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The Evolution of Economics Clubs: 1777–2000

by

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DEPARTMENT OF APPLIED ECONOMICS

**COLLEGE OF AGRICULTURAL, FOOD, AND ENVIRONMENTAL SCIENCES
UNIVERSITY OF MINNESOTA**

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Abstract

Scholarly societies in economics (and many other professions) are clubs that provide members with a range of club goods, many of which have broader and economically significant spillover consequences for society at large. Yet surprisingly little is known about the historical evolution or current composition of these associations. This analysis of the development of professional economics societies worldwide provides perspectives on the evolution of the economics research industry they serve. Although the origins of current economic associations can be traced at least as far back as 1777, almost all of the growth in professional economics associations has been concentrated in the past 125 years and especially between 1945 and 2000. At the beginning of the 20th century almost all economic associations were general economics societies. The fractionalization of the profession, leading to a proliferation of associations with sub-disciplinary focus began in 1920 and accelerated after 1960. By 2000, almost two thirds of all economic associations served sub-disciplines ranging from law and economics through fisheries economics to public choice and game theory. There are comparatively few economic associations in the poorest parts of the world that are often most in need of the public goods economists can provide.

Keywords: Professional associations; club goods, economic societies, knowledge

JEL descriptors: A11, A12, D71 and N011

The Evolution of Economics Clubs: 1777–2000

I. Introduction

Professional associations are pervasive in academic disciplines and private industry, and critical to the creation and utilization of new knowledge. Arguably they are among the most important institutions researchers and the professions establish for creating, accumulating, and sharing knowledge. Generally, at least in their origins, professional associations are innately voluntary organizations created by individuals who rationally expect their own efforts to be more valuable if they can exploit spillover benefits from the research of others and if others become an attentive audience for the results of their programs. Inherently, therefore, professional associations are clubs and, as such, provide their members with club goods. They also, often intentionally and sometimes accidentally, provide spillover benefits to society. As the demand for these goods expands, so professional associations expand, reflecting the development of the disciplines they serve.

The history of the evolution of professional associations sheds light on the growth and development of the academic and research enterprise in those disciplines. Professional associations in economics have been in existence for over 225 years, although the number and composition of those associations has changed markedly even over relatively short periods of time. Here we provide new perspectives on the long-run evolution of the economics profession by examining the global development of professional economics associations since the middle of the eighteenth century.

II. Professional Associations as Economic Entities

Professional associations are quintessentially clubs that provide a limited supply of specific services to their members (Buchanan 1965). Membership is voluntary in all of these clubs in the sense that individuals can choose whether or not the benefits of membership outweigh the costs. However, as with some country clubs and health clubs, not everyone is eligible for membership in certain professional associations. For example, eligibility for full membership in the American Bar Association, the American Medical Association, and the American College of Surgeons requires that candidates for membership have bone fide qualifications from accredited institutions and have passed the requisite professional exams. These types of associations often also serve as gatekeepers who control entry to a profession (Friedman and Kuznets 1945).

Gatekeeper functions by professions that entail occupational licensing or certification have received considerable attention since Friedman and Kuznets's study of the effects of monopoly through licensing by professional associations.¹ Stigler (1971), for example, examines occupational licensing in the context of economic regulation and capture of the regulatory process by the professions who are the subject of that regulation. A related literature has examined licensing's role of guaranteeing minimum quality standards for services provided by members of professions (Law and Kim, 2005) or, in the case of engineering and other products or protocols requiring precision tolerances or interoperable specifications, industry minimum or common standards for specific products (Metcalf and Miles 1994). Regardless of whether the

¹ The gate-keeping functions of professional associations concerned with services often include professional certification or licensing, monitoring professional performance, and developing and implementing educational standards and protocols. Professional associations concerned with product quality standards develop and monitor technical product standards and establish regulatory protocols for product testing and release.

concern is industry or professional standards for services or products, the relevant professional associations are typically inherently responsible for their establishment and enforcement.²

Many professional associations, however, have no explicit entry restrictions and serve no licensing functions. Membership in these associations is generally open to all who are willing to pay the annual entry fee.³ Along with professional associations that do restrict entry, they provide many services that take the form of club goods. These include the obvious enterprises of creating and publishing journals, organizing professional meetings,⁴ and providing in-service professional development opportunities. They also supply networking opportunities, manage job markets for professional skills, and serve as experts and advocates in the formation and implementation of public policy, which typically involves a mix of rent seeking lobbying as well as providing information that may improve allocative efficiency.

Academic associations, including associations of economists such as the American Economic Association (AEA) and the Royal Economic Society (RES), are typically open access clubs that do not restrict membership. For example, at their inceptions, the founders of both the AEA and the RES explicitly determined that no persons should be excluded from membership (Edgeworth 1891 and Ely 1886).⁵ In some respects, from a global economic welfare perspective,

² Leland (1979) has noted that while establishing minimum quality standards can increase economic welfare, it is likely that a self-regulating industry will establish quality standards that are higher than the socially optimal standard. In the context of environmental regulations, Innes (1999) has also noted that industries have incentives to self regulate and that such self-regulation can enhance economic welfare, although resulting environmental standards may not be optimal.

³ Academic associations often impose implicit quality standards or provide signals of quality differences through a variety of mechanisms. These include awards for research, selection of certain individuals as fellows, the placement of articles in different journals (for example, the *American Economic Review* versus the *Journal of Economic Perspectives*), the ordering of articles within a journal, the presentation of invited addresses and keynote speeches at meetings, and so on.

⁴ It is worth noting that, in 1891, Professor Alfred Marshall had no doubts about the need for the Royal Economic Society to establish a journal (the *Economic Journal*) but was less convinced about the need for professional associations to convene meetings, observing that “For such discussions, unless conducted by a very strong association, might do harm: they might be attended chiefly by people whose time was not very valuable (Edgeworth 1891, 8).”

⁵ That the AEA and RES would be open access clubs was not self evident at the time these societies were established. In the debate over the establishment of the British Economic Association, (later the Royal Economic Society), Professor Sidgwick “... thought it was quite desirable that a reserve power should be placed in the hands

the major commodities produced by professional associations, including economic associations, are pure public goods. Through their provision of technical and social communication networks, including journals, professional meetings, and membership lists, academic associations lower the costs of creating, disseminating, and scrutinizing⁶ new knowledge.⁷ In so doing, professional associations improve the quantity and quality of knowledge, adding to the public good pool of the information produced by the discipline as well as lowering the cost to third parties of accessing the information. The knowledge presented in the associations' publications is non-rival and non-excludable (no one has to be a member of an economics association to read or, in some cases, to publish in its journals). However, access to journal space by producers of research, utilization of opportunities to build career-related networks at conferences, and other services provided by these clubs are often rivalrous and, at least in the short term, in limited supply.⁸ For example, the act of publishing has both public and club good elements. Once

of the council to reject any obviously objectionable applicant." However, Professor Edgeworth "... defended the almost indiscriminate admission of members ... on the ground that it was impossible to find any satisfactory test of orthodoxy in economic doctrine. If it were attempted to apply any such test, if some were to be excluded because they appeared unsound to others, he feared that the list of members would be very small (Edgeworth 1891, 10)." At the same meeting, a Mr. George Bernard Shaw went even further than Professor Edgeworth when, to ensure the openness of scientific debate and the avoidance of advocacy on the part of a scholarly association, he opined that "(T)he head of the Association should not be a gentleman who was identified with any political party... (Edgeworth 1891, 13)," a criterion that might create some difficulties, were it to be applied to today. Approximately six years earlier, in the debate over how the AEA should be organized, similar issues were discussed (Ely 1886). The AEA formally determined that "What was desired was a society which, free from all trammels, should seek truth *from all sources* [our italics], should be ready to give a respectful hearing to every new idea, and should shun no revelation of facts ... (page 6)," but only after a lengthy discussion about whether some degree of orthodoxy should be considered as a criterion for membership. Coats (1985) provides additional details about the founding of the AEA.

⁶ The AEA has had a focus on scrutinizing the quality of economics research since its inception. In the discussions over how the AEA should be structured and the functions it should serve, Professor Ely (1886, 15) observed that "In no other science is there so much quackery and it must be our province to expose it and bring it into merited contempt. A review at each of our meetings of the economic works of the past year ... might help in the formation of enlightened judgment."

⁷ Richard Putnam, in his widely referenced populist description of the functions and the recent decline of social clubs in the United States, *Bowling Alone*, emphasizes the economic contributions that such clubs make by lowering the costs of establishing social networks that transmit information about job opportunities and the qualifications of individuals. Shapiro and Varian (1998) have provided a formal and rigorous account of the economics of networking.

⁸ If access to a journal were not rivalrous, acceptance rates would be 100 percent. Clearly, this is not the case for economics journals, at least those that provide the individuals who publish in them with some reputational rewards. The *American Economic Review* and *Journal of Political Economy*, for example, have had acceptance rates with respect to submitted articles of 15 percent or less for many years and effective acceptance rates that are much lower because of self screening by potential contributors

created, the knowledge is (almost) freely available but one member's use of journal space on the margin denies use by another. Moreover, other services provided by associations (for example, networking access) closely correspond to club goods and an increase in membership results in congestion and higher costs.

As congestion costs increase, incentives for the creation of new clubs grow (Sandler 1992). In the contexts of professional associations, congestion costs are likely to increase when there is an increase in the population seeking access to a fixed number of clubs, each with a fixed supply of services (for example, journal space of a given reputational quality, leadership positions, and networking opportunities within the association). Similarly, as per capita incomes increase (or the research grant analogs rise) *ceteris paribus* the proportion of a fixed population seeking club membership is likely to increase. Both of these phenomena provide incentives for the creation of new clubs. Moreover, as specialization of interests develops, heterogeneity among population members in terms of sub-discipline, geography, and language provides added incentives for the creation of new clubs (professional associations).⁹ In contrast, economies of club size and innovations in technology may increase the optimal quantity of the club good being offered and act to increase the optimal size of a club (Cornes and Sandler 1996, pp. 348-9). Expanded space with journals is one example here. The evidence presented in this paper indicates that both phenomena have been at work in the economics profession. Over the

⁹ From its inception, the American Economic Association exhibited tensions among its current and potential members. In 1895 a rival body, the Political Science Association of the Central States, was formed which, according to Coates (1960, 568), "... reflected a fairly widespread feeling that the existing national organizations of economists and historians were indifferent to the needs of middle-western scholars." The AEA feared the "[P]ossibility that it might be captured by the predatory powers of the University of Chicago, an institution that was expanding rapidly with the aid of John D. Rockefeller's fortune and which was widely regarded as a hostile and ruthless rival to the established leaders of the academic world (Coates 1960, 568)." Professor J. Laurence Laughlin, head of the Department of Economics at the University of Chicago and founder of the university's Graduate School of Business refused to join the AEA and established the *Journal of Political Economy* in 1892, "... which while welcoming the discussion of theory, may be devoted largely to a study of practical problems of economics, finance and statistics" (Laughlin 1892, 19).

twentieth century, for example, many older economics associations continued to grow, while a plethora of new clubs were formed.

Despite their pervasiveness and widespread acceptance as productivity enhancing institutions or clubs, professional associations have been largely ignored by economists as a subject-matter for research. The structure, conduct, performance and effects of the professional associations that serve research industries have simply not been addressed, notwithstanding the continued attention economists have given to the importance of institutions in productivity and economic growth (for example, Commons 1950; Knight 1952; Olson 1965; and Ruttan 2003). One reason may be that surprisingly little is known about those institutions. In fact, from an industry-wide perspective, data have not even been available to economists about the professional associations that serve their own disciplines, including the numbers of such organizations, their origins, primary foci, and geographical distribution.

Data do exist on the annual membership of the AEA since its establishment in 1886 (Siegfried 1998) and limited survey data on the composition of that membership by institutional affiliation, gender, and geographic location have been made available by the AEA since the mid 1980s. The National Science Foundation (2004 and 2006a) provide information on numbers of recipients of undergraduate and graduate degrees in economics since 1966 and on the broad sectoral employment of economists in government, business and industry, and education since 1993.¹⁰ Recently Stock and Siegfried (1999 and 2005) presented cross section information on the employment and composition by gender and ethnicity of Ph.D graduates in economics from U.S. universities. While all of these sources contain useful information, they each provide only partial pictures of the development and structure of the global economics research and education industry.

¹⁰ Data for the United States on undergraduate degrees in economics since 1947 are available from the U.S. Department of Education and some data on graduate degrees are available for even earlier years. See, for example, Smith, Pardey and Chan-Kang (2004).

A further interesting and useful indicator of the evolution of a knowledge generation and transfer industry that has yet to be systematically examined is the establishment and growth of professional societies linked to the industry. As a rule, economic associations only develop when and where economists exist in sufficient numbers to warrant the establishment of formal clubs. Thus, data on the evolution of economic associations provide partial but useful insights about the evolution of the economic industry. Here, we present new data on the origins and changing orientations of professional economics associations across the world. These data complement and substantially expand our understanding of the long-term development, growth, and structural evolution of the industry in which economists work.

III. Professional Associations Data

Data were obtained on the names, membership numbers, date of origin, disciplinary or sub-disciplinary focus, and geographic location for each economic society or association in existence in 2000. The data were constructed as follows. A primary source of information on extant economics associations is the list of economic associations and societies with active websites compiled by Christian Zimmermann (2001). A total of 301 professional economic associations were identified using this list. However, not all professional economic associations had active web sites in 2000. The 47th edition of *The World of Learning*, published in 1997 by Europa Publications, is a second important primary source of information. It contains an extensive inventory across all disciplines of academic institutions, learned societies, and international, cultural, scientific, and educational organizations worldwide. An additional 46 professional economics associations were identified through this source resulting in information on a total of 347 professional economic associations that served the worldwide economics profession in 2000.

Published data were not available from these sources for many associations on dates of origin, functions, membership and other key attributes. Where this was the case, we contacted each association's current officers (president, secretary, and so on) to request the missing information. Data on dates of origin and disciplinary orientation were obtained for 279 of the 347 organizations. Information on numbers of association members were obtained for a subset of 124 associations. Among these associations, numbers of members ranged from 27 (Health Economics Association of Ireland and Conselho Federal de Economia, Brazil) to nearly 20,000 (American Economic Association) with an average membership of about 1,100 and a median membership of 428.¹¹

These data were used to construct the cumulative number of associations that functioned in any given year subsequent to the year in which the oldest association in the data base was established. The cumulative data are presented in figure 1, which decomposes the associations into those with a general or discipline wide orientation (for example the AEA) and those with a sub-disciplinary focus (for example, the American Agricultural Economics Association and the Econometrics Society). These estimates do understate the actual numbers of professional associations active in each year within the sample period (except for 2000 and perhaps 1777) for two reasons. First, data on the origins of 68 societies in the data base (approximately 20 percent of the associations) could not be obtained. Second, some societies were established and then later merged with others or otherwise became defunct.¹² Nevertheless, these data provide new insights about the changing size and structure of the economics profession over a considerable period of time.

¹¹ Only eight of the 124 associations for which membership data were available had less than 100 members while 35 had 1,000 members or more.

¹² For example, the Australian Economics Society was formed in 1887 (Butlin 1947) and remained active until 1899, when it was dissolved. Three decades later, in 1925, the Economic Society of Australia and New Zealand was founded and because it is still in operation is included in our data base. The original Australian Economics Society is not in our data base for the period 1887 to 1899 because it was not continuously in existence.

IV. The Development of Economic Associations: 1777-2000

A. Historical Trends

At least one economic association, the *Real Sociedad Economica de Amigos del Pais de Tenerife* (the Royal Economic Society of Friends of the Land of Tenerife), has been in continuous existence since 1777.¹³ The second oldest association in the data base, the Royal Statistical Society (Britain), was founded in 1834, providing nascent econometricians with a distinct chronological advantage over economists who, generally did not get around to establishing their own professional associations until fifty years later. Perhaps regrettably, the American Economic Association, founded in 1885, is not the oldest professional association in the world or even the oldest economics association, but at least it had the privilege of predating the Royal Economic Society (originally called the British Economic Association), which was not founded until 1890. By 1900, at least fourteen professional associations involving economists had been established, all but one in Europe and the United States, and included the Netherlands, Belgium, Denmark, Germany, Sweden, Norway, Finland, Uruguay, and Scotland (in addition to Spain, the United States and the United Kingdom).

¹³ In 1997 this society had 490 members. Its focus is eclectic and includes moral, material, cultural, and economic interests (Europa 1997). The Real Sociedad Económica de Amigos del País de Tenerife (RSEAPT) was founded during, and as a conscious part of the Enlightenment Period. The society's intent was to stimulate intellectual inquiry into a range of issues confronting Spain. It initially sought solutions to the country's stagnating economy and identified modernization strategies, particularly through improving education and expanding agriculture and also trade with India and America. Over time, new organizations and institutions (such as the Spanish society Col·legi d'Economistes de Catalunya founded in 1957) gradually assumed these scholarly functions, leading to an evolution in the role of RSEAPT. Nowadays the society has more of a civil than a scholarly hue, performing various cultural and advisory functions and promulgating its collective opinions about contemporary issues in Spain (Spanish Fullbright Alumni Association and the RSEAPT website at <<http://www.rseapt.org/>>). It is, however, classified as a scholarly society in the University of Waterloo library listing of scholarly societies (http://scholarly-societies.org/1760_1779.html). The Nationale Nederlandsche Huishoudelijke Maatschappij (National Netherlands Economic Society) was also founded in 1777 as the Oeconomische Tak van de Hollandsche Maatschappij der Wetenschappen (Economic Branch of the Holland Society of Sciences, which itself was founded in 1752). In 1797 it became an independent society called the Nationale Nederlandsche Huishoudelijke Maatschappij (National Netherlands Economic Society), now called the Nederlandsche Maatschappij voor Nijverheid en Handel (Netherlands Society for Industry and Trade). We excluded it from our data base, judging it to be a civil society organization from its inception, intended to promote discussion, consensus building and to stimulate public and private economic initiatives in the Netherlands rather than a scholarly society as such.

Between 1900 and 1918, the number of economics associations increased modestly to 22, including the first economic societies to be established on the continents of Africa and Asia (the Egyptian Society of Political Economy, Statistics and Legislation in 1909 and the Indian Economic Association in 1918). Fifteen of the 22 associations in existence in 1918, about two thirds of the total, had a general or broad orientation. Seven were specialized (sub-discipline oriented) economic associations such as the Royal Statistical Society (founded in 1834), the European Association of Fisheries Economists (founded in 1901), and the National Tax Association (founded in 1907).

Between 1918 and 1940, essentially the period between World War I and World War II, the number of professional associations across the world expanded from 22 to 42, a steady but relatively gradual rate of growth. In 1940, 22 of the associations, only just over half of the total, were general economics associations and 20 were specialty societies. Thus, during the interwar period, seven new associations were founded as general economics societies to serve economists in different countries and regions and 13 economic associations were established to serve economics practitioners in sub-disciplines (of which six were agricultural economics associations and one a resource economics association). In 1940, agricultural economics, with six associations, and econometrics, with three associations, accounted for about half of the specialty societies.

Between 1940 and 1960, the number of professional economics associations more than doubled to 90 societies, consisting of 46 general economics associations and 44 specialty societies. Exactly half of the 48 new associations that emerged between 1940 and 1960 were general economics associations. Among the 24 new sub-disciplinary associations, six focused on economic history, five on agricultural economics, three on real estate and urban economics, and five on public economics and political economy.

The process of expansion and geographic and sub-discipline specialization continued between 1960 and 1980. By 1980, a total of 156 professional economics associations were functioning in over 40 countries. About 55 percent of these associations (85) were sub-disciplinary in orientation while about 46 percent (76) were general economics societies. Most the 66 new economics associations created between 1960 and 1980 were sub-disciplinary societies (41). Eight of these new sub-disciplinary societies were economic history associations, ten were agricultural economics associations, five were real estate, urban and regional economics associations, two were resource and environmental economics associations, and three were financial economics and risk economics associations. Other new sub-disciplinary associations were concerned with industrial economics, education and welfare economics, economic development, econometrics and (for the first time) game theory.

Geographically, between 1960 and 1980 new societies were established in 22 different countries. The overwhelming majority of these new associations (71 percent of the total) were established in developed economies. Another three were located in transition economies, two in Brazil, one in China, and six were international associations. Only six of the new associations established between 1960 and 1980 were located in lower income developing countries: Malaysia (2) Nigeria (1), Vietnam (1), and South Africa (2).

The number of professional economic associations for which dates of origin were available continued to expand in the 1980s and 1990s, increasing from 156 societies in 1980 to 279 societies in 2000.¹⁴ Among the 123 societies established during the last two decades of the twentieth century for which dates of origin are known, only 31 percent (38 associations) were general economics associations while the remaining 69 percent (85 associations) were specialty societies. The new specialty associations covered a truly diverse range of topics, and were less

¹⁴ As noted above, the total number of societies extant in 2000 was 347.

concentrated in traditional sub-specialty fields such as agricultural economics and economic history.

B. Sub-Disciplinary Specialization

Data on the distribution of economics associations by disciplinary focus are presented in table 1 and panel b of Figure 1. In 1900, among the fourteen extant economic associations twelve were general economics associations and only two had any sort of sub-disciplinary focus (the Royal Statistical Society and the Société Royale d'Economie Politique de Belgique). By 1960, as discussed above, at least 90 economics associations were operating, of which almost half (44) were specialty associations. Eleven of these were agricultural economics associations; ten addressed public economics and political economy issues, and seven were economic history associations. Thus in 1960 these three sub-disciplines accounted for 64 percent of the specialty societies.

Forty years later, in 2000, within this frame of reference the picture had changed substantially. Among the 279 associations for which dates of origin are available, of the 189 societies established after 1960, only one third (64 societies) were general economic associations while two thirds (125 societies) were specialty societies. Among the 347 economic societies functioning in 2000, only 132 (38 percent) were general economic associations while 215 (62 percent) were specialty societies.

Among these 215 specialty associations, the largest category was economic history with 34 associations (9.8 percent of all associations and 15.6 percent of specialty societies), followed by agricultural economics with 28 (8.1 percent of all associations), resource and environmental economics with 26 (7.5 percent of all associations), and regional and urban economics (including real estate) with 21 (6.1 percent of all associations). Three other specialty categories had ten or more associations (public economics and political economy with 19, econometrics/mathematical

economics with 17, and economic development with 15). New associations also proliferated in relatively new fields such as game theory (9), welfare economics (8), financial economics (7), health economics (6), and law and economics (5).

Especially since 1960 and even more rapidly since 1980, economists have expanded the range of sub-disciplinary associations in which they participate. This almost surely reflects increased specialization within economics both in relation to analytical tools (as evidenced by the emergence of nine associations that focus on game theory) and institutions and sectors (as evidenced by the emergence of societies in the categories of resource and environmental economics, law and economics, and health economics). In part, it is also probably a result of the increase in the size of the economics profession and, as discussed below, increases in research funds that permit researchers to participate in more associations.

C. Geographic Distribution

Where scientists assemble is at least a partial indicator of where they work. In 2000, the overwhelming majority of professional economics associations were located in developed countries (239 or 69 percent). The current situation is little different than the historical situation. Figure 2 shows the changing geographic distribution of societies for which dates of origin are available over the period 1900 to 2000. In 1900, only one of a total of 14 economic associations in the world was located outside of Europe and North America (in Uruguay). By 1930, 26 of a total of 35 associations (74 percent) were located in developed countries, four were international associations, one was situated in what is now a transition economy, and only four (11 percent) were located in developing countries (Egypt, India, and South Africa, in addition to Uruguay). Thirty years later, in 1960, while the total number of associations had increased to 90, the number of associations in developing economies had increased only to 13 (14 percent of the total).

In 2000, only 33 out of a total of 279 associations (12 percent of the total and generally not the largest associations) were located in developing economies and 12 more (4 percent) in transition economies. Notably, only 6 of the world's 64 poorest income countries were served by their own economic associations, a clear indication that these 64 countries have relatively little internal capacity for economic research, policy analysis, or education.¹⁵ Forty nine associations (18 percent) were explicitly international associations, only some of which had relatively large proportions of members from developing countries. These data strongly support the view that, as is the case for many other knowledge and generation transfer industries, populations in poor countries are much more poorly served by economists than are populations in rich countries. This shortfall may be particularly crucial if, as Harberger (1993) and others have argued, the need for well-trained economics policy practitioners in such settings is particularly great. The data presented in Figure 2 demonstrate that the proportional gap between developed and developing countries with respect to professional economic associations and, by implication, economists and the capacity for economics has persisted since the 1900s. Thus, while the numbers of professional economics associations in both the developed and developing countries have been growing at about the same rate, the absolute gap has been expanding.

D. The "Fractionalization" Process

Since the 1920's, and even more rapidly since the 1960s, new professional economics associations have been created whose foci are sub-disciplinary.¹⁶ This process of "fractionalizing" professional economics associations by sub-disciplines (and to some degree

¹⁵ The 64 low-income countries were classified as such in World Bank (2001). They had per capita incomes in 2000 of less than \$460 (1995 U.S. dollars).

¹⁶ In some disciplines, major associations have created sections or sub-associations to address the growth of sub-disciplines within their overarching field and the increase in the size of their profession. One example is the Institute of Electrical and Electronics Engineers (IEEE) with over 365,000 members in 150 countries which operates almost as a federation of sub-fields. This tendency has recently been reflected within agricultural economics where, since 2002, the American Association of Agricultural Economists has allowed members to create sections devoted to specific areas such as agricultural trade, international development and extension.

spatially) since the 1920s and especially since 1960 is in large part a consequence of three factors: (1) the expanded scope of the work of economists in international, national, and regional government, and private-sector activities, coupled with potential gains from specialization within sub-disciplines, (2) the sheer increase in the size of the profession¹⁷ (that was also associated with a massive expansion of higher education in the United States and other developed countries)¹⁸ which both expanded the demand for professional publication outlets and may have created diseconomies of size with respect to some associations, and (3) rising per capita real incomes and increases in real research funding that increased the effective demand for the club goods provided by professional associations.

Measuring the evolution of the size of the economics profession is difficult. One indicator is annual total membership in the AEA, which is available for the period 1876 to 2004. Figure 3 presents the available annual data on membership in the AEA and our cumulative estimates of numbers of associations (the associations for which dates of origin are available) for the period 1900 to 2000. Even the most casual inspection of the trends in these two variables suggests that they are relatively closely correlated. In fact, the simple Pearson correlation coefficient over the entire period is 0.96 although over the period 1970 to 2000 it declined to 0.79. While not the only thing that matters, one important force in creating more economics “clubs” over the past 100 years has clearly been the increase in the numbers of economists.

The data in figure 3, however, also tell an additional tale. The size of at least one important economics association, the AEA, has also grown substantially over the past 100 years, as (of course) have the sizes of many other general economics societies such as the Royal

¹⁷ AEA membership, for example, also expanded markedly between 1940 and 1960 from 3,148 to 10,837 members and further expanded to a peak of 22,005 in 1993, but thereafter declined to 19,668 in 2000 and further eroded to 18,908 in 2004. One possible reason for this decline may have been the increased ease of on-line access to AEA publications by non-members over the past decade.

¹⁸ In the United States, for example, total enrollments in degree granting institutions of higher education expanded from about 2.2 million students in 1947 to about 4.1 million students in 1961 and to about 13.1 million in 2000.

Economic Society. While this could reflect an inadequate provision of clubs, it also is consistent with the notion that over time technological change has increased the optimal amount of the club good a given club can provide. In one area, journal space, it is clear that over the long run individual associations have expanded the amount of the club good they offer. In 1940, the total number pages published by three major economics journals—the *American Economic Review*, the *Journal of Political Economy*, and the *Economic Journal*—was 1,777; by 1960, the aggregate page count had increased to 2,602, and by 2000 it had expanded to 4,721 (Smith, Pardey and Chan-Kang 2004).

Figure 3 also presents data for the period 1973 to 2003 on total U.S. total federal academic R&D expenditures on economics as reported by National Science Foundation, measured in constant dollars using 2000 prices. These expenditures of federal funds are one indicator of the changing availability of funds for economic research.¹⁹ Over the period 1973 to 2003, in real terms, federal funding for academic R&D in economics doubled in the United States, increasing from fractionally under \$150 million to \$302 million at an average annual growth rate of 2.5 percent. Most of this growth occurred between 1982 and 1996, a fourteen year period over which expenditures increased from \$152 million to \$289 million at an annual growth rate of about 4.4 percent. This burst of U.S. federal funding for academic research in economics coincided with a period of rapid expansion of economics associations focused on specialized topics (20 percent of which were constituted in the United States). While the data on funding are partial in that they pertain only to U.S. federal funding flowing to universities for economic research, they suggest a clear and positive link between research funding and the size and number of professional associations.

¹⁹ Others include funds from state governments within the United States, other countries' governments, and private sources.

VI. Conclusion

Over the past two centuries, the economics profession and economics research has expanded and evolved mainly in developed countries along with per capita incomes, real GDPs, and post-secondary education. Almost all of the growth in professional associations has been concentrated in the last 125 years and especially between 1945 and 2000. In 1918 there were 22 economic associations for which dates of origin were available; in 2000 there were 279 such associations (a thirteen fold increase) and a total of 347 economic associations were serving the economics profession. In 1900, almost all economic associations were general economics societies. In 2000, almost two thirds served economics sub-disciplines ranging from law and economics through fisheries economics to public choice and game theory. Agricultural economics, economic history, and public economics and political economy were among the first sub-disciplines to develop their own associations. Only much more recently have specialty associations for areas such as game theory and resource and environmental economics appeared, albeit in response to different mixes of methodological developments and policy related concerns.

As in many contexts, in economics, these clubs and the club goods they provide have proliferated as the population that competes for those goods has grown and research funding has increased. Along the way, positive spillovers and truly public goods have also been created for the broader communities in which economists work. However, it is clear that economic associations are few and far between in the poorest countries of the world, reflecting a genuine lack of capacity for economic research in those communities which are often most in need of the public goods economists are capable of providing.

References

- AEA. No date. Directory of members. <<http://www.lbmchost.com/aea/search.asp>>. Accessed May 21, 2002.
- AEA. 1970. 1969 Handbook of the American Economic Association. *American Economic Review* 59 (6).
- AEA. 1974. 1974 Handbook of the American Economic Association. *American Economic Review* 64 (6).
- AEA. 1978. 1978 Handbook of the American Economic Association. *American Economic Review* 68 (6).
- AEA. 1985. 1985 Handbook of the American Economic Association. *American Economic Review* 75 (6).
- AEA. 1989. 1989 Handbook of the American Economic Association. *American Economic Review* 79 (6).
- AEA. 1993. 1993 Handbook of the American Economic Association. *American Economic Review* 83 (6).
- AEA. 1997. 1997 Handbook of the American Economic Association. *American Economic Review* 88 (2).
- AEA. 2000. AEA Papers and Proceedings. *American Economic Review* 92 (2).
- AEA. 2001. AEA Papers and Proceedings. *American Economic Review* 93 (2).
- AEA. 2005. Table of Members and Subscribers (End of Year). American Economic Association. <<http://www.vanderbilt.edu/AEA/TblMembers.htm>>. Accessed January 10 2006.
- Asociación J. William Fulbright. 2005. Comentarios de Christianne Fertig. <http://www.asoc-fulbright.es/encuentros/nacionales/tenerife2003/comentarios_christianne.html>. Accessed January 10 2006.
- Buchanan, J.M. 1965. "An Economic Theory of Clubs." *Economica* 32(1): 1-14.
- Butlin, S.J. 1947. "The Australian Economics Association." *Economic Record* 23(44): 20-31.
- Coats. A.W. 1960. "The First Two Decades of the American Economic Association." *American Economic Review* 50(4)(September): 537-574.
- Coats. A.W. 1985. "The American Economic Association and the Economics Profession." *Journal of Economic Literature* 23(December): 1697-1727.
- Cornes, R. and T. Sandler. 1996. *The Theory of Externalities, Public Goods and Club Goods*. Second edition. Cambridge: Cambridge University Press.
- Commons, J.R. 1950. *The Economics of Collective Action*. McMillan, New York.
- Edgeworth, F.Y. 1891. "The British Economic Association." *Economic Journal* 1(1)(March): 1-14.
- Ely, R.T. 1886. "Report of the Organization of the American Economic Association." *Publications of the American Economic Association* 1(1)(March): 5-32.
- Europa. 1996. *The World of Learning*. 47th ed. London: Europa Publications.

- Friedman, M. and S. Kuznets. 1945. *Income from Independent Professional Practice*. National Bureau of Economic Research: New York, New York.
- Harberger, A.C. 1993. "The Search for Relevance in Economics." *American Economic Review* 83 (2): 1–16.
- Innes, R. 1999. "Self-Policing and Optimal Law Enforcement When Violator Remediation is Valuable." *Journal of Political Economy* 107 (6 Part I) (December): 1305-1325.
- Knight, F.H. 1952. "Institutionalism and Empiricism in Economics," *American Economic Review*, 42(2): 45-55.
- Laughlin, J.L. 1892. "The Study of Political Economy in the United States." *Journal of Political Economy* 1(1)(December): 1-19.
- Law, T.L. and S. Kim. 2005. "Specialization and Regulation: The Rise of Professionals and the Emergence of Occupational Licensing Regulation." *The Journal of Economic History* 65(3)(September): 723-756.
- Leland, H.E. 1979. "Quacks, Lemons, and Licensing: A Theory of Minimum Quality Standards." *Journal of Political Economy* 87(6)(December): 1328-1346.
- Metcalf, J.S. and I. Miles. 1994. "Standards, Selection and Variety: An Evolutionary Approach," *Information Economics and Policy*, 6 (3-4)(December): 243-68
- Olson, M. 1965. *The Logic of Collective Action: Public Goods and the Theory of Groups*, Harvard University Press, Cambridge, Massachusetts.
- National Science Foundation (NSF). 2004. *Science and Engineering Degrees: 1966-2001: Detailed Statistical Tables* Washington D.C. U.S. National Science Foundation (Division of Science Resources Statistics).
- National Science Foundation (NSF). 2006a. Scientists and engineers statistical data system. Science Resources Studies Division, U.S. National Science Foundation. <http://srsstats.sbe.nsf.gov/dataaccess_java.html>. Accessed January 10, 2006.
- National Science Foundation. 2006b. NSF Survey of R&D Expenditures at Universities and Colleges. <<http://webcaspar.nsf.gov/>>. Accessed January 5, 2006.
- Putnam, R. *Bowling Alone: 2000. The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Ruttan, V.W. 2003. *Social Science Knowledge and Economic Development: An Institutional Design Perspective*. Ann Arbor: University of Michigan.
- Sandler, T. 1992. *Collective Action: Theory and Applications*. Ann Arbor, MI: University of Michigan Press.
- Shapiro, C. and H.R. Varian, 1998. *Information Rules: A Strategic Guide the Network Economy*. Boston: Harvard Business School Press.
- Siegfried, J.J. 1998. "Who is a Member of the AEA?" *Journal of Economic Perspectives* 12 (2): 211–22
- Smith, V.H., P.G. Pardey and C. Chan-Kang. 2004. "The Economics Research Industry," in P.G. Pardey and V.H. Smith, eds, *What's Economics Worth? Valuing Policy Research*, Baltimore: Johns Hopkins University Press.

- Stock, W. and J. Siegfried. 1999. "The Labor Market for New Ph.D. Economists," *Journal of Economic Perspectives*. 13(3)(Summer): 115-134.
- Stock, W. and J. Siegfried 2005. The Labor Market for New Agricultural and Resource Economics Ph.D.s. Working Paper No.05-W04. Department of Economics, Vanderbilt University: Nashville.
- Stigler, G.J. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science* 2(1)(Spring): 3-21.
- World Bank. 2001. *World Development Indicators 2001*. Washington, D.C.
- Zimmerman, C. 2001. Economics departments, institutes and research centers in the world. <<http://ideas.uqam.ca/EDIRC/index.html>>. Accessed October 14, 2001.

Table 1: Distribution of Economic Associations Among Sub-Disciplines

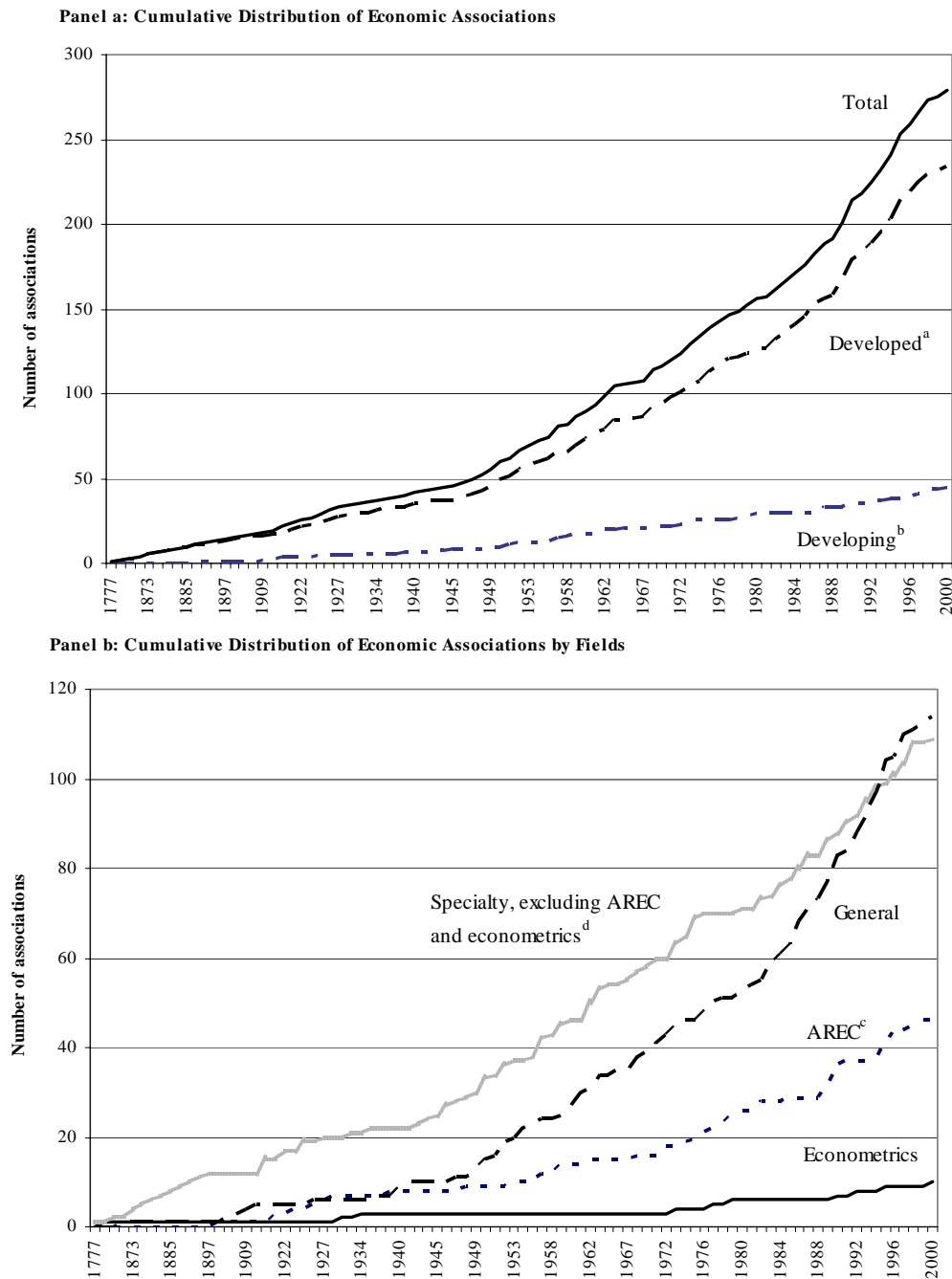
Category	1900 ^a		1960 ^a		2000 ^a		All Societies in 2000 ^b	
	Total (count)	Proportion (percent)	Total (count)	Proportion (percent)	Total (count)	Proportion (percent)	Total (count)	Proportion (percent)
General Economics	12	85.7	46	51.1	109	39.1	131	37.8
Game Theory	0	0	0	0	7	2.5	9	2.6
Economic History	0	0	7	7.8	26	9.3	34	9.8
Economic Development	0	0	3	3.3	12	4.3	15	4.3
Econometrics/Math Econ	1	7.1	3	3.3	10	3.6	17	4.9
Monetary and Forecasting Economics	0	0	0	0	3	1.7	3	0.9
International Economics	0	0	1	1.1	4	1.4	4	1.2
Financial Economics	0	0	0	0	6	2.2	7	2.0
Industrial Organization	0	0	0	0	3	1.1	4	1.2
Agricultural Economics	0	0	11	12.2	27	9.7	28	8.1
Resource and Environmental Economics	0	0	3	3.3	19	6.8	26	7.5
Labor Economics	0	0	0	0	5	1.8	5	1.4
Welfare Economics	0	0	2	2.2	6	2.2	8	2.3
Health Economics	0	0	0	0	5	1.8	6	1.7
Regional and Urban Economics	0	0	4	4.4	15	5.4	21	6.1
Law and Economics	0	0	0	0	3	1.1	5	1.4
Public Economics and Political Economy	1	7.1	10	11.1	16	5.7	19	5.5
Other Field Societies	0	0	0	0	4	1.5	4	1.2
Total Number of Associations	14	100	90	100	279	100	347	100

Source: Compiled by authors. See text for details.

^a These data are for the 279 societies for which dates of origin are available

^b These data are for all 347 societies included in the data base.

Figure 1: Professional economic associations by regions of the world and by fields

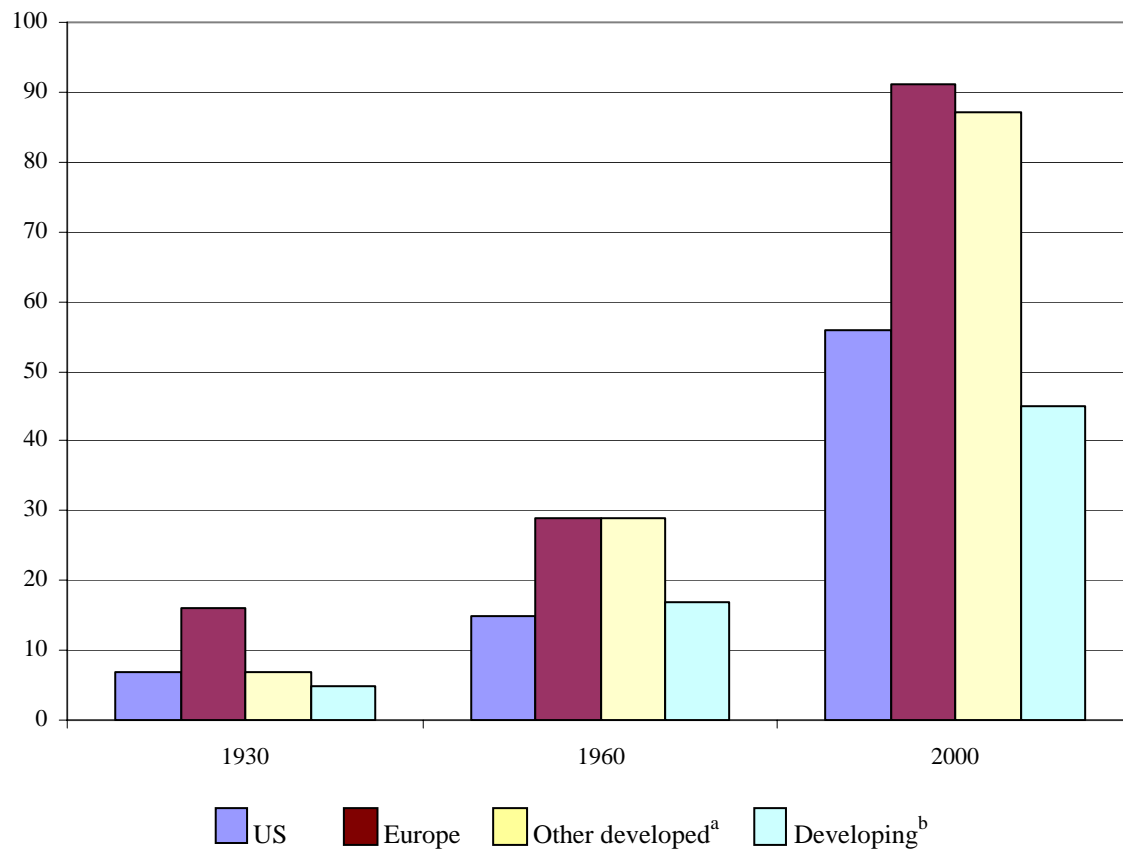


Source: Compiled by authors. See text for details.

Notes: Associations where year of foundation was unknown or unavailable were excluded.

- a. Developing countries include less-developed countries and transition economies.
- b. Developed countries include international associations.
- c. AREC denotes Agricultural, Resource, and Environmental Economics.
- d. Specialty includes the following fields of economics: mathematical economics, development economics, economic education, economic history, economic and game theory, financial economics, risk and insurance forecasting, business cycles, monetary economics, health economics, industrial economics, regulation, international economics, labor and demographic economics, law and economics, public economics, political economy, public policy, regional and urban economics, real estate, and welfare economics.

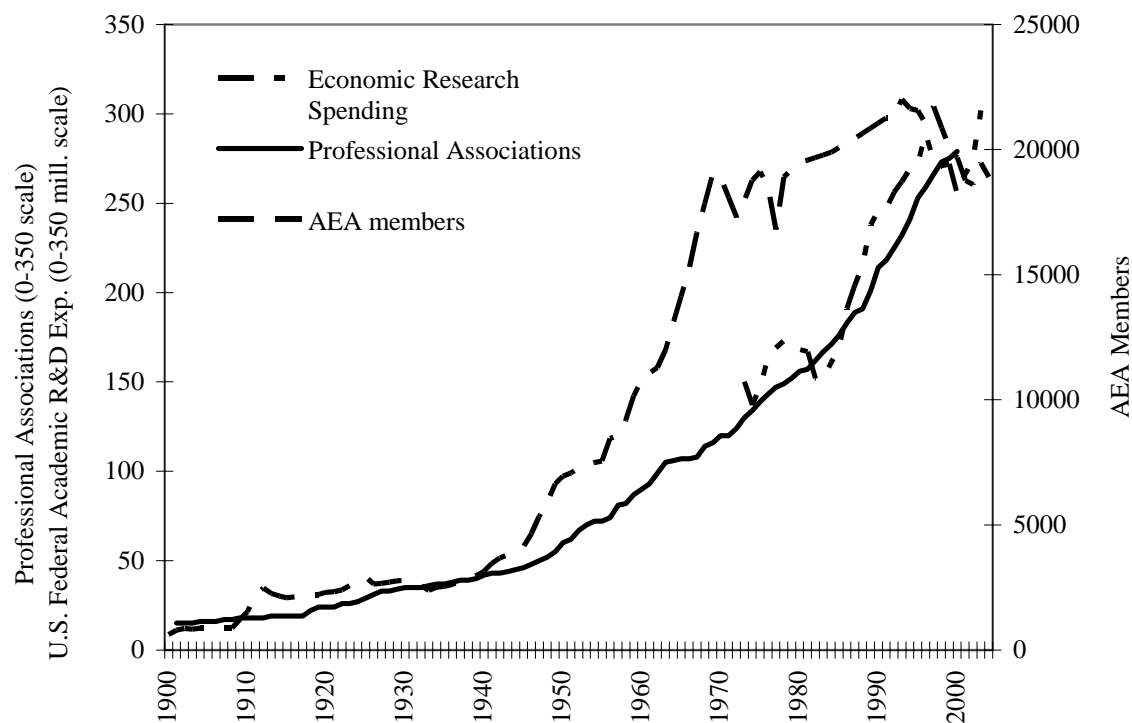
Figure 2: Changing geographical distribution of economic associations by region



Source: Compiled by authors. See text for details.

- a. Developing countries include less-developed countries and transition economies.
- b. Developed countries include international associations.

Figure 3: AEA Membership, Professional Economic Associations, and U.S. Government Spending on Economics in Universities: 1900-2004



Source: For professional associations see text for details; for AEA membership see AEA (various years); and for U.S. government spending see National Science Foundation (2006b).

Note: Associations where year of foundation was unknown or unavailable were excluded.

U.S. Government Spending reported in 2000 prices. Nominal data deflated using implicit GDP deflator from the online version of the World Bank Development Indicators database, accessed on July 10, 2005.