates who came freshly out of academia in those years. Government employment thus served as a safety valve in an academic labor market devastated by the Great Depression.[133] In addition, the shocking context of the Depression spurred the cohort of "young Turks" to see new opportunities to exercise their knowledge for the public good and promote their expertise.[134] On the demand side, the new administration's unprecedented activism in the face of the slump created numerous agencies, all of which immediately sought to enlist specialists drawn from academia.[135] Isador Lubin, who acted as commissioner of the Bureau of Labor Statistics, commented: "During the early days of the present administration virtually every university in the country was combed by the various federal agencies for competent economists" (Lubin 1937, 216).

The decades of the 1930s and 1940s thus represented a double watershed for economics, both an institutional and an intellectual one. On the one hand, Roosevelt's massive resort to university-educated manpower secured the rise of experts in the administrative machinery. It also established the principle of the "academic in government," which would later lead to the creation of permanent and academically grounded economic advice institutions, among which the Council of Economic Advisers figures most prominently. On the other hand, the bitterness of economic policy debates during that era and the ultimate failure of the most radical economic ideas and policy schemes to get securely entrenched also signaled the limits of the academics' influence in the political domain.

As many scholars have shown, the economic logic underlying the first New Deal was proto-Keynesian in some of its elements, but the well-known British economist (who had yet to publish his *General Theory*) had little to do with it. Roosevelt in 1932 had campaigned against Hoover's failure to balance the budget, and fiscal conservatives occupied prominent positions in his administration.[136] The earliest measures of active government involvement, such as the public works programs and the attempt at industrial planning, were framed as a series of pragmatic responses and emergency measures, rather than as a comprehensive, "paradigmatic" policy strategy inspired by a brand-new theory.[137] In fact, the early New Deal measures drew mainly on indigenous ideas in vogue since the 1920s. Innovations in labor and agricultural legislation, social security, public utility regulation, or corporatism were influenced by institutionalist economic thinking (many

students of which had been recruited by the new agencies) and local policy experiments, such as John Commons's earlier activities in Wisconsin.[138] The renewed emphasis on the necessity of increased business regulation and planning had also been popularized by Adolf Berle (a Columbia law professor) and his student Gardiner Means in their successful book *The Modern Corporation and Private Property* (1932) and various other works. By 1935, Means, who had in the meantime become one of the most prominent economic advisers of the early New Deal, further elaborated the theoretical rationale for his structural policy approach: the present lack of market adjustment, he argued in a government report, was due to industrial concentration and the propensity of large corporations to "administer prices." This was a far cry from Keynes's "animal spirits" and the deficiencies of effective demand but consistent with the long-standing American policy focus on large corporations' penchant for manipulating the price system.

Roosevelt's brain trusters soon found themselves the object of relentless attacks on the grounds that they exercised powers way beyond their formal positions. Columbia institutionalist economist Rexford Tugwell,[139] who with Means was one of the chief proponents of planning, became a "favorite target for conservative critics of the New Deal" (Hofstadter 1963a, 215). As a result of this contestation, some of the most prominent institutional innovations of the New Deal, particularly those that ran counter to traditional economic strategies, failed to secure a durable impact on government policy. The comprehensive industrial planning experiment initiated by the National Industrial Recovery Act was short-lived, struck down by the Supreme Court in 1935 in the midst of widespread dissatisfaction. Stryker's work on the New Deal has shown that another "radical" institution, the economics research section of the National Labor Relations Board, did not succeed better in creating a niche and was ultimately dismantled by Congress in 1940. The National Resources Planning Board survived longer but ultimately suffered the same fate in 1943. Its advocacy of welfare programs, full employment policies, and planning was perceived to be socialist in inspiration; the organization, which had reached a staff of nearly three hundred people in 1943, fell because of the charge that it promoted irresponsible government spending and government interference in business activity. On the other hand, agencies whose economists defended a more orthodox approach based on competition-enhancing mechanisms, like the Social Security Administration and the Treasury, flourished.[140]

While planning ultimately failed to mobilize a wide constituency as a strategy to restore growth, the case for unbalanced budgets gradually gained support through the 1930s as a more acceptable alternative, not only among economists but also among other public officials and political

actors. The second New Deal saw the first self-conscious adoption of explicitly expansionist budgets. The persistence of the Depression and the administration's failure at keeping the budget in balance opened a window of opportunity for the promoters of a different approach to macroeconomic management.[141] In part, the idea of "compensatory spending" by the government during recessions was not unfamiliar in the United States and had been advocated by Chicago economists since the beginning of the slump.[142] But of greater importance to this shift was the conversion of a number of academics and high-ranking officials to the Keynesian analytical framework around 1936, the year Keynes published the *General Theory*. By the end of the 1930s, deficit spending was advocated by a small network of personalities in key governmental positions, including at the Federal Reserve Board, the National Resources Planning Board, and the Department of Commerce.[143] A clique of young Keynesian converts around Alvin Hansen at Harvard carried the message in academia.[144] It is ultimately this disparate constellation of people which helped win the budget battle in 1938. Even then, it took considerable lobbying and public activism to turn it into a policy strategy. Ultimately, the war may have been more important in legitimating both the new economics and the new role for economists.

Institutionalization: Macro and Micro

In comparative perspective, the wartime involvement of academic economists with the American federal government is quite remarkable. The proportion of authors of economic articles in the main academic journals who held government appointments jumped from 2.7 percent in 1932–33 to 16.8 percent in 1942–43.[145] By contrast, in the United Kingdom the incorporation of economists in the government machine during the wartime, while unprecedented, was more modest in quantitative terms. The British war government relied on a small number of elite professors, with the traditional, generalist civil service continuing to provide for the main positions. In France, top-level technocrats essentially ran the war and the Vichy government (although many of them developed some form of economic expertise during the 1930s).

In America, the massive influx of economists into federal service raised the question of professional standards with particular acuity. Public administrations wanted to make sure they were hiring qualified people. The National Resources Planning Board, reproducing on a larger scale a process familiar since World War I, sought the cooperation of the American Economic Association for classifying its members by field of expertise and evaluating their credentials.[146] Academics, on the other hand, worried that expansion without certification would devalue economic

research altogether. One proposal to counter the perceived threat of weakened standards called for the development of nationally administered "initiation procedures" for the economics profession (Copeland 1941).

Samuelson has referred to World War II as the "economists' war." Certainly, the knowledge of quantitative measurement techniques of all sorts appeared critical to the effort to mobilize productive capacities and allocate resources. Economists, especially the younger generations, who had had more technical exposure, possessed skills that were not available elsewhere. As one interviewee who worked in the Bureau of Labor Statistics during the war told me: "In the entire Bureau I was the only one to know how to use a slide rule."[147]

The necessity of planning for the military effort, a need that continued as the nation gradually demobilized after the end of hostilities, brought about an extraordinary overhaul of the federal administrative structure, which helped transform both the role of economic expertise and the nature of economics itself. As we have seen, the bankruptcy of the prewar economic order (both national and international) had already convinced large numbers of politicians and high government officials of the necessity to reform the institutional bases of capitalist economies. The war provided further legitimation for these changes: economic planning, which had been advocated and attempted rather unsuccessfully during the New Deal, was finally undertaken out of military necessity. Pump priming could not be avoided, given the scale of the war effort, and provoked little controversy. Even prices were brought under federal control.

The "suspension and reshaping of expectations" during the military conflict, as Hirschman (1989) described it, created the conditions for a unique level of expert involvement. The new institutions brought together young economics graduates, some of whom would later rise to scientific fame: the young Milton Friedman and Paul Samuelson served at the National Resources Planning Board; Simon Kuznets and Robert Nathan at the War Production Board worked on military planning using the national income accounting techniques they had developed at the Commerce Department; John Kenneth Galbraith was "price czar" at the Office of Price Administration. As Mirowski (2002b) has shown, economists were also recruited by military agencies, which brought them into contact with mathematicians, physicists, and the new field of operations research. The Dutch physicist Tjalling Koopmans, for instance, developed a model of optimal shipping routes and shipping convoy sizes while employed by the British Merchant Shipping Mission in Washington and shortly after the war became heavily involved in linear programming through his connections with operation researchers working at the Department of Defense (particularly George Dantzig). The influence of experts was especially

powerful in the international domain, where a transgovernmental alliance of economists at Bretton Woods—both American (Jacob Viner, Alvin Hansen, Harry Dexter White) and British (John Maynard Keynes, James Meade, Lionel Robbins)—was given extraordinary autonomy to forge the postwar liberal international economic order.[148]

The position gained by economists during the conflict provided a strong argument for acknowledging formally their specific role in government, both as highly skilled technicians within the administrative structure and as aides to decision making.[149] This resulted, first, in continued reflection on the professional requirements for the employment of economists in government service and, consequently, increased reliance on advanced degrees. A second consequence was the creation, by the 1946 Employment Act, of the Council of Economic Advisers in the White House and the Joint Economic Committee in Congress. The main argument in favor of the CEA was that it would provide the president with professional economic advice. But in contrast with its most immediate and vocal predecessor, the National Resources Planning Board, the CEA was a small and purely advisory structure with no practical authority. As such, it offered only a limited challenge to Congress and other powerful executive branch economic agencies such as the Treasury and the Bureau of Budget.

THE PLACE OF THE CEA

The Council of Economic Advisers consists of three principal members and relies on a small (twelve- to twenty-member) staff of professional economists, who are generally drawn from academia on temporary rotations. Out of twenty-three CEA chairmen since the beginning of the institution, all but four were academics, and all but two held an economics PhD.[150] Academics have also become dominant among CEA staff. While less common during the Truman administration, academic staffers became routine under the chairmanship of Arthur Burns (1953–56) and even more under Walter Heller (1961–64). This evolution has led some commentators (for instance, De Long 1996, 42) to describe the institutionalization of a strong academic core in American economic policy making as a historical accident. Yet such an explanation overlooks an important fact about the structure of American political institutions. As pointed out in the analysis of the New Deal earlier in this chapter, reliance on academic institutions has long appeared a normal course in a country that has traditionally filled its top civil service positions with outsiders. In fact, academic economic expertise has not been confined to the CEA but has gained prominence in other administrative bodies since the war, with (among other trends) the institutionalization of chief economist positions at the top of each federal department and agency.

Many observers have interpreted the sheer existence of the CEA as a de facto "advocacy group for mainstream economics" within government, and so see the institution as a powerful agent for the routine incorporation of economic arguments into policy discourse.[151] The agency provides highly visible government positions that are available to the academic elite and employs dozens of credentialed economics PhDs. On the other hand, this situation does not by itself guarantee the institution a powerful influence on policy. Rather, the latter depends almost exclusively on how seriously the president, who has many other sources of advice, not least a personal assistant for economic affairs, takes its recommendations.[152] Historically, the CEA did not gain the upper hand in economic matters until the Kennedy administration, when the agency's commitment to full employment, encapsulated in the 1962 *Economic Report to the President* and implemented with the Johnson-Kennedy tax cut of 1964 (which CEA chairman Walter Heller forcefully lobbied for), signaled a confident, technocratic, Keynesian turn in macroeconomics. Enthusiastically supported by the vast majority of the profession, the tax cut is often regarded as the golden age of economists' influence on American policy.[153] Two of the authors of the 1962 report were future Nobel Prize winners (Robert Solow and James Tobin). Paul Samuelson and John Kenneth Galbraith were close advisers to Kennedy himself. The economists' influence extended beyond the CEA: the director of the Bureau of the Budget and the undersecretaries of the Treasury were all economists.

Still, this golden age looks like a rather short-lived episode when placed in historical perspective. Part of the CEA's authority in the 1960s relied on Kennedy's atypical openness to academics and on the agency's relative monopoly over technical economic expertise, particularly the use of new conceptual tools such as the full employment budget or the notion of "potential output" of the economy. After the heyday of the mid-1960s, however, economic expertise diffused rapidly to other government agencies, which could then argue more effectively with the CEA and inevitably mitigated the council's technical authority:

> CEA cannot blow people out of the water with the depth of its analysis like it could do it in the 1960s. Few people understood what the term "multiplier" meant in the 1960s, much less were able to argue with the CEA's argument about a tax policy to stimulate the economy. When CEA said that the effect of a specific tax action on investment was such-and-such there wasn't any other agency doing its own empirical work to argue with it. But now, Treasury may say: "No, it's Y." And Labor, "It's Z." (quoted in Porter 1983, 414–15)

More fundamentally, no single government agency was ever able to dominate the definition of American macroeconomic policy, and the CEA is no exception. Policy orientations in the macroeconomic domain result from a power interplay among administrative institutions (including the Federal Reserve), as well as from a complex and competitive political process between the presidency and Congress. As institutionalist scholars have shown, new economic ideas in the United States benefit from the large number of points of entry to penetrate the administrative apparatus, especially when traditional policy paradigms are being challenged by an economic crisis, and expert consensus is low. Yet the same balkanization also affects their institutionalization in the long run, since political actors, administrative departments, and interest groups compete with one another for influence. All the major paradigmatic shifts in macroeconomic policy—the New Deal, the 1960s turn to Keynesianism, and the supply-side revolution in the 1980s—have exemplified this pattern. New Deal administrations were divided between institutionalist/pro-planning agencies (National Recovery Administration, National Labor Relations Board), "Keynesian" agencies (Federal Reserve Board, Department of Commerce), and traditional neoclassical agencies (Treasury, State Department).[154] In the 1960s, the CEA's strategy of what Lekachman (1966, 287) has termed "commercial Keynesianism" (or a preference for business tax cuts), won out against the alternative of more aggressive fiscal policies promoted by the Labor Department and over the opposition of the Federal Reserve.[155] And the first Reagan administration pitted a traditional neoclassical Council of Economic Advisers against a monetarist Federal Reserve and a supply-side Treasury.[156] In fact, when the CEA chairman, Harvard professor Martin Feldstein, publicly aired his disagreement with the president on the economic implications of massive federal budget deficits, he had to resign from his position.

THE ECONOMICIZATION OF SOCIAL POLICY

Since the CEA's creation, its autonomy has been severely curtailed by its political dependency on the White House and by the sharing of competences with other economic agencies. Relatively cautious conceptions of the fiscal instrument, which privilege "automatic stabilizers" (e.g., transfers and taxes) over discretionary policies, as well as the progressive evisceration of these automatic stabilizers since the 1970s, have also limited the government's margin of maneuver in *macroeconomic* affairs.[157] Yet this does not mean that the CEA should be dismissed as irrelevant. Instead, we should expect to find the influence of this highly placed staff of economists in areas other than macroeconomic stabilization. We should search for evidence of the diffusion of an "economist's

view of the world" which has turned *microeconomic* tools and concepts (e.g., efficiency, opportunity, cost-benefit trade-offs and incentives) into the standard language of public policy.[158]

The postwar institutionalization of economic expertise in government was indeed also very much about the increasingly routine use of technical, microeconomic tools to evaluate and transform a myriad of micropolicies in fields such as education, health care, social policy, environmental policy, and market regulation. Much of this transformation involved the consolidation of a new professional role: the "government economist," now recognized as a separate occupational specialization. Many of the economic experts recruited into government during the 1930s and World War II were temporary appointees. Starting in the late 1940s, however, economic expertise became a more enduring element of the civil service. Viewed over the course of the century, the federal government's in-house capacities in the economic domain expanded considerably. Figures from the Office of Personnel show that the number of federal employees listed as "economists" grew from about seven hundred[159] in the late 1920s to a little over five thousand in 1997, with a peak toward the end of the 1970s. Figures 2-5a and 2-5b show this dramatic buildup of economic capacities in the 1960s and 1970s, particularly in newer and smaller agencies such as the Environmental Protection Agency and the Department of Energy (this also holds true for many departments not included in the graph, including Transportation, Education, and Justice). The figures also illustrate the reinforcement of economists in traditional centers, most prominently the Treasury and the Department of Labor.[160]

With expansion came an increased formalization of how to define an economist, according to both functional professional domain and level of skill; as we have seen before, this formalization was achieved through the combined mobilization of bureaucratic and professional resources. In the 1950s the AEA proposed, through the voice of its Committee on Economists in Public Service, that "a substantial piece of competent, independent economic research" be required for the recruitment of government economists in the higher grades.[161] The formal position classification standard adopted in 1963 called for "the full understanding and competent application of the basic tools of the profession" for people in "economist" positions.[162] Interviews I conducted in various governmental offices (Congressional Budget Office, Small Business Administration) suggest that the PhD has become an implicit requirement for many specialist positions.[163]

By and large, the work of government economists is not associated with macroeconomic stabilization (though the design of national accounts and macroeconometric models did at one point employ legions of

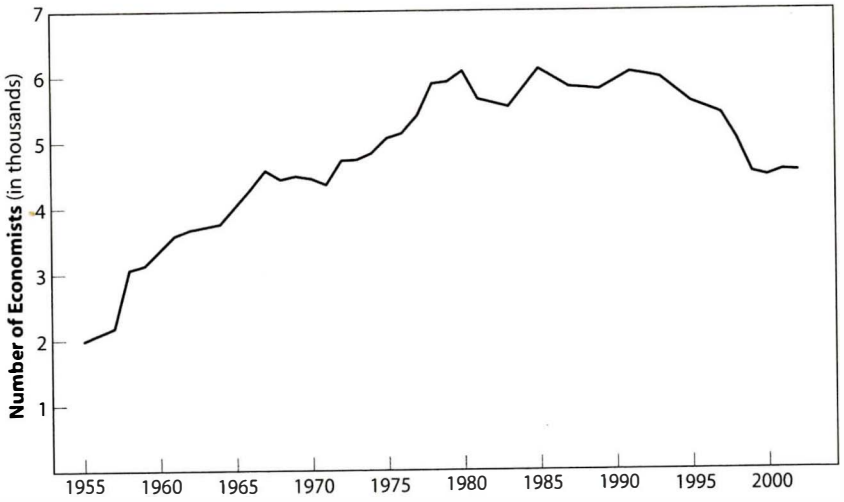

Figure 2-5a. Total number of economists in American federal government, excluding Congress and Federal Reserve, 1955–2002.

Source: U.S. Office of Personnel Management, *Occupations of Federal White and Blue-Collar Workers*, 1955–2002.

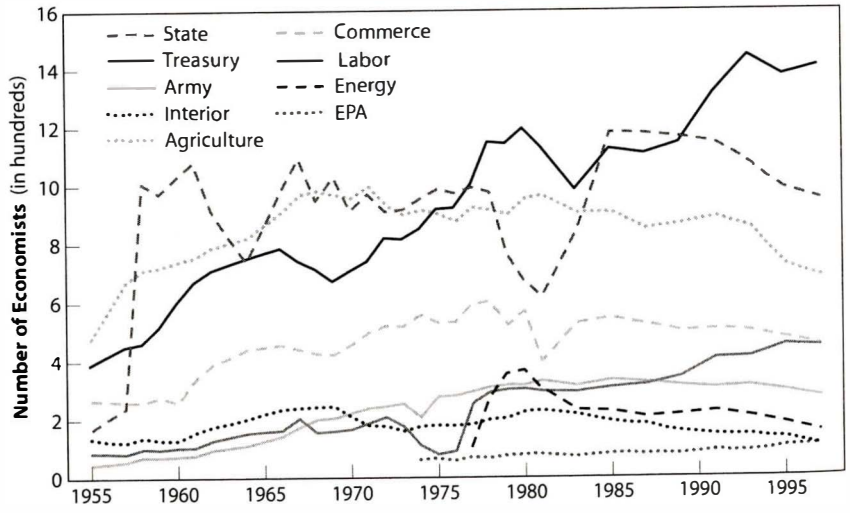

Figure 2-5b. Number of economists in selected federal government departments, 1955–98

Source: U.S. Office of Personnel Management, *Occupations of Federal White and Blue-Collar Workers*, 1955–98.

economists and statisticians), but instead involves the use of microeconomic tools and concepts to evaluate social programs, design regulatory rules, or manage externalities. Theodore Porter has shown that cost-benefit analysis in the United States emerged among military engineers and was taken over by economists only after World War II. From the Department of Defense, cost-benefit analyses "spread to all kinds of government expenditures, and later even to regulatory activities," as well as to the assessment of public goods such as education or health (1995, 188). The technique of program budgeting (institutionalized as the Program Planning and Budgeting System [PPBS]), for instance, began as a formalization of bureaucratic routines associated with wartime controls and planning. It grew by adding capacities related to the management of an ever-expanding welfare economy and by taking advantage of the emergence of new academic specialties among economists.[164] In 1965, the vogue of these ideas was encapsulated in President Lyndon Johnson's decision to establish a "special staff of experts who, using the most modern methods of program analysis, will define the goals of their department for the coming year. And once these goals are established this system will permit us to find the most effective and the least costly alternative to achieving American goals" (quoted in Novick and Alesh 1970, 11).

Although PPBS did not survive very long as a management technique, it did have important long-term effects in securing a large and organized presence of economists in government service and more generally in public policy research at both rank-and-file and management levels. In particular, it established the principle of a core staff of economic experts within each government agency that could systematically evaluate departmental proposals from an economic point of view. In 1974, the Congressional Budget Office (CBO) was created with the mission of investigating the government's budget proposals and their potential alternatives.[165] Since then, any piece of legislation must *by law* be accompanied by cost estimates from the CBO. Outside government, the Brookings Institution conducts further checks on the budgetary process.

Certainly, microeconomic questions are just as politically controversial as macroeconomic ones. Johnson's last chairman of the CEA, Arthur Okun, noted rather bitterly:

> On the micro front the CEA is flying in the face of all of the political pressures. . . . The one eye-opener to me as a young man from academia coming to Washington was the intensity of these producer interest group pressures on all sorts of micro economic decisions. . . . Almost invariably these producers' interests are contrary to the special

interests of economic rationality. That's a big uphill climb. (quoted in Hargrove and Morley 1984, 297)

Relative professional consensus (as exists on many microeconomic issues) is never a sufficient condition for policy change. Still, the diffusion of microeconomic approaches certainly transformed the culture of policy analysis, as economists brought with them a general inclination to organize socially desirable outcomes (environmental protection, poverty reduction, public health, occupational safety, etc.) through the use of incentives and the price system, and to regard direct government interventions as generally impairing the efficiency of the economy.[166]

Political critiques, both from the left (government action is insufficient and biased toward big business) and from the right (government action is inefficient), also sustained this transformation in the aftermath of the War on Poverty, fueling the effort to subject all public policies to a rigorous economic evaluation. Executive branch agencies, congressional bodies, and public policy research organizations found themselves under pressure to incorporate economic tools and approaches into the evaluation of economic and social policies, budgetary operations, as well as legal rules, and to encourage the development of economic methodologies best suited to their role.[167] By the mid-1980s, many government organizations—for instance, the Environmental Protection Agency, Antitrust Division at the Department of Justice, the Office of Policy Analysis at the Department Interior—were in fact required to properly train their staff in economic methods. And so the revolution in the use of applied microeconomics for policy purposes covered a broad spectrum, from industrial regulation to social policy.

THE EXPERIMENTAL LOGIC IN AMERICAN PUBLIC POLICY RESEARCH

Referring to the social science explosion that accompanied the expansion of social programs in the wake of the War on Poverty, one interviewee said that "this was a sort of peak for what officials in politics and public policy expected out of economic research." People were confident that "with enough research you could solve almost any probem" (senior fellow, Brookings Institution, August 12, 1999). One particularly interesting development in this respect, and a good illustration of the remarkable political logic at play here, was the vogue of social experiments. As a method, social experiments take inspiration from controlled trials in medicine, using random assignments of applicants to a social program (e.g., in skill training, education, housing, health) to compare policy outcomes in the recipient (or "treatment") group to those in the control group. One of the first large-scale social experiments, grown out of an MIT economics dissertation, was carried out for the Office of Economic

Opportunity as the New Jersey Income Maintenance Experiment in the mid-1960s (to evaluate whether a guaranteed minimum income would be feasible without causing the labor force to shrink). In the following years income maintenance experiments were initiated through multicity projects. Other federal agencies adopted the technique, which in this way spread to other domains, including housing, vocational training, education, and welfare reform (Orr 1999). By the end of the 1990s, about ten major social experiments were still initiated each year, financed primarily by the federal government, state governments (increasingly), and the Ford Foundation.[168]

The comparison with other countries is instructive here. It suggests that in both scale and character, much of this research is a distinctively American specialty. The number of large natural experiments exploded during the 1970s at the same time that controversy over the legacies of the Great Society policy agenda mounted, and social policy analysis decisively veered toward economists.[169] Yet this development may be more than a simple, natural consequence of state expansion itself (otherwise we would observe a similar trend elsewhere). Rather, it is deeply embedded in the nature of American welfare politics, with its deep moral and practical concerns about the effects of social policy on individual behavior. In a country Esping-Andersen (1990) identifies as the archetypal "liberal" welfare state, government-sponsored social programs were suspicious enough that they had to be subjected to systematic policy evaluation. Social experimentation can thus be interpreted as another "technology of distance" from politics (Porter 1995, ix). As Harold Wilensky (2005) has suggested, however, the narrow conception of policy effectiveness embodied in experimental and quasi-experimental methods has helped overdetermine the finding of many experiments that policy has no impact, thereby vindicating the original suspicion and fueling the lack of support for program development and follow-through.

The dramatic reorganization of public policy research around an experimental logic is also tied to the country's federal structure, which provides a natural setting for the exercise of experimental, as well as pseudoexperimental (or "microeconometric") methods.[170] As the policy reforms undertaken during the Reagan presidency turned initiative in social policy matters over to lower levels of government, states became testing grounds for a variety of social programs, and cross-state variations were seen as increasingly relevant to social-scientific methods.[171] One observer of this transformation described it in the following way:

> We've managed to convince the government that to understand how politics affects anything they should do random precise, controlled experiments. Some workers should get the training and some should

not. We can see whether the training has any effect.[172] That's tough for governments to do that obviously. Partly because the U.S. is so big, with lots of states, we managed to do that. (professor, Ivy League university, May 1999)

The initiative, then, did not come entirely from politics. Economists themselves played a role in actively promoting their new research methods vis-à-vis their funding sources in public policy and in the foundations, putting the administration of policy itself at the service of research in the process. And it is in this process of interaction between policy demands, the greater availability of microeconomic (individual-level) data that derived from them, and the evolution of tools (e.g. the reformulation of Cowles's econometric method by microeconomists) that both public policy and economics got transformed. These characteristics, however, are predicated on specific representations about the legitimate scope and nature of state action in America, as well as the need for public agencies to justify their actions—and do so according to market criteria to boot. As Samuel Bowles wrote in an insightful piece, in practice cost-benefit analyses and other public expenditures criteria "tend to reintroduce in veiled form the very same market criteria which govern resource allocation in the private sector" (1974, 130).

The Economics Industry

It should be clear by now that much of the policy-relevant economic research in the United States is not conducted directly by government agencies themselves but is routinely externalized to an "economics industry" (the term is from Stein [1986]) of outside contractors working in close connection with academics. American distrust for the federal government prerogative thus goes beyond a suspicion of its intervention in social and economic affairs; it also extends to the government's competence when carrying out policy-relevant research.[173] A senior economist from the Congressional Budget Office thus lamented to me that

> the research orientation (in government) is pretty low. When you have to address daily policy needs, you cannot do research. At CBO, for instance, demands from Congress come constantly, either from congresspeople directly, or from their staff members. . . . On the other hand, it's very easy to get money for contracts. You see, having more staff positions in government does not get you more votes. It gets you less. Voters do not like to have more people on the payrolls. So Congress is extremely reluctant to create such positions. Spending money on contracts, on the other hand, looks like government is doing something for the people. So we end up paying money on consultants for research that would have been much cheaper if done by the staff. There are many private firms and nonprofit organizations that specialize in government contracts, and they often subcontract those to academics. (senior economist, Small Business Administration, August 1999)

As an illustration, the overwhelming majority (over 90 percent) of the large government-sponsored social experiments completed between 1962 and 1996 were contracted out to private firms and academics.[174] But this is simply part of a larger pattern of intellectual symbiosis between government and economic professionals. Many of the methodological, and some theoretical, innovations produced in applied microeconomics were by-products of similar contracts with local, state, and federal agencies in need of practical tools that were usually mediated by the economic research industry of semipublic (e.g., RAND) or entirely private (e.g., Charles River Associates) consultants, and sometimes even in close connection with the interested businesses themselves. The characteristically fragmented and multilayered nature of American government discussed in chapter 1 prompts each administrative unit to sponsor the methodological developments that help it carry out its functions and, by the same token, help it justify its existence and jurisdictional claims. In addition, competition between administrative institutions and the involvement of external constituencies through lobbying almost ensures that methodological settlements will result from negotiated processes between the different parties at work. An interview I conducted at the Congressional Budget Office described this complex knot of relationships between academics, federal agencies, and corporations on the occasion of new auctions of usage rights to the government-controlled radio spectrum.[175]

> [Some academics] worked for us and [some] we talked a lot to. There was a great conference at Princeton on radio spectrum auctions. Everybody came. . . . [Then] this "smart guy" at the FCC wrote the proposed rule-making for auctions. They [i.e., the FCC] were given the authority to auction spectrum, and they had to figure out auction rules, and he wrote up: "This is what we know about it; this is what we're thinking; now you can comment." And writing about it, in the footnotes to the "Notice of Proposed Rulemaking," [were] references to all the articles by all the academic auction theorists. Well, all the telecommunications companies immediately hired all the academics. . . . And then these guys developed, really pushed auction theory forward by huge leaps, under contract. They were being paid by these telecoms, so they got a lot of good publications out of it too. (Senior economist, Congressional Budget Office, August 13, 1999)

By now we can see that this pattern of scientific innovation in economics is not new. From national accounts to game theory to auction theory, government action has been intertwined with the development of economic theory and methodology. While this pattern is not exclusive to the United States—there are clear equivalents in France and in the United Kingdom as well—two features are characteristic of the American context. First, this work in the United States has continuously involved academics drawn from universities and consulting firm experts, whereas in France it was mostly the province of a somewhat different breed of scientists, namely engineers working in public administration or national enterprises. Second, the French (or even British) economic contexts have been less conducive to such "technological" work overall. The regulatory and legal (as opposed to administrative) mode of economic governance in the United States, its characteristic back-and-forth movement between government agencies and outside constituencies, and, above all, the greater willingness of American public powers to rely on price mechanisms to manage the economy and society have all opened up important jurisdictions for economics in the marketplace itself. These jurisdictions also promise lucrative rewards for those with economic expertise. In short, economics has become a real business.

Economics in the Marketplace

Historically, the story of the entanglement between economics and the corporate world is not all new, of course. First, we have already discussed the unique proximity between economics and business education in this country. Second, the profession of "business economist" institutionalized earlier in the American industrial sector than elsewhere. Third, economic experts from academia and government have been particularly prone to turn their knowledge into a marketable asset. There is widespread evidence of a comparatively early and substantial establishment of the economic consulting market in the United States, and its application to a large variety of areas, from pollution control to crime to, very prominently, finance. Fourth, the business world (as well as other interest groups) makes great use of economic research in its routine lobbying and political activities, a point I develop later with a short discussion on think tanks.

According to National Science Foundation surveys, the majority of self-identified "economists" are employed in business.[176] The private, for profit sector also employs a substantial share of doctoral economists: 22 percent.[177] The "business economics" profession is itself quite well organized: the National Association of Business Economists (est. 1959) currently lists about 4,500 members, half of them with economics PhDs.[178] This is also congruent with the fact that close to 15 percent of the

American Economic Association membership is still located in the business sector (1997 data). Other indicators of the close relationship between academic economics and business might include the large proportion of CEOs with a degree in economics, or the general "economicization" of business education since the 1960s, discussed earlier.[179] One interviewee described this comfortable position of economics in the business world with considerable assurance:

> Lately I've been doing some consulting that has had me speaking with corporate executives, and the thing that's astonishing to me is that everybody out there running a company really knows their economics. I mean, Jorgensen's "User Cost of Capital," for example. It's a formula that describes what opportunity cost of funds a firm should use when deciding whether to invest. That formula is etched in the skull of CFOs at all the top companies now. And I think one of the reasons why we've had the economic success that we've had is that the business schools have taught the people who are running their companies good sound economics. And I think there's been a feedback into the profession in the sense that there's been almost a clinical trial of economics by having people out there using economic principles to run their companies, and then succeeding, and then teaching us that we were right, and sort of reinforcing research in a specific area. (senior fellow, American Enterprise Institute, August 1999)

This assessment, as we will see later, contrasts remarkably with the angry disillusionment I encountered among the few French academics who have been trying to make their expertise available to the private sector.

THE BUSINESS OF ECONOMICS

Statistical and econometric techniques provided one of the first areas of commercial involvement of economists, and academics often led the way in the commercialization of research to outside constituencies. Before World War II, in the absence of strong government involvement, prominent academic and research institutions authored and marketed most statistical indices, analyses, and forecasts. In 1917, for instance, a group of Harvard economists and statisticians established a commercial venture for the collection of statistical data and the development of the first barometers of business activity. Throughout the 1920s, the Harvard Economic Service offered forecasts based on its analysis of three indices of economic activity,[180] a methodology that was widely imitated around the world. Another prominent interwar example was Irving Fisher, an eminent economics professor at Yale who organized his own consulting and advisory business in the form of a competitor forecasting service. Both organizations were quite successful in their activities, at least until

their failure to predict the 1929 stock market crash and the subsequent deepening of the Depression seriously damaged their credibility.[181]

The list of academic economists who have set up shop in the private sector is very long, and there is no point being exhaustive here. Suffice to say that market mechanisms, the reluctance of government to internalize research, and the decentralization of political, administrative, and corporate decision making in the United States all provided a niche for the widespread commercialization of academic skills. I develop these points in the following sections by analyzing two particularly interesting examples of such activities: econometric forecasting and legal advice.

An Example: Econometric Models. The econometric model industry provides a good example of the processes whereby economic knowledge is readily commodified for private uses in the United States. As pointed out earlier, the first econometric models originally emerged within the framework of academic research institutions. The Cowles Commission, as well as several universities (including the University of Michigan and the Wharton School, where Lawrence Klein later obtained a job), played an important role in supporting these early efforts. The first large-scale model of the American economy was then developed at Brookings around 1959, in association with the Social Science Research Council. Involving large teams of researchers, it played a pivotal role in shaping applied econometric practice throughout the world.

Government agencies in the United States have been much less conspicuous in the history of macroeconometric model building than in France, or even in Britain, where the Treasury used to run the most advanced enterprise in this area. For the most part (but with the notable exception of the Federal Reserve), American models were developed *outside* government departments, and then bought and used by bureaucratic administrations. This pattern reflects a distrust of direct political meddling with model construction, a suspicion that is reinforced by the existence of parallel—and mutually critical—budgeting offices in the legislative and executive branches.[182] A prominent academic economist who had served as a high-ranking official at the Congressional Budget Office thus saw in the agency's lack of an internally produced model "a defense against criticisms that the model is biased."[183]

The commercialization of macroeconomic models was encouraged by the emergence of demand (notably from the public sector) and the diminishing returns of macroeconometrics from a scientific point of view. After the first pioneering efforts, it had become increasingly difficult for academics to legitimate their involvement in an intellectual activity that was not "at the frontier" anymore.[184] Between the early 1940s to the late 1970s, the practice of macroeconometric model-building evolved from a

traditional research enterprise sponsored by foundations and universities into a purely commercial venture, exemplified by the emergence of three large private economic forecasting firms, all of them founded by academics.[185] Wharton Econometric Forecasting Associates (WEFA), which sold a business application of the Wharton model, was formed by Lawrence Klein and others to support the economics department at the University of Pennsylvania. Data Resources Inc. (DRI) and Chase Econometrics, also the children of academics (Harvard professor Otto Eckstein in the former case and Michael Evans in the latter), were created in the late 1960s as forecasting and consulting firms more explicitly geared toward corporate uses.[186]

Another Example: The Legal Jurisdiction. Another interesting illustration of economic jurisdiction in the business world concerns the codependent relationship between economics and law.[187] As we will see, such a relationship is natural in continental Europe, where economics was generally institutionalized as a component in the (primarily legal) training of civil servants. Part of the history of economics in these countries (and this is especially obvious in France) has to do with the latter's slow dissociation and autonomization from the legal realm.

In the United States, however, the economics profession took an almost opposite trajectory. Economics there had its intellectual origins in moral philosophy, and by the 1890s was already constituted as a strong and independent disciplinary project. In contrast with France, where law was constitutive of the economics profession as it institutionalized in the early part of the twentieth century, in this country law was a separate realm that could potentially become an object of professional investment. American courts took an early interest in economic questions and occupied themselves with market regulation at a time when economists were generally hostile to it.[188]

The law, thus, has been constitutive of the market patterns that emerged in early twentieth-century America and has played a considerable role in shaping the universe within which firms (public or private) operate. Furthermore, legal and administrative rules are the object of constant formal and informal negotiation. American corporations are thus faced with a constantly evolving and ambiguous regulatory environment where their economic actions, while set within a defined legal framework, may nonetheless be interpreted in widely different ways. In this situation of high uncertainty, firms, courts, and government offices all resort to economic professionals to provide quantifiable standards to evaluate the impact of regulations and the realm of possible actions, as well as eventually to argue, prosecute, or defend their behavior in court.[189]

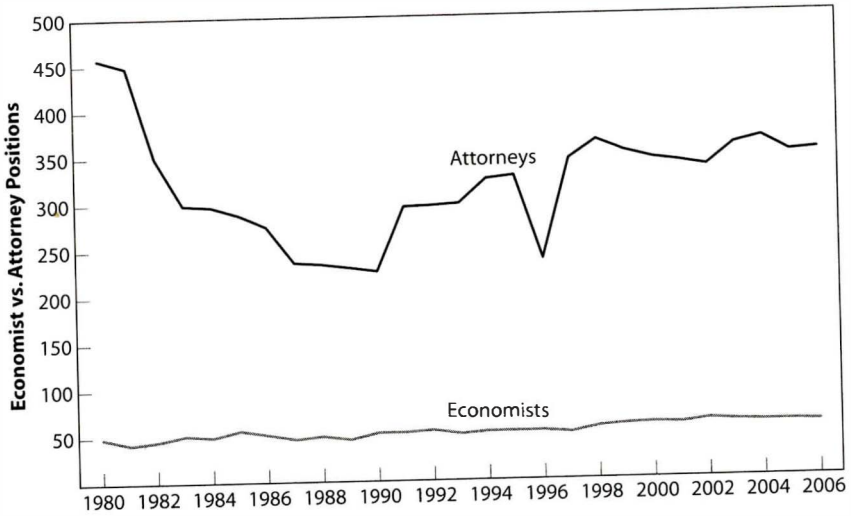

Figure 2-6. Economist versus attorney positions, Antitrust Division of the Department of Justice, 1980–2006.
Source: Antitrust Division, Department of Justice.

Antitrust and other regulatory laws (e.g., environment, health, and safety) provide nice examples of how the extent, complexities, and ambiguities of the regulatory framework create a de facto niche for economists in the legal arena. Since the 1960s, judicial processes have become increasingly subject to the imperatives identified by economic theory.[190] Correlatively, the influence of economists in government agencies traditionally dominated by attorneys grew markedly during the 1970s and 1980s.[191] At the Antitrust Division of the Department of Justice, for instance, the share of economists in the top professional positions went from about 8 to 9 percent to 17 to 18 percent over the course of the 1980s; it has since stabilized at around 13 to 14 percent as documented in figure 2-6. These figures, however, do not fully capture the rising importance of economic reasoning, which must also be related to the deep "economicization" of lawyers' training itself over the same period (both in law schools and in government) and to the increasingly central place of economists in legal decisions and actions. As Eisner and Meier put it in their analysis of the evolution of antitrust institutions, "Economists went from a secondary position as members of a support staff to being equal partners in the policy process"(1990, 277).

A related development is the emergence of a substantial market for economic consultants in the legal sector, both as inside experts within law firms and corporations and as outside providers of professional

testimony (e.g., NERA economic consulting, or Charles River Associates, which fought a famous antitrust case for IBM).[192] In recent decades, the neoliberalization of the economy and, in particular, the weakening of the regulatory environment (partly under the influence of the "law and economics" movement within academia), as well as the reliance on increasingly complex techniques to assess the legal or illegal character of economic actions, have tremendously benefited economists. The *Wall Street Journal* recently summed up the evolution of antitrust the following way: "Traditionally, trust-busters focused on blatantly illegal behavior, such as price-fixing, leaving little leeway for an economist's interpretation once the facts were established. . . . More recent cases, such as the one against Microsoft Corp. in the late 1990s, have involved tricky calculations of how much consumers might be damaged by a company's market domination" (Anders 2007, A1). Indeed, in the preliminary case of the federal government against the Microsoft Corporation (1999), both parties relied heavily on the expertise of teams of economists, each of them led by a well-known MIT professor.[193]

One of my interviewees summed up this growing entanglement between law and economics in the following way:

> The laws affecting business have increasingly been based on economic theory. Economists now teach in the law schools. Many lawyers now have PhDs in economics as well. And so both the laws affecting business firms and the regulations, telephones, electricity, railroads, etc. are directly based on what economics teaches. And naturally when there is a dispute, they turn to economists as their experts. And this has become a very big business in itself. (professor, New York University, October 1999)

The rise of economics in the legal arena thus reflects a successful movement of jurisdictional expansion in Abbott's sense. We may—as a first approximation—understand this tendency of American academic discourses and professions to enter new jurisdictional domains as a structural consequence of the fragmented and competitive makeup of social institutions (particularly the legal and political systems), which produces a tendency to rely on formal rationalization and expertise, as Jasanoff (2005) has demonstrated. But these structural conditions are only necessary, not sufficient, explanatory factors. The invasion of the legal domain by economic science has relied on a vast scholarly movement ("law and economics"), which extends its roots back into the interwar period but organized as an academic force in the 1960s. We must thus understand the development of analytical tools making economic expertise relevant to the legal jurisdiction in relation to the specific conflicts and dynamics within the academic fields of economics and law. "Many economists,"

Medema argues, "saw the application of economic tools to legal theory as a natural extension of the economic paradigm, a precedent for which already existed in public choice analysis" (1998, 217).

Abbott (1988) argues that professional communities routinely use academic knowledge to enhance their professional status and legitimate their entry into new jurisdictions, and understands the former as a key element in the making of American professionalism. We can see the logic of Abbott's argument at work in the FCC auctions, which economists constructed as a successful "application" of game theory, obscuring the complex interplay of interests at work and winning a lucrative market for auction theorists in the process.[194] The case of "law and economics" (as well as a number of other fields, such as finance, or auction theory)[195] also suggests a complementary dynamic whereby academics' entry into "private" jurisdictions also helps strengthen their scientific claims. This, of course, does not necessarily mean that the *logic* of action behind such moves should be interpreted as the result of rational calculation. Rather, it suggests the operation of what Bourdieu (e.g., 1988) calls a "habitus," that is, a practical disposition developed in the context of legitimacy struggles within the fields of economics, policy expertise, or business education, all of which coincide rather well with the objective interests of their bearers.

Obviously, control over practical jurisdictions *always* and *everywhere* constitutes a central element in the construction of scientific boundaries and the formulation of scientific claims. In Bourdieu's terminology, it is a form of "capital." What is remarkable about the American case, however, is the fact that the country's economic culture and organization seem so naturally to lend legitimacy to the very broad jurisdictional claims of economists. We will see that this is not necessarily the case elsewhere.

Think Tanks and the Politicization of Economics

One group of institutions—the think tanks—occupies a quite unique place in the American political landscape, at the crossroads between politics, business, and universities. Initially conceived as external checks on the federal budgetary process (this was the impetus behind the creation of the first major think tank, the Brookings Institution), or as coordinators and sponsors of empirical economic studies by academics (NBER), think tanks have progressively evolved into a field of relatively autonomous, sometimes aggressive purveyors of ready-made research for political staffs. Until World War II, such organizations rarely sought to play an active part in the processes whereby *specific* policy proposals enter the agenda. The NBER was always strongly opposed to the formulation of specific policy recommendations. The Brookings Institution's famous

criticisms of the New Deal budgets in the 1930s were presented as an exercise in expertise from the point of view of mainstream economics. Since then, most of the activity at Brookings has centered on the evaluation and analysis of existing governmental decisions, though the organization became more proactive after the 1960s.

The development of think tanks can be understood as part of a general logic in American politics that centers on the incorporation of private interests in the political process itself, on the one hand, and on the place of science in constructing authority to gain the upper hand within this very process, on the other. The internal heterogeneity and porous boundaries of political parties in the United States means that they rarely serve as the vehicle for the articulation of strong economic views—unlike the British parties. Instead, such articulation tends to take place in a more decentralized manner and involve consulting for individual politicians.

More specifically, the instrumentalization of economic knowledge within American politics may be traced to the transformation of the purpose and scope of interest group politics following the growing economic involvement of government in the 1930s–40s. The new centrality of fiscal policy (even with the limitations of the U.S. case) changed the context in which private groups could legitimately enter the policy process and prompted them to articulate their own policy views around explicitly scientific rationales supported by economic research. One of the first organizations to act on such a basis was the Committee on Economic Development (CED), a business think tank created in 1942 with a staff recruited among University of Chicago economics faculty and PhDs (Theodore Yntema was its first director of research). The work of R. M. Collins (1978, 1981) and Weir and Skocpol (1985) has amply demonstrated the role of the CED and its predecessor organizations in making compensatory fiscal policy acceptable to Roosevelt in 1938, as well as pushing the American postwar economic order in the direction of commercial Keynesianism. They also showed that the CED continued to influence that consensus as it evolved toward the acceptance of a more discretionary use of fiscal policy in the 1960s.[196]

As economic expertise became an important political currency, ideological competitors in the policy arena increasingly decided they needed their own sources of economic expertise. This was illustrated by the creation of a new generation of ideological research organizations (the Heritage Foundation and the Cato Institute stand as examples).[197] The revival of corporate class consciousness during the 1970s gave rise to a massive increase in financial support for congenial bases of political action and technical expertise.[198] By the 1980s, an abundance of more openly ideological institutes sought to produce "relatively sophisticated and well-documented analyses of the economic effects of specific government pol-

icies on business, and criticisms of the scientific basis of health and safety regulations."[199] These organizations served to launch a number of public campaigns in favor of specific economic reforms (e.g., tax cuts, deregulation), which were later popularized by Ronald Reagan.[200] Many of Reagan's closest advisers and political appointees came from this sector, as well as from journalism, congressional staff positions, and consulting firms, all described by Krugman as the "fringes of economics."[201]

Social control over open partisanship in academia has not prevented the emergence of a large research sector at the margins of academia, using the same professional rhetoric but for more partisan purposes and with potentially much greater influence on the policy process. The following quotation, from the same American Enterprise Institute economist who earlier marveled at the penetration of economic knowledge into the business world, illustrates the ambiguities of the techno-political philosophy that inspires the members of some of these organizations (and in this case one of the most academically "respectable" of them):

> The American Enterprise Institute [AEI] is really one of the focal points, of connecting academic work to the press in a way that the press can understand. So I'm on television a lot, I write for popular journals a lot now, and popular magazines. And that stuff is, I guess, the core responsibility of the institute. That makes it, I think, sort of an important component of the mechanism that makes the economy work. We talked earlier about how MBAs learned economics from economics professors and then start running their companies better. Well, I think that places like AEI teach people true lessons so that the lessons stick—propaganda doesn't stick; propaganda can win an election for a candidate but it doesn't change things fundamentally, at the low frequency, it's not going to last forever. Spreading the truth does. And I think that one of the functions that AEI tries to have is take the things that the frontier economists are teaching us, and make them digestible for the masses. And yeah, I'd have to say that for me, I take that responsibility with almost religious zeal, that I think it's one of *the* most important things I could do, as an economist, that I could help people—if people just understood supply and demand, if voters understood supply and demand, the world would be a much better place. So the challenge is daunting but the game is potentially [very high stakes], in terms of really making a difference in how the world works for the good of everybody. I think that it's one of those places where you can have a very big effect if you can succeed at getting the lessons across. So that's what AEI's about, really. (senior fellow, American Enterprise Institute, August 1999)

Within the think tanks field, claims of economic expertise have tended to get entrenched in institutions that are close to the business community and its interests, often in a libertarian vein. A survey of Day's *Think Tanks: An International Directory* (1993) shows that among the organizations dealing specifically (though rarely exclusively) with economic matters, a large majority (more than 80 percent) officially proclaimed their commitment to the promotion and defense of free-market ideas, often against the involvement of the state. Such institutions are not only much more numerous; they also far outstrip liberal ones in the size of their financial base. In 1992, for instance, the budget for the liberal Economic Policy Institute (EPI) was a mere $1.3 million, a far cry from the Heritage Foundation's $18 million, or even the $3.5 million of the Cato Institute. In 2004, the discrepancy was just as large, with, respectively, $5.5 million for EPI, $34 million for Heritage, and $14.9 million for Cato (figures 2-7a and 2-7b).

Some of these institutions—particularly the more ideological ones—entertain a complex, often antagonistic relationship to mainstream academia, being in a dominated position from the point of view of the scientific and educational capital of their members. Conversely, for academics, the existence of these organizations makes the kind of gatekeeping work discussed at the beginning of this chapter all the more urgent. Certainly the "heteronomous" nature of the economics field, its pervasive vulnerability to social demands, and the absence of exclusive professional controls explain much of this boundary work in the United States as elsewhere. But it is never as necessary to affirm the existence and proper character of a boundary as when it is fuzzy and porous. Evolving in an open, decentralized polity where the provision of policy advice and ideas is organized on a competitive basis rather than through elite networks, whether formal (France) or "old-boys" (United Kingdom), American economists have to continually evaluate their (and others') claims to legitimacy and defend themselves through status symbols (the PhD) and the constant reaffirmation of scientific boundaries.

American Economists, from Professional Scientism to Scientific Professionalism

Economics is always and everywhere a political endeavor. To the extent that they involve choices about the structure of society (even if it is to leave society unchanged) and furnish arguments to be used in political struggles, economic methods inevitably have political underpinnings and political implications. That point was clear from the beginning among

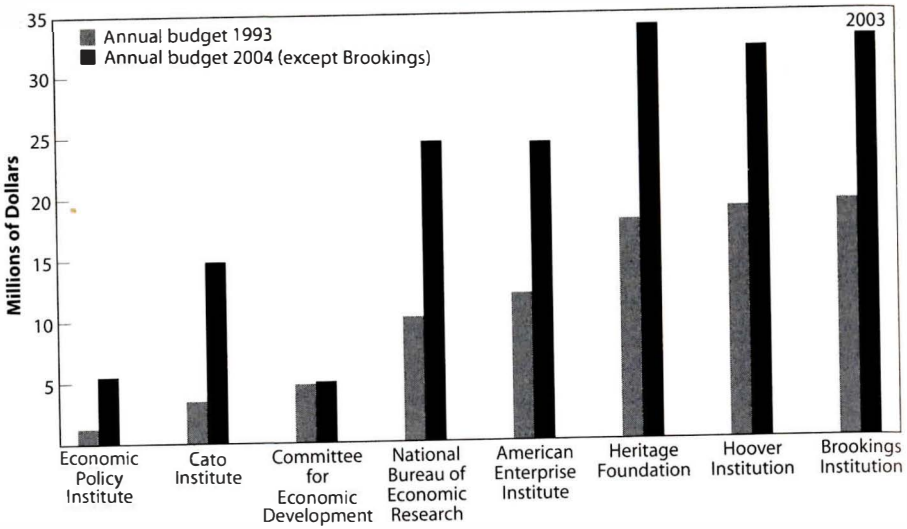

Figure 2-7a. U.S. think tanks: annual income (1992 and 2004 data; Brookings data, 2003).

Source: Day 1993 for 1992 income; and individual organizations' annual reports for 2004 income.

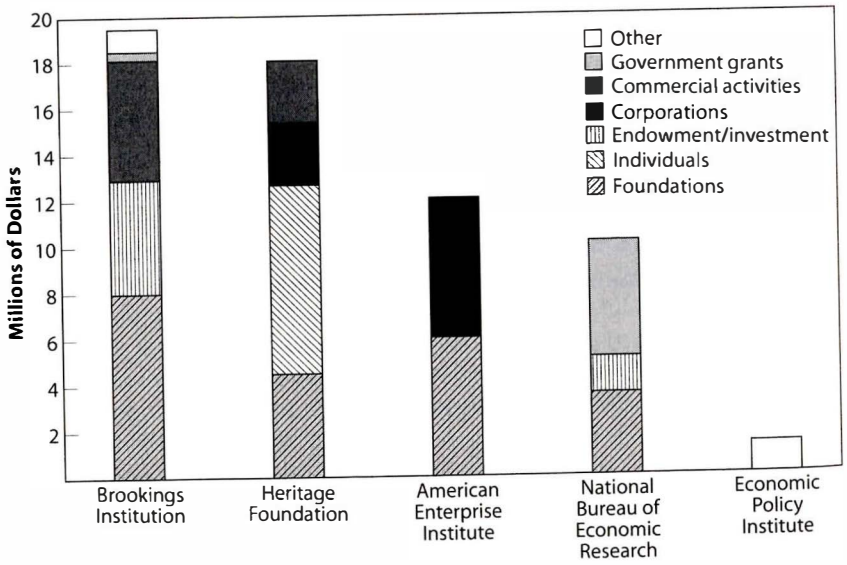

Figure 2-7b. U.S. think tanks, budget composition, 1992.

Source: Day 1993.

American economists. At the discipline's very inception, political entanglements with reform threatened the legitimacy of the disciplinary enterprise they had set out to build. During the early part of the twentieth century, as well as in other periods that were highly charged ideologically, such as the New Deal and the years immediately after World War II, the various "patrons" of economic science, whether private or public, expressed considerable concern about the ideological underpinnings of social scientific knowledge and actively encouraged approaches they saw as "scientific" and less prone to arbitrariness in their dealings with academic communities. One such approach was the reliance on numbers as a means to eschew political differences. There is no equivalent to the extraordinary amount of data production and analysis that went on in American social science throughout the interwar period, and still goes on today. Porter summarizes the point nicely:

> It is no accident that the move towards the almost universal quantification of social and applied disciplines was led by the United States, and succeeded most fully there. The push for rigor in the disciplines derived in part from the same distrust of unarticulated expert knowledge and the same suspicion of arbitrariness and discretion that shaped political culture so profoundly in the same period. Some of this suspicion came from within the disciplines it affected, but in every case it was at least reinforced by vulnerability to the suspicions of outsiders, often expressed in an explicitly political arena. It was felt most intensely in fields treating matters of public interest, and in many cases quantitative methods were initially worked out by applied sub-disciplines, migrating only later to the more "basic" ones. (1995, 199)

The emergence of mathematical economics and econometrics after the 1930s—much of which was accelerated by an influx of European scholars into U.S. academia—led to a reinterpretation of the agenda of scientism, however.[202] Economics was closely integrated into a new, more activist conception of the state through its emphasis on engineering economic growth, rationalizing decision making, and making policy efficient within the context of a free-market economy. But these goals were clearly bounded. Contrary to England, distributive issues never held center stage. Contrary to France, neither did industrial ones.

With the virtual disappearance of institutionalism in the early postwar decades, these intellectual commitments became the mold in which new generations of scholars were socialized, and the construction of a highly organized, and highly promiscuous, intellectual edifice took on a life of its own. In other words, the rapid entrenchment of applied quantification in American academia cannot be dissociated from broader aspects of the country's political culture, mode of economic organization, and

particular historical trajectory. We may understand this character of American economics through two metaphors. The first is what I called "professional scientism" at the onset of this chapter. In other words, scientism came to be identified with a "professional outlook," in the sense of a claim to objectivity, a focus on analytical capabilities, and a high degree of collective organization and regulation. The latter refers to the strong jurisdictional control maintained through the role of educational criteria, the PhD in particular, as well as to the policing of field members through well-established "rules of economic method."

The second metaphor is that of "scientific professionalism." The intervention of economists in public and private arenas has been shaped not only by their own "scientific" capabilities but also by particular expectations emanating from the institutions that requested such expertise in the first place. All government bureaucracies appeal to the technical skills of economists. Yet not all of them have relied on academia to the same extent, or in the same way, as the U.S. government. The lack of an established *class* of top administrators in America has brought academia closer to the world of technical public expertise. It is on the basis of their ability to fulfill this role that academic economists have been incorporated at the highest levels of the state apparatus. Also, the institutionalized competition within government, and between government and social groups, has created a strong institutional basis for an economic expertise that seeks to locate itself in the unassailable realm of "science"—with all the difficult gate keeping work such a position entails.

We may make a similar point about the economists' jurisdiction in the American corporate world. Economists in business put their technical abilities in the service of the organization by streamlining decision making or lobbying government. Here again, this is not specific to the United States. Yet I have argued that the nature of economic organization—the greater reliance on market mechanisms, the permanently unsettled nature of the law, as well as the structure of the interprofessional ecology whereby professions appear "relevant" to one another—also tends to create a form of "nesting" of economic knowledge within various other occupations and institutional locations. For this reason, economic concepts and tools become an integral part of the processes whereby social objects are routinely constructed and evaluated. Economists define not only the practical standards according to which such conceptual objects as "monopolies" and "competition" are being judged; they also have authority to craft definitions of "discrimination," "pollution," and "welfare."[203] It is in this greater "colonization of the lifeworld," to use Habermas's (1984) phrase, that we may perhaps best characterize the influence of economists in modern America.

CHAPTER THREE

Britain: Public-Minded Elites

> Everything is very mixed up. All the people I can think of have a lot of academic friends, and meet academics and meet politicians. They are a bit of intermediaries, I guess, so that's—yes. I think comparing it with the U.S., I think just the fact of it being so much smaller a society here is—so that we all know a lot of academics. We all know a lot of journalists, a lot of media people, a lot of politicians. I don't think that is so much so of my friends in America who are academics. And they don't seem to know journalists, and they don't seem to know politicians. They seem to be much more isolated in academia, whereas I think Oxford is such a small society and we all know lots of them and they are all much more mixed up here.
>
> (professor, Oxford University, June 1997)

PERHAPS MORE than anywhere else, economic concerns and knowledge are part and parcel of British public culture. The country is famous for the level and quality of economic reporting in the generalist press, as well as for its specialized financial and economic publications, such as the *Economist* or the *Financial Times*, which have been around for well over a century (the former since 1843, the latter since 1888) and are widely read both at home and worldwide. Many commentators would argue that this public interest for economics has been partly nourished by a century-long debate about the causes of Britain's long-run economic decline—"very few other countries have been quite so introspective [about their economy]," one economic columnist told me (June 1997). At the end of the nineteenth century, Britain was still the world's leading industrial power. Between 1913 and 1979, its ranking in terms of GDP per capita "deteriorated from third to eleventh amongst the OECD-16 nations" (Middleton 1996, 16). This slow economic weakening, reversed only in the 1990s, has kept economic questions, and the search for solutions, at the fore of the public agenda.

The long-term trajectory of British economics seems to mirror the country's general economic path. The end of the nineteenth century saw the publication of Marshall's *Principles of Economics* and the successful professionalization of the discipline. During the interwar period, England