

# **Examining the Authority of the Mainstream: A Sociological Approach to Knowledge Production Processes in Economics**

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## **Introduction**

In this paper, I hope to contribute to the literature on the sociology of knowledge/science and analyses of knowledge production processes by critically assessing the intellectual developments in the field of economics in general; and the use of game theory for economic history analysis, in particular. I will try to show that one can understand the growing literature that is utilizing game theoretical approaches in economic history as a product of deliberate efforts to both maintain and reproduce the boundaries and internal hierarchies in the discipline of economics. In the first section, I will examine the institutionalization of boundary-drawing processes within the economics discipline by tracing the lines between neoclassical economics, original institutional economics, and neoinstitutional economics, while trying to locate game theoretical approaches to economic history analysis into this picture. In order to do this, I will place special emphasis on their comprehension of time, uncertainty and power. In the second section, I will first address the relationships between publishing and employment patterns by examining the fields of specialization within the economics discipline. I will then move to a brief analysis of the professional successes of 24 selected prominent economic historians who utilize game theory in their field of research. In this regard, I will provide a brief account on their academic backgrounds and professional locations and affiliations. Lastly, I will present figures that show their publishing histories in both mainstream and heterodox journals in a comparative perspective. Therefore, I will aim to explore answers to the following questions in this paper. On what intellectual sources do the scholars in economics rely in order to legitimize their line of thinking? Where are those scholars employed? In what journals do they publish their studies? And lastly, by which institutions are they supported?

## I. Drawing the Boundaries: Neoclassical Economics, Original Institutional Economics and Neoinstitutionalism.

With the institutionalization of neoclassical economics as the mainstream of the field, the scope of the economics discipline became narrowed both in terms of time and space.<sup>1</sup> Equating the notion of “market” with that of “economy”, neoclassical economics<sup>2</sup> established the boundaries of the economic study

as an abstract realm of impersonal exchange of homogenous goods by means of voluntary transactions on an equal basis between large numbers of autonomous, fully-informed entities with profit-maximizing behavioral motivations and able to enter and leave freely (Harris-White, 1995: 87).

In other words, by being designed as a static and perfectionist framework, the neoclassical theory was based on a conception of *perfect competition* that can be called a given “state of affairs” (McNulty, 1968: 643). Rather than being an ordering force, this understanding of competition is defined by recourse to the structure of market, which is argued to be crowded by infinite numbers of identical and infinitesimally small production units, none of which can produce any significant amount of production that could have an effect on either the price or market share of a given commodity. Since all producers are assumed to produce the same homogenous commodity, and because the *Law of Indifference* applies as the basic principle,<sup>3</sup> there cannot be more than one price at any moment in the neoclassical conception of a competitive market.<sup>4</sup> In order to satisfy

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<sup>1</sup> As I will explain in more detail in this section, the time dimension was reduced by shifting the focus from long-term dynamic to short term static analysis. The space dimension was reduced by devolving the study of all societal institutions, except markets.

<sup>2</sup> The term “neoclassical economics” was first coined by Thorstein B. Veblen. He criticized Marshall and his colleagues “for having not parted with two quint essential presuppositions of their forefathers, namely a strict adherence to a hedonistic conception of man as the economic agent, and an exclusive focus on equilibrium-centered frame of analysis” (Ozveren, 1998: 471).

<sup>3</sup> Having been proposed and called “the general law of the utmost importance in Economics” by Jevons, *The Law of Indifference* is used to mean that “when two objects or commodities are subject to no important difference as regards the purpose in view, they will either of them be taken instead of the other with perfect indifference by a purchaser. Every such act of indifferent choice gives rise to an equation of degrees of utility, so that in this principle of indifference we have one of the central pivots of the theory” (Jevons, 1871: Section 7).

<sup>4</sup> In Jevon’s words: “When a commodity is perfectly uniform or homogeneous in quality, any portion may be indifferently used in place of an equal portion: hence, in the same market, and at the same moment, all portions must be exchanged at the same ratio. There can be no reason why a person should treat exactly similar things differently, and the slightest excess in what is demanded for one over the other will cause him to take the latter instead of the former. ... Hence follows what is undoubtedly true, with proper explanations, that *in the same open market, at any one moment, there cannot be two prices for the same kind of article*” (Jevons, 1888; emphasis in original). Thus, it goes without saying that, unlike the classical

the conditions of a competitive market, neoclassical economics is required to continue to assume “heroically” (Schumpeter, 1986: 941): by assuming to have perfect information, individuals are predetermined to behave in ways that maximize gains (either profits, as producers; or their utilities, as consumers). All production processes are assumed to take place immediately, under identical methods of production; no fixed costs and no minimum scale of production (hence a perfect mobility of resources) are assumed; and last but not least, technology is presumed to diffuse immediately, and with no additional costs. In short, given all these assumptions in the neoclassical universe of competition, what is left for a capitalist firm to do is just passively adjust its output to the given market conditions, which are externally given (Harris, 1988: 141).<sup>5</sup> Moreover, since it is given that no individual firm can have an influence on market supply, each firm is guaranteed to sell as much product as it can produce without having to lower its price (Botwinick, 1993: 125).<sup>6</sup> In other words, no capitalist firm in the neoclassical framework has the power; or the will, or any intention to execute power; or to directly influence another’s profitability or market share, — they are perfect price-takers (Shaikh, 1978: ff.240). As McNulty puts it:

the single activity which best characterized the meaning of competition in classical economics – *price cutting* by an individual firm in order to get rid of excess supplies— becomes the one activity impossible under perfect competition. And what for the classical economists was the single analytical function of the competitive process – the determination of market price—becomes, with perfect competition, the one thing unexplained and unaccounted for (1968: 49; emphasis added).

As can easily be seen from the above analysis,—rather than comprehended as a battle or rivalry as it is in the classical economics—the neoclassical conception of competition is that of a relative tranquility (Darity, et al., 2003). In the long-run, a general state of equilibrium is achieved, where changes are brought about solely by the perfect responses

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political analysis, establishment of a uniform market price in neoclassical theory is explained by referring not to the sphere of production, but to that of exchange, and more specifically, to consumer’s preferences.

<sup>5</sup> A capitalist firm in neoclassical comprehension chooses how much to produce in the following manner. It expands its output until it reaches the point where marginal cost of producing an additional unit of production is equal to market price, which is taken as an exogenous variable. Hence is not only the point a firm maximizes its profits, but also where all factors of production are fully employed, and all outputs are at their maximum (Schumpeter, 1994: 77-8).

<sup>6</sup> This is why price-cutting is not only unnecessary, but even irrational within the neoclassical framework! (Botwinick, 1993: 125-6).

of capitalist firms to changes in external parameters of the system.<sup>7</sup> At this point of equilibrium, all firms in an industry are assumed to employ the most efficient methods of production at minimum cost with an optimized plant size (Ochoa, 1987: 69).<sup>8</sup> Therefore, not only production conditions but the rate of profit is also uniform throughout the industry.

In sum, within this conceptualization, there exists no room for three vital phenomena of social reality, all of which are germane to institutions: *time*, *uncertainty* and *power*. Based on the work of Thorstein B. Veblen writing in the United States in the early twentieth century, one can argue that, Original Institutional Economics (OIE) was founded as a direct response to the general trend of the economics discipline turning into a *pseudo-natural-science*, as delineated above. Arguing that economy, by its very nature, is “an instituted process” (Polanyi, 1957), Veblen’s motivation was to bring societal institutions back into the scope of the study, in order to overcome the restrictions brought forth by scholars of formal economics.<sup>9</sup>

By relying extensively on instinctive psychology, pragmatist philosophy, and Darwinian evolutionary biology, OIE by contrast: a) focuses on individuals as well as institutions (defined as *emergent entities* in the socio-economic sphere); b) attempts to

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<sup>7</sup> Hence the capitalist firm is “simply reduced to a well-behaved preference function that obeys textbook axioms” (Hodgson, 2002: 204).

<sup>8</sup> Although firms in neoclassical framework are assumed to operate the state-of-art techniques, as is convincingly argued by Schumpeter, “perfect competition is not favorable to technological progress, for two reasons: (a) it cannot lead to high profitability and thus it cannot create real incentives for innovation; (b) it cannot create incentives for the capitalist and the enterprise to undertake risky and uncertain projects, because it is unable to guarantee, as a reward, an extra profit. More precisely, by incorporating new technologies, new types of organization and so on, innovations create surpluses of revenues over costs. Competition, however, tends to eliminate these extra revenues (extra profits)” (Michaelides, et al, 2005: 102). This is why, he concludes, “as a matter of fact, perfect competition is and always has been temporarily suspended whenever anything new is being introduced” (Schumpeter, 1994: 105).

<sup>9</sup> As it is widely known, the story begins with the canonical work of Adam Smith, *Inquiry into the Nature and Causes of The Wealth of Nations* (1776). Since then, I contend that research questions and parameters set by his text have remained, but the conceptual apparatus [*outillage mental*] of the discipline, changed outrageously; or, as Commons puts it: “Adam Smith started with a view of the forest but his followers lost themselves in the woods” (quoted in Ozveren, 1998: 469). Second milestone was John Stuart Mill’s *Principles of Political Economy* (1848), in which social institutions were separated from technical processes, distinguishing *Laws of Distribution* from *Laws of Production* (Ozveren, 1998: 470). Lastly, death blow came from the author of the *Principles of Economics* (1890), Alfred Marshall, founder of the neoclassical economics. Although he was aware of the limitations of mechanical thinking and announced that “the Mecca of the economist lies in economic biology rather than in economic dynamics” (see Hodgson, 1993a: 406), his *Principles* became the loadstar for those who were engaged in analysis of static and partial equilibria.

explain the cumulative causality between individual agency and emergent social phenomena; c) regards socio-cultural phenomena such as trust, habits, conformity, et al. as it regards “rational thought”; d) puts learning and knowledge at the center of technological and economic evolution, meaning that the economy is a prolific process; and e) develops a non-teleological view of historical development (Hodgson, 2001: 140). Therefore I argue that OIE, since its inception, has been well aware of the deficiencies inherent in the neoclassical understanding of time, knowledge and power. OIE seeks to address these deficiencies by attempting to understand: a) social and institutional change thus correcting the *temporal* dimension; b) the nature of social control and collective choice, thus correcting the *knowledge* dimension; c) the economic role of government and organizational structure of the institution of market and society, thus correcting the *power* dimension. Furthermore, by emphasizing the importance of technology in economic processes, OIE is also a strong candidate to distort the scarcity postulate of neoclassical economics.

Neoinstitutionalism (NIE) in economics was first revived as a correction to the deficiencies in the neoclassical comprehension of time, uncertainty and power. Nevertheless, instead of claiming to be a substitute for neoclassical economics, NIE devoted its efforts to adjust the concepts developed in OIE’s analysis to the mainstream tradition. I will now focus on the theoretical framework of neoclassical economics and the corrections developed by the neoinstitutionalist framework. Thus, I will try to show that many of the corrections first provided by OIE, and gave rise to the emergence of NIE’s analysis, while putting special emphasis on the theoretical position of those who advocate for game theoretical approaches in economic history.<sup>10</sup>

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<sup>10</sup> I should add in passing that it is mostly the case that those economic historians are also neoinstitutional economists. Moreover, neither tradition can easily be deemed as homogenous. As for economic historians under consideration, for instance, some call themselves as cliometrics or “new economic historians”, while some others refer to this approach as “comparative and historical institutional analysis” (Greif, 2006: 14). A distinctive example is Avner Greif, who has contributed to several researches with many distinguished neoinstitutionalists, while his book has been awarded Veblen 150 Prize in 2007, by two most important heterodox economics organizations, AFEE and EAEPE. Moreover, some of the “economic historians” I will be focusing on in this paper are not specialized only in the field of “economic history”. Nonetheless, I will call them “new economic historians” from now onwards.

**i. From Comparative Study of Static Equilibria to Institutional Change:**

Turning their back on “the view of market as a process” (Gloria-Palermo, 2002: 62), neoclassical scholars adopted a static view of economy [i.e., market] excluded from all other socio-economic relations, rather than as a dynamic process analysis. As Weeks puts it “[perfect] competition here creates equilibrium, a situation of harmonious coexistence of many capitals within each sector of social production. This homogenizing effect of competition is absolutely essential for the analysis, for without it no static equilibrium is possible” (1982: 67). One flaw with such a static way of understanding competition is that, although the content of competition is assumed to be determined by the structure of the market, how the market acquires its structure is left unexplained (Horverak, 1988: 276). Thus, comparing the dynamic process analysis with the static analysis of general equilibrium, Langlois writes:

The heart of the distinction is that, in a process analysis, events are represented as taking place sequentially in real time. By contrast, in a neoclassical analysis, one is normally concerned with an equilibrium situation- an equilibrium defined *not as the end-result or rest-state of a process*, but as the condition of *logical consistency among a group of mathematical relations* (Langlois, 1990: 7; emphasis added).

In other words, neoclassical economics is not that of a path-dependent process.<sup>11</sup> This has been spelled out long ago by Kaldor:

it is not possible, therefore, to determine the position of equilibrium from a given system of data, since every successive step taken in order to reach equilibrium will alter the conditions of equilibrium (the set of prices capable of bringing it about) and thus change the final position – unless the conditions are such that either (1) an equilibrium system of prices will be established immediately, or (2) the set of prices actually established leaves the conditions of equilibrium unaffected (in which case the final position will be independent of the route followed) (quoted in Harris, 1988: 146).

Veblen was the first who criticized this type of analysis of economic phenomena in the framework of general-equilibria. According to him, “(evolutionary) economics must be the theory of a process of cultural growth as determined by the economic interest, a theory of a *cumulative sequence of economic institutions stated in terms of the process itself*” (Veblen, [1898] 1998: 413; emphasis added). The second important contribution to

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<sup>11</sup> In path dependence, time and sequence are assumed to be central decisive mechanisms of reproduction of the system under consideration: “when a path dependent process is at work, early developments get deeply embedded in a particular ... environment, modifying the incentive structures and hence behaviors of social actors, and thereby changing the social significance or pattern of unfolding of events or processes occurring later in the sequence” (Pierson, 2000: 79).

the corrections of neoclassical understanding of market, conceptualized as the equilibrating focus of the economic processes, came from Nobel laureate Ronald Coase in 1937. In his highly-cited article, *The Nature of the Firm*, Coase tries to solve the puzzle of “why was [management] needed if the pricing system provided all the coordination necessary?” (Coase, 1991), as he attempts to explain the existence of the firms. He recognizes that “there is a cost of using the price mechanism” (Coase, 1937: 21), and firms exist in order to reduce what would later-to-be-called as *transaction costs*; such as enforcement costs, contractual costs or search costs, et al. His argument goes on that “a point must be reached where the costs of organizing an extra transaction within the firm are equal to the costs involved in carrying out the transaction in the *open market*, or, to the costs of organizing by *another entrepreneur*” (Coase, 1937: 23; emphasis added). This was the first time that neoclassical economics discovered the “frictions” in the market economy and became aware of the unavoidable importance of the institutions. A similar but a more radical rejection of the comparative study of static equilibria came from Joseph Schumpeter:

The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new method of production, the new markets, the new forms of industrial organization that *capitalist enterprise creates* [...that] incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism (Schumpeter, 1974: 83; emphasis added).

Schumpeter's argument leads to the conclusion that technological innovations originally are abrupt when they are first introduced, but they slow down as they are absorbed by other economic agents. In other words, “entrepreneurial profits” sustaining monopoly profits decline as inventions are imitated, lose originality, and reach the zero-profit level, where equilibrium and perfect competition is observed only for a short time at the peak of the conjectural cycle, and the cycle goes on to completion before another entrepreneurial creation is observed. This is a breaking point where the idea of equilibrium is left behind: in Schumpeter's analysis, although the economy has a tendency towards short-term equilibria, its long-term process represents disequilibrium dynamics.

Studying institutional analysis of economic change, new economic historians do not share the idea of static equilibria. However, new economic historians also “[start] traditionally

from the assumption of given individuals and [attempt] to explain how institutions can emerge from their interactions. The new institutionalism has taken the individual as the fundamental invariant and fixed conceptual foundation” (Hodgson, 2003: xi). Emanating from *methodological individualism*, neoinstitutionalists generally define institutions as “the rules of the game in a society” (North, 1992: 3), which have been “devised by human beings to create order and reduce uncertainty in exchange” (North, [1991] 2003: 175). As Hodgson puts it, “the explanatory movement is from individuals to institutions” (Hodgson, [1998] 2003: 155). This is explicit in North:

Defining institutions as the constraints that human beings impose on themselves makes the definition *complementary to the choice theoretic approach of neoclassical economic theory*. Building a theory of institutions on the foundation of individual choices is a step toward reconciling differences between economics and other social sciences ... Institutions are a creation of human beings. They evolve and are altered by human beings; *hence our theory must begin with the individual* (North, 1992: 5; emphasis added).

Although in a slightly different manner, original institutional economics, on the other hand, has always “[given] more emphasis to the interconnections between, and openness of, socio-economic systems and their component elements” (Hodgson, 2003: xi). Hence the concept of “institutional reinforcement” employed in the studies of new economic historians. Defining institutions as equilibrium phenomena in a repeated game, Greif, for instance, “adds to the idea of using strategic behavior in a repeated game setup the idea of consistency analysis – that is, how feedback from the game itself and its manifestations reinforce the setup” (Mokyr, 2005: 200). In other words,

In the short run, a self-enforcing institution perpetuates itself as the expected actions of agents motivate and enable other individuals to follow the associated behavioral regularity. Such an institution is also self-reinforcing if it exhibits positive feedback, in other words, it expands the range of situations in which the behaviors in question are observed. Islamic partnerships constituted, we shall see, just such a self-reinforcing institution. A self-enforcing institution is self-destroying if, while perpetuating itself in the short-run, it exhibits negative feedback by sowing the seeds of its own eventual demise. In the West, the partnership forms of the medieval period proved to be self-destroying (Kuran, 2003: 416).

As shown above, such an institutional analysis [which was first developed by original institutionalism], establishing feedback loops from individual actions to institutions back to individual actions again, constitutes the core of the game theoretical analysis of economic history. At the same time, their approach is also close to Schumpeter’s analysis of (dis-) equilibria processes. Nonetheless, it can also be observed that their

understanding of institutions relies heavily on transaction cost analysis of neoinstitutional economics. This is mainly due to their assumptions on rationality. Hence, the next section will deal with the developments in studying the uncertainty aspect of the economic universe.

**ii. From Perfect Knowledge to Bounded Rationality:**

The neoclassical framework has been mainly based on the conception of rationality standing upon the *maximization hypothesis*. It comprehends economic agents as goal-directed agents<sup>12</sup> who “will maximize ruthlessly to get it (whatever it is)” (Hollis & Nell; quoted in Hodgson, 1993b: 73). It was again Thorstein Veblen who first criticized the hedonistic conception of man. If I follow Braudel’s definition of rationality as a “continual adaptation of means to ends, an intelligent calculation of probabilities” (Braudel, 1992: 576), what I would call “*broadly defined utilitarian rationality*” appears as an extreme adaptation of the means-ends relation to the “economic man”. In Veblen’s cynical definition, such a man is “a lightning calculator of pleasures and pains, who oscillates like a homogeneous globule of desire of happiness under the impulse of stimuli that shift him about the area, but leave him intact” (Veblen, 1998: 411). The death blow to maximizing rationality, nonetheless, came from another Nobel prize-winner, Herbert A. Simon, when he introduced his concept of “bounded rationality” which is culminated from the “limited computational power (of the human brain) and uncertainty in the external world”; and which implies a procedure of “looking for satisfactory choices instead of optimal ones” (Simon, 1979: 501). Hence we arrive at the concept of “*satisficing*”. However, even the dual concepts of bounded rationality and satisficing do not violate but, on the contrary, lead to what I call “*narrowly defined neoclassical rationality*.” This concept replaces “perfection” (of competition, of market, etc.) with “imperfection” and “homogeneity” with “heterogeneity” (of goods, of preferences) by including the concept of uncertainty. Or in other words, in the neoclassical tradition, “*the form that the future can take is known in advance*.” “Tomorrow” can be characterized as a

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<sup>12</sup> As opposed to purposeful systems, Hodgson observes that “[s]impler goal-seeking devices (such as a thermostat) respond in a single and predetermined manner to changes in their environment. .. The purposeful agent is essentially different in that it can change its goals, and furthermore it may actually do this without any stimulus from outside. Human beings are regarded as purposeful systems of this type” (Hodgson, 1993b: 11).

vector of random variables, where the range the values can take is known today and, more important, so is the set of variables itself” (Littlechild, 1990: 28; emphasis original). With the adaptation of bounded rationality, however, “tomorrow [became] a vector of which the agent knows some components but not others; he or she knows there will be other components, but not what they will be; consequently, the agent cannot form a probability judgment as to the likelihood of their occurring” (Littlechild, 1990: 29).<sup>13</sup> Optimal choice is not maximizing but now the satisficing alternative, which in this case is “essentially cost-minimizing behaviour. Such behavior is just the dual (i.e., simply the twin) of the standard assumption of maximization” (Hodgson, 1993b: 80). Yet, the rationality assumption alongside with optimal choice approach still holds because the focus of a study which employs game theoretical tools must be based upon micro-foundations, and hence must be grounded in the rational-actor methodology of microeconomics:

[*Positive Political Economy*] seeks out principles and propositions against which actual experience can be compared in order to understand and explain, not judge, that experience ... Thus, its most distinguishing characteristics are its *coherent and unified theoretical view* of politics and economics, its strongly interdisciplinary nature, and its concern with explaining *empirical regularities* (Alt & Shepsle, 1992: 1).

Elsewhere, Riker argues that the most important advantage of [the game theoretical utilization of] rational choice theory is its use “in equilibrium models of social interaction” (1992: 175). He goes on to argue that equilibria are valuable in social science theory since “they are identified consequences of decisions that are necessary and sufficient to bring them about. An explanation is the assurance that an outcome must be the way it is because of antecedent conditions” (Riker, 1992: 175; emphasis added). His arguments make the rationality assumption and historical transaction cost analysis consistent with the game theoretical comprehension of “institution-as-an-equilibrium-of-a-game” (Furubotn & Richter, 2005: 37). As Zafirovski puts it, arguing “that social institutions rise, exist and evolve as rational responses to imperatives of economic efficiency (minimization of transaction costs or maximization of profit)” (2007: 325) neoinstitutionalism connected itself to the mainstream vein of economics.

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<sup>13</sup> Although in this quote I have just cited Littlechild talks about not bounded rationality but what he labels as “Austrian market process view”, I do contend that both frameworks can be argued to have similar approaches to the information problem in economics.

So far I tried to show that with the neoinstitutional intervention, mainstream economics attempted to correct its deficiencies in the spheres of time and knowledge by shifting the temporal dimension, from static equilibria to institutional change; and the informational dimension, from perfect knowledge to bounded rationality. I also tried to show that these corrections could easily be internalized by the mainstream since none of these attempts aimed at correcting, let alone challenging, the primary methodology employed by the orthodoxy of the discipline, namely methodological individualism. As one political scientist who is sympathetic to game theoretical approaches puts it:

What is thus wrong with methodological individualism, I believe, is not the idea that collective actions must be explained by referring to individual rationality but the idea that *society is a collection of undifferentiated and unrelated individuals*. The appropriate view is neither one of two ready-to-act classes nor of abstract individuals, but of individuals who are embedded in different types of [power] relations with others (Przeworski, 1985: 393; emphasis added).

The next part hence will deal with the development of the studies on the third missing dimension in mainstream theory, namely power.

### **iii. From Perfect Competition to the “Discovery” of Power:**

Last flow of critique to neoclassical limitations aimed at the *one-dimensional view* of power in the mainstream tradition.<sup>14</sup> In the orthodox framework, power is either ignored or taken as exogenous, and is deemed as the legitimate domain for political sciences since the market is assumed perfectly competitive.

As I tried to show in the opening pages of this paper, since perfect competition sets the standard notion of competition in mainstream economics, and in its purest form, and since it is distinguished by recourse to specifically defined market structure, any deviation from the conditions of the market structure of perfect competition is understood necessarily as the negation of competition itself (Bryan, 1985: 75). Hence whenever a

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<sup>14</sup> Here, I refer to Young’s categorization of the meanings of power which can be summarized as follows:

1. A has the ability to win in overt conflict with B;
2. A is able to divert B’s wants;
3. A is able to reconstitute B’s wants;
4. A is able to reconstitute B’s wants against B’s interests.

Young concludes that in neoclassical conception of power, dominance means “market power and price leadership” and thus involves only the first dimension but has a tendency to move to the second dimension (Young, 2002: 51, 52-4). I can conclude that with the neoinstitutionalist contribution, such a move has been achieved.

firm has the capability to adapt real competitive tactics, such as price-cutting strategies to rule their competitors out of market in order to increase its market share, the conclusion neoclassical theory derives is that of *lessening of competition*, hence we arrive at the notion of *imperfect* competition. In other words, in the neoclassical universe, firms are either *too small* to be capable of exerting any influence on market, hence no real competitive battles are fought, and this is what “perfect” competition mean to the mind of an orthodox economist; or they are *adequately big in size* in relation to market to allow them to build up the capability to compete better than others, and it is exactly at this point that competition is interpreted to cease to exist. This is why Weeks labels such an understanding of competition as the “quantity theory of competition”: in neoclassical framework, *competition is a question of numbers and the size of competitors* (1981: 153). It is also crucial at this point to remember that, what distinguishes the competitive firm from a monopolistic firm is not found in behavioral assumptions about the firm, nor in their cost structures, but *only* in the demand curves they face in accordance with the market structures they are operating in (McNulty, 1968: 651).<sup>15</sup> In fact, as is very aptly put by Shaikh, “the very concept of ‘imperfect’ competition is itself the dark side of the concept of ‘perfect’ competition [in which] all of the tactics and strategy of real competitive battles are spirited away” (1980: 82).<sup>16</sup>

An early reaction to such an understanding of the market institution in neoclassical economics again came from an original-institutionalist, namely J. R. Commons, who assumed that the State “has its origins partly in limitations on the operation of spontaneous processes, and partly in the desire of groups to alter the distribution of income in their favour” (Rutherford, 1995: 92). However, it was Ronald Coase who presented the crucial critique to the neoclassics’ enthusiasm to “search for a fixed point, a particular vector of prices and quantities for which all the system’s equations are

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<sup>15</sup> Harris argues that “the firm is inherently limited in its capacity for expansion owing to some presumed fixity within that causes its costs to increase beyond its given point of efficient operation. This condition is what confines it to occupy an infinitesimal space in the total market. Thus, even though the firm aims to increase its profits, it is nevertheless blocked in pursuing this aim by the impenetrable barrier of its own limitations” (1988: 141). Thus, a monopolistic firm in the neoclassical framework can overcome these barriers merely thanks to the demand curve it is facing.

<sup>16</sup> As Schumpeter aptly points out, regardless of his power, a monopolist needs to have concerns to create the demand for his services, and to defend his market against competition [unless buttressed by public authority]. Yet, in neoclassical analysis, he can do it only on the condition that he does not behave like a monopolist! (Schumpeter, 1994: 99).

simultaneously satisfied” (Langlois, 1990: 8). Coase’s *The Problem of Social Cost* [1960] began by arguing that “when it is costless to transact, the efficient neoclassical competitive solution obtains. It does so because the competitive structure of efficient markets leads the parties to arrive costlessly at the solution that maximizes aggregate income regardless of the institutional arrangements ... when it is costly to transact, institutions matter” (North, 1995: 18-19). Coase theorem’s logical conclusion was that “a private-enterprise system cannot function properly unless *property rights* are created in resources, and, when this is done, someone wishing to use a resource has to pay the owner to obtain it. Chaos disappears; and so does the government except that a legal system to *define* property rights and to *arbitrate* disputes is, of course, necessary” (Coase [1959], quoted in Williamson, [2000] 2003: 280; emphasis added).

Douglas North’s neoclassical theory of the state and institutional change extensively relies on the development of these concepts. Since his work has been one of the cornerstones in the field of neoinstitutional economics and an exemplary analysis of quantitative economic history, it is worth to be examined in some detail. North starts his analysis by defining concepts central to his theory. According to him, *property rights* are “the rights individuals appropriate over their own labor and the goods and services they possess” (North, 1992: 33). He then goes on to argue that institutions “provide the structure for exchange that (together with the technology employed) determines the *cost of transacting and the cost of transformation*” (North, 1992: 34; emphasis added). Then he develops a transaction cost theory of exchange which is based on the liberal assumption of “gains from trade”. He distinguishes (a) personalized exchange involving small-scale production and local trade, in which transactions costs are low while transformation costs are high; (b) long-distance trade, which poses two distinct transaction costs due to economies of scale and specialization, namely the classical problem of agency and high information costs (North, [1991] 2003: 99-100); (c) impersonal exchange with third party enforcement of our day (North, 1992: 34-35).

For the purposes of his work, the State is defined as “an organization with a comparative advantage in violence, extending over a geographic area whose boundaries are

determined by its power to tax constituents” (North, 1981: 21). He starts with a simple model consisting of a ruler and diverse constituents. In this model, “the ruler acts like a discriminating monopolist, *offering* to different groups of constituents *protection and justice* or at least the reduction of internal disorder and the protection of property rights *in return for tax revenue*” (North, 1992: 48; emphasis added). Such a *contractual approach* to the State reaches a logical conclusion that, “since different constituents groups have different opportunity costs and bargaining power with the ruler, different bargains result” (North, 1992: 48-9). Economies of scale works here: “total income in the society is higher as a result of an organization specializing these services than it would be if each individual in society protected his own property” (North, 1981: 23). The state is also constrained by “the opportunity cost of its constituents since there always exist potential rivals to provide the same set of services” (North, 1981: 23). These rivals, North adds, may be competing states to which domestic constituents may immigrate. They might also be potential rivals within the country who seek to exploit the opportunities to monopolize the means of violence. In his more complicated step of modeling the polity, North introduces a representative body, which acts as a nodal agency between the state and the constituents. Interactive relations between the State, the representative body and the constituents, according to North, determine the structure of property rights, which in turn, determine the level of efficiency in the economy.

Up to here I tried to show the emergence of *transaction cost economics* and the *property rights approach*, which constitute the fundamental concepts of institutional analysis. Along with these two important constructs, new institutionalism relies on an important subfield called as *contract theory*, one of the main conceptual tools Douglas North utilized to construct his theory of the State as I tried to show above. Contract theory studies incentives and asymmetric information problems and heavily relies on the contributions summarized above. Furubotn and Richter distinguish two variant types of contract theories. First, neoclassical economics relies extensively on what is called as “*agency theory*”, which deals with problems of asymmetric information between contractual parties existing either before or after a transaction has taken place. Second, the new institutionalism mainly concerns what is called as “*relational and incomplete*

*contract theory*” which “focuses on informational asymmetries that can arise between the parties to a (usually longer-term) contract on one side and a third party (e.g., the court) on the other. An important objective of such contracts is to overcome the post-contractual opportunism” (Furubotn and Richter, 2005: 36).

To sum up, I can argue that the new institutional economics can be identified as *the transaction cost analysis of property rights and contracts*. Rutherford puts it clearly: “institutions and institutional change have been analyzed as ways of reducing transactions costs, reducing uncertainty, internalizing externalities, and producing collective benefits from coordinated or cooperative behavior (Rutherford, [2001] 2003: 17).<sup>17</sup>

Before I move on the next section, I want to put forth some critiques against mathematical modeling and formal economics.<sup>18</sup> Three major institutional advantages acquired by the neoclassical mainstream have been spelled out:

[First a] language barrier was erected between two groups [the other being institutional economics] which served to sever all further communication. Secondly, the adaptation of mathematics as the official language of economics helped the mainstream to cut across language barriers which had until then restricted international exchanges. . . . Thirdly, mathematization of mainstream economics created a new domain of research possibilities for the initiated *normal scientists* (Ozveren, 1998: 512).

All of the advantages quoted above, but especially the third one, indicate that mathematics, far from being a “neutral” tool box,<sup>19</sup> has on the contrary, been transformative. As Weldes argues elsewhere, mathematics in general and game theory in particular “can . . . provide more or less precise representation of, and rigorously clarify the logic of, situation of strategic interaction in particular modern societies” (1989: 374).

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<sup>17</sup> For an elaborate study which employs all of these approaches see Greif (1994).

<sup>18</sup> Here I use Polanyi’s distinction between formal and substantive meanings of economy: “the substantive meaning of economy derives from man’s dependence for his living upon nature and his fellows . . . the formal meaning of economic derives from the logical character of the means-ends relationship” (Polanyi, 1957: 243). So formal economics here refers not only to mainstream economics but also to economic history which utilizes game theory.

<sup>19</sup> For instance North argues that “the power of game theory is . . . that it makes you structure the argument in formal terms, *in precise terms*” (2008: 209; emphasis added). Greif goes as far to argue that “the institutional foundations of exchange in past societies were not studied in economic history before the introduction of game theory because *there was no appropriate theoretical framework*” (2002: 2000; emphasis added).

However, as I will elaborate more in detail below, mathematization became the *foundation for*, instead of being the *end-point of*, economic analysis in the mainstream tradition. In other words, the discipline was “taken over” by nearly equating precision of content to mean almost exclusively mathematical representation.

These last remarks on the prevalent use of mathematical modeling in economics should be borne in mind if we are to analyze internal hierarchies within the discipline in general and emergence of game theoretical approaches in economic history in particular. Pointing out the institutional and organizational strategies and structures which would solidify the quantitative domination of the field will be my next task.

## **II. Internal Hierarchies: Employment, Publishing and Financial Supporting Patterns**

In this section, I will first examine the internal hierarchies in the discipline of economics. Secondly, I will focus on a sample of economic historians who employ game-theoretical approaches to their field of specialization. As evidenced by publishing and employment patterns, economics fundamentally consists of micro- and macroeconomics with an extensive usage of mathematical and quantitative methodology, while economic history, as a field of specialization, has been largely marginalized. However, an examination reveals that those who utilize game theory in economic history achieve success.

### **i. Hardcore of the Discipline: Microeconomics, Macroeconomics and Mathematics**

In a recent article, the now-famous post-Keynesian economist Paul Davidson describes the submission and publishing of his pathbreaking article “Money, Portfolio Balance, Capital Accumulation and Economic Growth” (*Econometrica*, 1968). According to this “structural anecdote”, nine months after submitting his paper, he received two referee’s reports indicating that although it was worthy of appreciation, the paper still did not meet the publishing criteria simply because it was not “precise enough in its analytical contend”. Davidson then recognized that

“absence of algebra was apparently the basis for the referees’ characterization of the manuscript’s ‘non-analytical’ character. I revised the paper by merely introducing a simple algebraic equation for each supply and demand relationship in the text just before the verbal description of these relationships and their geometric representations. The result was the addition of a total of fourteen equations. Otherwise, the textual exposition

and geometric diagrams remained virtually unchanged. On 13 April 1967, the editor informed me that this revised version of the manuscript was now apparently precise enough for him to accept it for publication” (Davidson, 2006: 16)

This paper was published in *Econometrica*, a journal which is “simply closed to a non-mathematician” (Stigler et al. 1995: 343). It can be argued that *Econometrica*’s publishing policy has expanded to other economics journals since then. As one study shows, up until the first quarter of twentieth century, not less than 95% of published articles in five most visible journals in economics were using primarily verbal techniques.<sup>20</sup> Even for the period of 1962-63, this amount was as high as 33 percent. By 1989-90, on the other hand, 95% of all articles published in these leading journals have been dominated by mathematical methods ranging from algebra and/or econometrics to calculus or more advanced techniques (Stigler et al. 1995: 342).

From the viewpoint of sociology of science, such a trend is mainly due to two main underlying processes, inter-relatedly structured. First, a high degree of concentration among the like-minded editors and authors of economics journals in a few academic institutions may have led such uniformity. In a recent study, for example, Hodgson and Rothman (1999) found that there exists such an institutional oligopoly in economics journals which may impede the promotion of innovation and change in economic science. According to the data they gathered, 83.8% of the editors (with known PhD origins) of the thirty most visible economics journals of 1995 obtained their PhDs or other high degrees in U.S. institutions (1999: 170), while 70.8% of them have been affiliated with U.S. institutions (1999: 171). The employment figure increases to 81.9% if the ‘top 15’ economics journals are considered (1999: 176). Figures on journal authors, follow a similar pattern. 83.3% of the top thirty journal authors (with known PhD origins) obtained their PhDs or high degrees in U.S. institutions (1999: 173), while 65.7% of them have been affiliated with U.S. institutions (1999: 175). This figure also increases to 79.9% if ‘top 15’ economics journals are considered (1999: 177).<sup>21</sup> All these figures

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<sup>20</sup> Five journals investigated in this study are as follows: Quarterly Journal of Economics (QJE), American Economic Review (AER), Journal of Political Economy (JPE), *Econometrica* and Review of Economics and Statistics.

<sup>21</sup> Similar figures are provided in Smart and Waldfogel (1996). According to my calculations based on their data, 82.7% of authors who appeared in four leading economics journals, namely AER, QJE, JPE and *Econometrica*, for the years 1980-1985 are institutionally affiliated with U.S. institutions (1996: 32).

suggest that scholars who have been contributing to the leading economics journals share significantly similar institutional, and hence intellectual, backgrounds. This takes us to the second reason why quantitative methods have been largely dominating the environment of economics research. As Hansen puts it: “what economists do is what they are trained to do in their graduate programs” (1991: 1054), and what they are trained to do heavily relies on formal methods of mathematics.<sup>22</sup>

Major findings of American Economic Association’s Commission on Graduate Education in Economics (COGEE) point out at least two important problems in graduate education in economics. First, although economics discipline and graduate training are extensively preoccupied with formal methods and techniques, economics graduates report that they make little use of these in both their research and later work as professional economists. Second, although they mainly acquire mathematical skills during their graduate education, they strongly feel the lack of and the need for creative and communication skills (Hansen, 1991: 1068-1075). In short, “insufficient emphasis given to real-world problems and to empirical applications and policy issues, *excessive emphasis on mathematical technique for its own sake*, narrowness of content, lack of attention to economic history, and the need for more history of thought and interdisciplinary knowledge” (Hansen, 1991: 1067; emphasis added) are amongst overriding complaints of graduate students in economics. The overall conclusion appearing in the Report of the Commission thus deserves close attention, The conclusion also reveals the second reason underlying mathematization process of economics: “as each successive generation of economists becomes more skilled at mathematics, each demands more of the next ... Commission's fear is that graduate programs may be turning out a generation with too many *idiots savants* skilled in technique but innocent of real economic issues” (quoted in Coats, 1992: 344, 347).

Looking at employment figures yields similar results. I look at two sources: “Job Openings in Economics” (JOE), which is a service of American Economic Association,

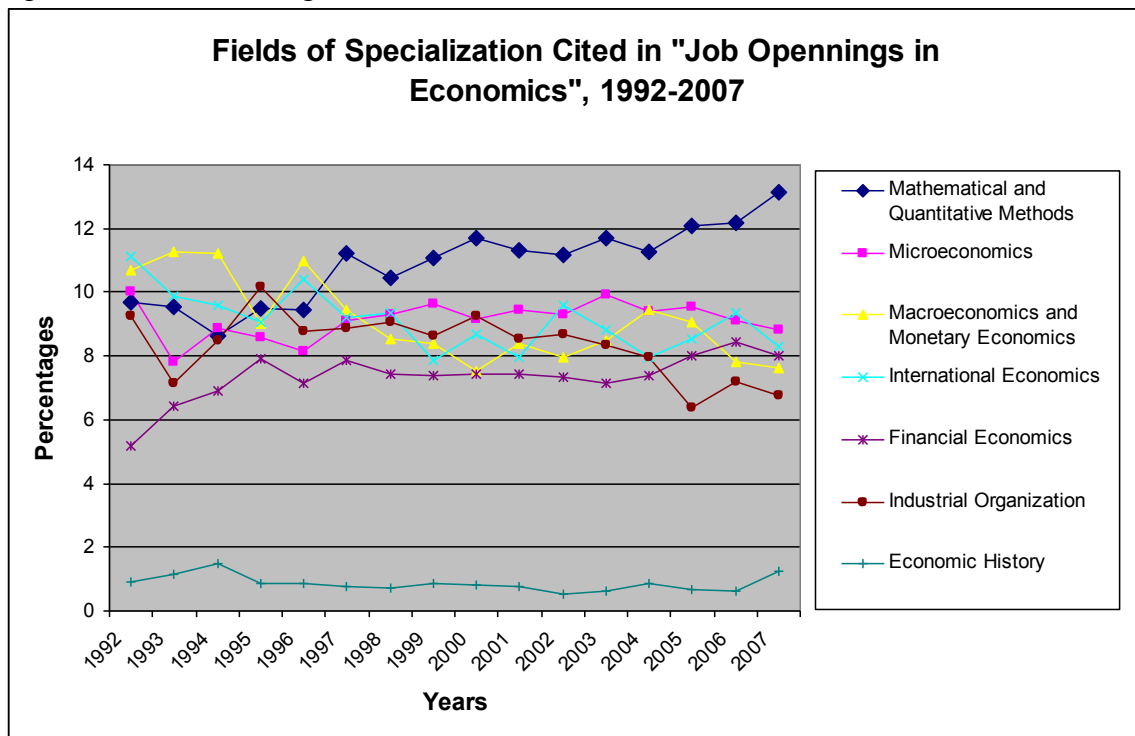
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<sup>22</sup> What John V. C. Nye, among the economic historians who employ game theory in their research field, notes in an interview is exemplary. In order to discourage his interest in economic history, many of his doctoral advisors “[t]old [him] that economic history was a backwater and that [*he*]’d be wasting [*his*] potential there” (emphasis added). He concludes as follows: “It turns out that in recent years many of Northwestern's most successful economics graduates have come out of economic history. It was especially gratifying for me when North won the Nobel for his work in economic history” (See, “Nye ascending ranks of economic historians” at <http://record.wustl.edu/archive/1996/04-04-96/8828.html>.)

and “Survey of the Labor Market for New PhD Hires in Economics” (SURVEY), run by scholars at the Center for Business and Economic Research and the Department of Economics at the University of Arkansas.<sup>23</sup>

Urged by the American Economic Association, members of the association have a professional obligation to list their job openings in JOE. The number of new jobs listed in JOE is then reported every year in the *Proceedings* of the annual meeting of American Economic Association, published by *American Economic Review*. Based on this data, Figure 1 below compares the last fifteen years’ general trends in employment patterns in economics, expressed as fields of specialization cited in JOE.<sup>24</sup>

*Figure 1.* Fields of Specialization Cited in “Job Openings in Economics” represented as Percentages of Total Citations, 1992-2007.



Dramatic unbalance between the fields of specialization cited in JOE can be seen in Figure 1. Of the 56693 citations appearing in JOE between 1992 and 2007, Mathematical

<sup>23</sup> All SURVEY data can be found at <http://cber.uark.edu>.

<sup>24</sup> Figure 1 is constructed as follows. For the years between 1992-2007, numbers of citations in respective fields of specialization are calculated as the percentages of total citations. Lists then are created in percentages so as to represent the general trends in employment. Source: *Proceedings* (1993-2008).

and Quantitative Methods<sup>25</sup> leads the list with 6345 citations (11.2% of all citations). Another interesting finding is that, together with Financial Economics, they are the only fields of specialization to show general increasing patterns. Micro- and Macroeconomics along with International Economics, Financial Economics and Industrial Organization follow Mathematical and Quantitative Methods, taking 9.2%, 8.8%, and 9%, 7.5% and 8.2% of all citations, respectively. It should also be mentioned that that, of the total of twenty primary JEL classifications, these six fields together dominate the economics profession, with no less than 53.8%. Economic History as a category is on the other hand represented with only 480 citations, summing up to 0.8% of all citations.

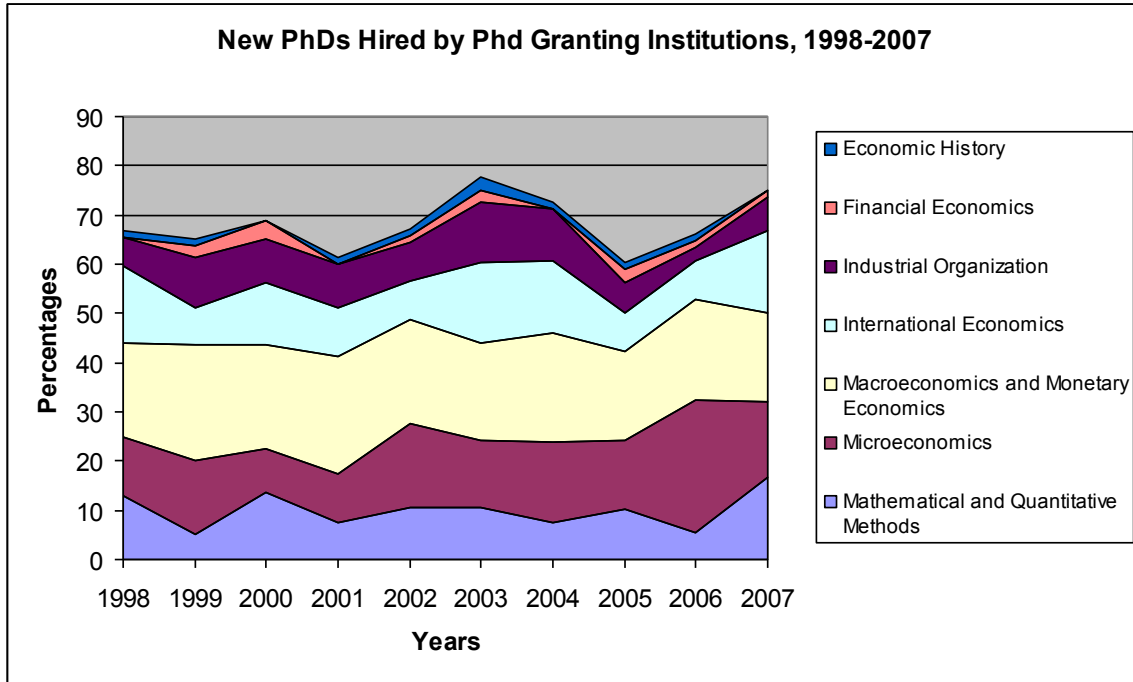
The second source on which I want to focus is provided by SURVEYs, from 1999-2008. These surveys are conveyed by sending questionnaires to both academic and nonacademic institutions all over the U.S. Academic institutions are classified as PhD, Master and Bachelor degree granting institutions. For the purposes of this study, and because they contain the healthiest data, I will only examine the evidence provided by PhD granting institutions. Moreover, although other figures such as expected and actual salaries offered are also provided in these surveys, I will only focus on three different variables: new PhDs hired by PhD granting institutions for the year the respective survey was conveyed, and demand and supply of New PhDs for the year following the survey year. Lastly, as in *Proceedings*, all figures here account for fields of specialization. Figure 2 below shows the general patterns in employment, represented as percentages taken by fields of specialization over all employment numbers.<sup>26</sup>

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<sup>25</sup> All fields of specialization are constructed as Journal of Economic Literature (JEL) categories.

<sup>26</sup> Source: SURVEYs (1998-2008).

Figure 2. New PhDs hired by PhD granting institutions, 1998-2007.



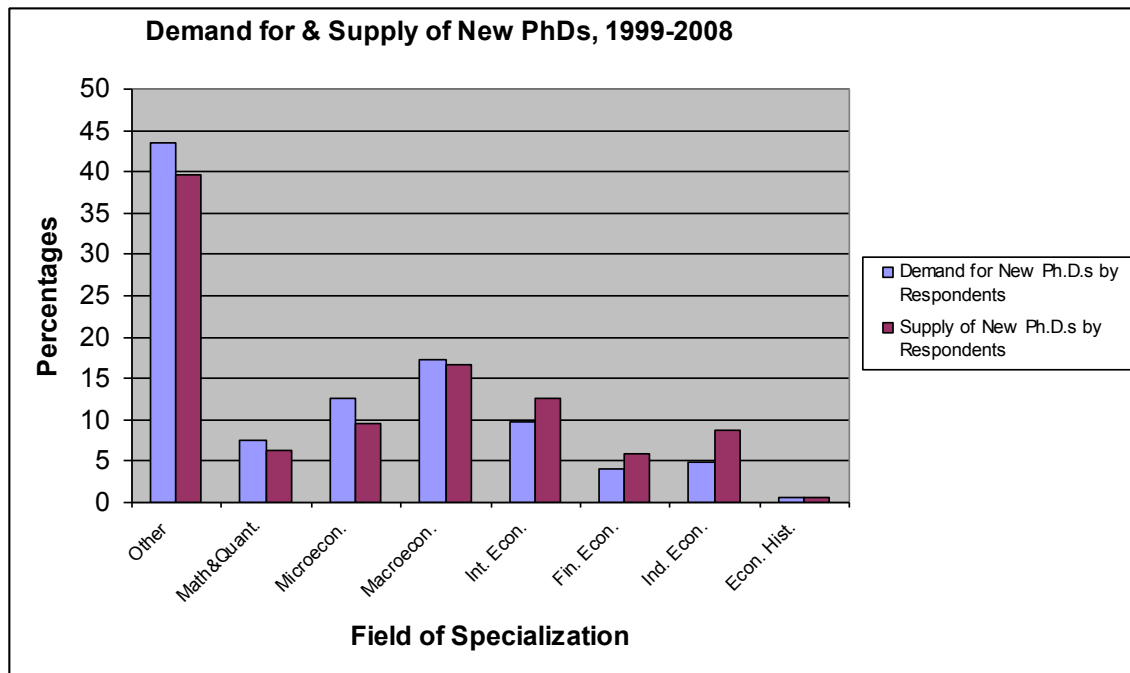
As the above figure shows, the most striking result is that over the last ten years, new jobs opened in PhD granting institutions have mostly gone to scholars specializing in five fields: micro- and macroeconomics, international economics, industrial organization and mathematical and quantitative methods – occupying no less than 60% of all positions. Moreover, their weight can also be observed to have increased to 73.6% for the year 2007. In terms of total numbers, specialists in macroeconomics and monetary policy has led the list with taking 160 positions of 772 positions in total, which equals up to 20.7% of all new job openings. They have been followed by micro- and international economists, who appears to have taken 14.8% and 11.7% of all positions, respectively. Scholars who are specialized in Mathematical and Quantitative Methods are also represented by 10%. Also similar to the findings derived from *Proceedings*, on the other hand, only nine economic historians have been employed by PhD granting institutions during the last decade, which equals up to no more than 1.17% of all 772 new positions. If we look at the demand for and supply of new PhDs for the years between 1999 and

2008, we again observe similar results. Table 1 and Figure 3 represent the relationship between demand for and supply of new PhDs classified with respect to their fields of specialization, for the years 1999-2008.

*Table1.* Demand For and Supply of New PhDs. Aggregate Sums for the years 1999-2008.

	Demand for New PhDs	Percent	Supply of New PhDs	Percent
Other	734	43.4	1875	39.6
Mathematical&Quantitative	128	7.5	302	6.4
Microeconomics	215	12.7	449	9.5
Macroeconomics	291	17.2	785	16.6
International Economics	164	9.7	596	12.6
Financial Economics	69	4.1	280	5.9
Industrial Organization	82	4.8	412	8.7
Economic History	10	0.6	33	0.7
Total	1693	100	4732	100

*Figure3.* Demand for & Supply of New PhDs, 1999-2008. Aggregate Sums.



As can be seen above, both demand for and supply of new PhDs are again dominated by five main fields of specialization, summing to no less than 52% for demand, and 53.7% for supply. Demand is bigger than the supply of new PhDs for three fields: Mathematical and Quantitative Methods, Microeconomics, and Macroeconomics and Monetary Economics. That means when the scholars coming from these fields enter the job market,

it is relatively easier for them to be hired by PhD granting institutions. Supply of economic historians, on the other hand, is represented by only 33 scholars out of 4732 scholars, 0.7% of all new PhDs, in other words. Moreover, they are demanded for only 10 positions out of 1693 new posts, summing up to 0.6%.

All the figures above confirm that economics as a discipline is mostly dominated by only a few fields of specialization, while “Mathematical and Quantitative Methods” as a category has been a promising field of research. Economic history, on the other hand, has been largely ignored and marginalized. Nonetheless, those economic historians who have been employing game theoretical approaches to their field of research, or in other words, who have been extensively using mathematical and quantitative methods, seem to have been remaining exceptional. Examining this phenomenon will be my next task.

## ii. A Survey for Selected Economic Historians

In this part of the paper, I will examine the career paths of 24 economic historians, all of whom are trying to employ game theory to the field of economic history. I chose twenty-one of these scholars via an article written by Avner Greif in which he presents “the small, yet growing, literature that employs game theory for economic analysis” (Greif, 2002: 1). I selected the remaining three names (Botticini, Kuran and Broadberry) because they are the authors of articles that have been ranked among the top five most-cited articles of all citations published in the *Journal of Economic History*,<sup>27</sup> which aims at employing game theory to economic history analysis. Table 2 summarizes the geographical locations, institutional backgrounds, and gender distribution of these scholars.

Table2. Institutional Locations and Background of Authors.

	Employment	PhD	Gender
Ann M. Carlos	University of Colorado at Boulder	University of Western Ontario	F
Avner Greif	Stanford University	Northwestern University	M
Barry Eichengreen	University of California, Berkeley	Yale University	M
Barry R. Weingast	Stanford University	California Institute of Technology	M
Chiaki Moriguchi	Northwestern University	Stanford University	F
Deirdre N. McCloskey	University of Illinois	Harvard University	F
Douglas A. Irwin	Dartmouth College	Columbia University	M
Douglass C. North	Washington University, St.Louis	University of California	M

<sup>27</sup> See, <http://journals.cambridge.org/action/mostCitedArticle?jid=JEH> [accessed in December 2008].

		Berkeley	
Elizabeth Hoffman	Iowa State University	California Institute of Technology	F
Jean-Laurent Rosenthal	UCLA	California Institute of Technology	M
Joel Mokyr	Northwestern University	Yale University	M
John Graham Treble	Swansea University	Northwestern University	M
John V. C. Nye	Washington University in St. Louis	Northwestern University	M
Karen B. Clay	Carnegie Mellon University	Stanford University	F
Margaret C. Levenstein	University of Michigan	Yale University	F
Maristella Botticini	Università di Torino	Northwestern University	F
Masahiko Aoki	Stanford University	University of Minnesota	M
Paul David	Stanford University	Harvard University	M
Paul Milgrom	Stanford University	Stanford University	M
Robert Porter	Northwestern University	Princeton University	M
Shawn Kantor	University of California, Merced	California Institute of Technology	M
Simon Johnson	MIT	MIT	M
Stephen N. Broadberry	University of Warwick	Oxford University	M
Timur Kuran	University of Southern California	Stanford University	M

As it can be seen from Table 2, US institutions largely dominate. 21 scholars out of 24 are employed by US universities, summing up to 87.5%. US institutions are followed by English and Italian universities, represented by 2 and 1 scholar(s), respectively. It should also be noted that Stanford University comes first, with 6 scholars. Nonetheless, when compared with the institutions from which they obtained their PhD degrees, one can say that employment figures show relatively a more heterogeneous distribution. On the other hand, except for one colleague who graduated from Oxford University, they all acquired their PhD degrees from US universities. Moreover, there exists a condensed layout here: 62.5% of all scholars come from only four institutions: Stanford University, Northwestern University, and California Institute of Technology represented by four graduates for each, and Yale University with three. This evidence suggests that leading scholars in this newly emerging field share more or less same institutional backgrounds. Moreover, graduating from and employment within US institutions seem to have shaped their publishing patterns. Table 3 below summarizes selected journals and their

publishing policies towards historical studies. The table shows how many places they give to studies described as related to “economic history” and “history”.<sup>28</sup>

Table 3. Publishing Policies of the Selected Journals.

	Country	Descriptor: "Economic History"	Descriptor: "History" <sup>29</sup>	Total Number of Articles	Percentage of "Economic History"	Percentage of "History"
American Economic Review	US	241	319	7556	3.189518	4.22181
Journal of Political Economy	US	158	356	4839	3.265137	7.356892
Journal of Economic Issues	US	60	809	2661	2.254791	30.4021
Canadian Journal of Economics	Canada	45	101	2227	2.020656	4.535249
Economic History Review	UK	1726	1799	1994	86.55968	90.22066
Review of Economic Studies	UK	6	10	1898	0.316122	0.52687
Journal of Economic History	US	1657	1676	1739	95.28465	96.37723
Journal of Economic Perspectives	US	55	137	1294	4.250386	10.58733
Journal of Institutional & Theoretical Economics	Germany	88	179	1250	7.04	14.32
Review of Political Economy & Journal of Evolutionary Economics	US & Germany	31	250	919	3.373232	27.20348
Explorations in Economic History	Netherlands & Netherlands	824	831	844	97.63033	98.45972
European Economic Review	s	41	65	818	5.012225	7.94621
Journal of Economic Literature	US	22	116	610	3.606557	19.01639

I chose journals that specialize in economic history (Econ Hist Rev, J Econ Hist, Explorations), or which are among the top-rated journals, and which publish articles on broad range of fields in economics (AER, CJE, Rev Evon Stud, JEP, Eur Econ Rev, JEL),<sup>30</sup> or which are among the journals in heterodox tradition in economics, and which

<sup>28</sup> All figures are gathered from the data base “EconLit” and calculated by me. <http://www.aeaweb.org/econlit/index.php> [last accessed in January, 2009].

<sup>29</sup> Descriptor “history” overwhelmingly indicates studies in either economic history or history of economic thought.

<sup>30</sup> There exists a vast literature on ranking economics journals. See for example, Hodgson&Rothman 1999; Kodrzycki&Yu 2006, Kalaidzidakis et al 2001. I would like to add in passing that ranking economic journals has also been a part of constructing internal hierarchies within the discipline. A story told by Rotschild is inspiring, hence worth quoting in length: “I sent my first article, a short note, to the *Economic Journal*. I must add that there weren’t many journals at the time, there were no core journals and other journals, there were just journals. Two days later I got a postcard from Keynes stating that he liked it and

publish studies on economic history or history of economic thought (JEI, Rev Pol Econ, JEE).<sup>31</sup> Many top-rated journals, such as *Econometrica* or *Quarterly Journal of Economics*, have not been included because of their substantive irrelevance. Journals which aim at broadening heterodox economics such as *Evolutionary and Institutional Economics Review* or *Journal of Institutional Economics* (which is published by one of the most prestigious heterodox economics organizations, the European Association of Evolutionary Political Economics) have not been included because of their recentness. Lastly, I deliberately aimed at picking the most relevant top-ranked journals of non- US origin to have a solid base for geographical comparison. Below are the results which summarize the aforementioned authors' aggregate contribution to the selected journals.

*Table 4. Authors' Aggregate Contribution to the Selected Journals*

	<b>Number of Articles<sup>32</sup></b>	<b>Percentage of Articles</b>
Journal of Economic History	89	28.71
American Economic Review	64	20.65
Explorations in Economic History	46	14.84
Economic History Review	21	6.77
Journal of Institutional and Theoretical Economics	19	6.13
Journal of Economic Literature	19	6.13
Journal of Political Economy	18	5.80
Journal of Economic Perspectives	11	3.55
European Economic Review	9	2.90
Canadian Journal of Economics	7	2.26
Review of Economic Studies	4	1.29
Review of Political Economy & Journal of Evolutionary Economics	2	0.64
Journal of Economic Issues	1	0.32
Total	310	100

Some interesting conclusions can be derived from these figures. First, evidence suggests that there exists a clustering in publishing patterns. Out of 310 published articles, 199 of them have been published in only three journals, *Journal of Economic History*, *American Economic Review* and *Explorations in Economic History*<sup>33</sup> -- no less than 64.1%.

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that he would print it. Unbelievable for today! He didn't know me of course; I was just a little lecturer in far away Glasgow" (Rotschild, 2006: 12).

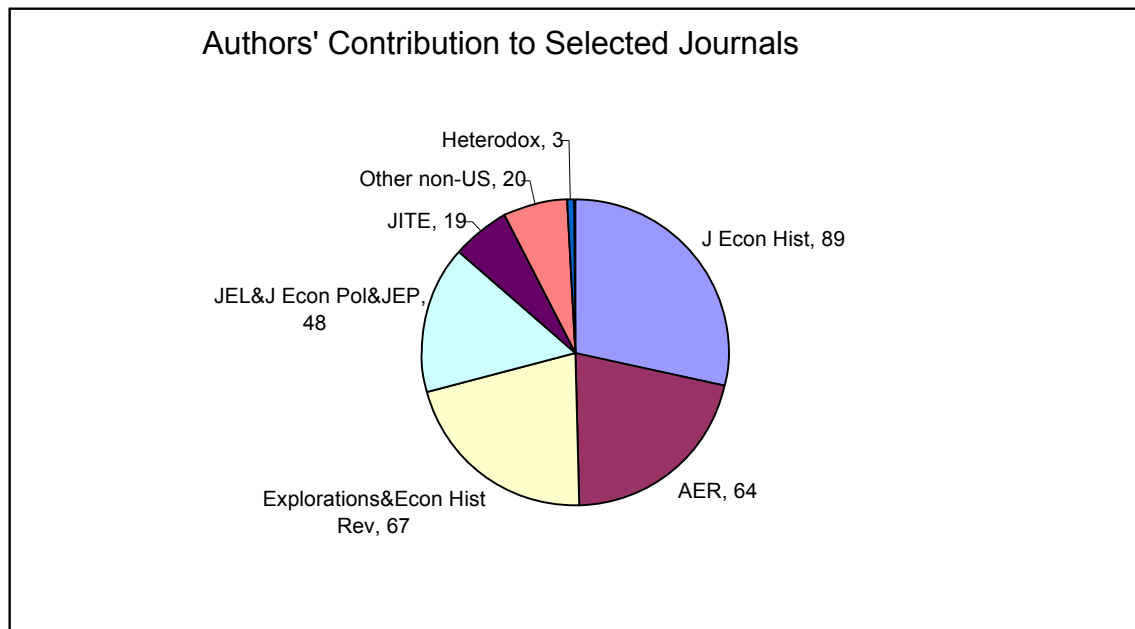
<sup>31</sup> See <http://www.hetecon.com/>

<sup>32</sup> Book reviews have been excluded.

<sup>33</sup> Though of European origin, *Explorations* can be deemed as home to Cliometricians, as membership to Cliometric Society also brings receipt of special discount over the personal subscription rate to the journal.

Secondly, geographical location of journals also seems to have been determinant. Although *European Economic Review* and *Review of Economic Studies* are often cited as the top-ranked and most prestigious European economics journals, the aforementioned scholars chose to publish only thirteen articles in those journals, less than 4.2%, while three journals of AEA, namely *American Economic Review*, *Journal of Political Economy* and *Journal of Economic Literature*, all together have a share of 32.6%. Although of German origin, *Journal of Institutional and Theoretical Economics* seems to be the exception in this case, whose share is 6.13%.<sup>34</sup> Thirdly, and quite not surprisingly, although they mostly welcome historical studies, three journals listed as being in the heterodox tradition, including the *Journal of Economic Issues* which is sponsored and published by the most important heterodox economics organization in US, namely Association for Evolutionary Economics (AFEE), are represented only by 3 articles, less than 1%. These figures are represented in Figure 4 below.

Figure 4. Authors' Contribution



Last task of this section is to examine patterns of professional affiliations of aforementioned economic historians. As noted above, scholars in consideration in this paper have not only been successful in their research fields, but also have received

<sup>34</sup> It is also interesting that this journal is also exceptional at least in one more way. It is the single journal which carries the word “institutional” in its title, yet listed as a top-ranked journal in most of the rankings.

noteworthy support by both public and private enterprises. One of them, Douglass C. North, has been so successful that he received the Nobel prize in 1993 “for having renewed research in economic history by *applying economic theory and quantitative methods* in order to explain economic and institutional change” (emphasis added).<sup>35</sup> When we look at the general outlay of supporting institutions, we see that National Science Foundation (NSF) is first, with twenty professionally affiliated scholars,<sup>36</sup> more than four-fifths of the total. Since NSF is suggested to have been providing more than half the federal support in economics discipline,<sup>37</sup> these figures are not surprising. Nonetheless, 16 of them have been named as a principal investigator in 70 project proposals, which gave rise to total academic fund-raising of as much as \$9,704,652.

The National Bureau of Economic Research (NBER) comes in second as a supporter. As the nation’s leading nonprofit economic research organization, NBER is suggested to have “provided a foundation for the work of the pioneering American quantitative economic historians and their successors” (Lyons et al, 2008: 45) from its inception in 1920. 8 of 24 scholars in consideration in this paper are professionally affiliated with NBER as research associates, and one of them is a member of its board of directors. Moreover, NBER has supported working papers, chapters or edited books for twenty of these scholars.

Although NFS and NBER provide a remarkable degree of support, they are in no way exceptional. Eight outstanding economists in our sample have been elected as a Fellow to American Academy of Arts & Sciences (AAAS), one of the oldest economic institutions, with a history of over 225 years. The AAAS has been active in shaping not only national but also world politics since its foundation.<sup>38</sup> Moreover, six of the authors are fellows of Econometric Society, which has been celebrated by Gerard Debreu, the Nobel Laureate of the year 1983, and who served as President of the AEA in 1990. As further evidence for the mathematization of economic theory, “from 1969 to 1990, 30 economics Nobel awards were made, and 25 of the laureates are, or were, Econometric Society Fellows”

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<sup>35</sup> See, [http://nobelprize.org/nobel\\_prizes/economics/laureates/1993/index.html](http://nobelprize.org/nobel_prizes/economics/laureates/1993/index.html)

<sup>36</sup> Professional affiliation here means being named either as a awardee, or a reviewer. At least one of the authors was only granted a fellowship.

<sup>37</sup> See, <http://www.nsf.org>.

<sup>38</sup> See, <http://www.amacad.org/>

(1991: 2).<sup>39</sup> Another noteworthy association is Cliometric Society. Two scholars in my sample are now actively in service for Cliometric Society Board of Trustees, and five of them are former trustees.

It is beyond the scope of this study to enumerate all professional affiliations of the economic historians considered, though three more institutions – the World Bank (WB), Guggenheim Memorial Foundation, and the Alfred P. Sloan Foundation -- are worth mentioning. They represent six (past or present) affiliated researchers each. Table 5 summarizes a total of 13 organizations, each of which is represented by at least three or more professional affiliations (i.e., at least 10% out of 24 in my sample).

*Table 5. Professional Affiliations.*

	NBER	NSF	CEPR*	Guggenheim	Sloan	AAAS	Clio
Margaret C. Levenstein	x	x					
Shawn Kantor	x	x			x		x
John Graham Treble	x						
Paul Milgrom	x	x		x	x	X	
Robert Porter	x	x			x	X	
Jean-Laurent Rosenthal	x	x	x	x	x		
Paul David	x	x		x		X	
Barry Eichengreen	x	x	x	x		X	x
Ann M. Carlos	x	x					x
Elizabeth Hoffman	x	x					x
John V. C. Nye		x					
Barry R. Weingast	x	x				X	
Douglass C. North	x	x		x		X	
Karen B. Clay	x	x					
Joel Mokyr	x	x		x		X	x
Simon Johnson	x		x		x		
Chiaki Moriguchi	x	x					
Masahiko Aoki	x						
Douglas A. Irwin	x	x		x			
Deirdre N. McCloskey	x	x		x			x
Maristella Botticini		x	x		X		
Timur Kuran		x		x			
Stephen N. Broadberry	x		x				X
Avner Greif		x				X	

\* Center for Economic Policy in London.

<sup>39</sup> I would like to mention in passing that this ratio has even increased from 1991 to 2008. Since then 32 more economics Nobel awards were made and 29 of them are, or were, Econometric Society (ES) Fellows. It is also surprising to find out that Douglass C. North, the only Nobel laureate in my sample, is not named among ES Fellows.

Table 5 (Cont.)

	Econometric Society	CASBS*	SSHRC**	Hoover	IMF***	WB
Margaret C. Levenstein						x
Shawn Kantor						x
John Graham Treble						
Paul Milgrom	x	X				x
Robert Porter	x					
Jean-Laurent Rosenthal		X				
Paul David	x					
Barry Eichengreen					x	
Ann M. Carlos			x			
Elizabeth Hoffman						
John V. C. Nye				x		
Barry R. Weingast		x		x		
Douglass C. North		x		x		x
Karen B. Clay			x			
Joel Mokyr		x				
Simon Johnson					x	x
Chiaki Moriguchi	x					
Masahiko Aoki	x					
Douglas A. Irwin					x	
Deirdre N. McCloskey						
Maristella Botticini			x			
Timur Kuran						x
Stephen N. Broadberry						
Avner Greif	x	x		x		

\* Center for Advanced Study in the Behavioral Sciences at Stanford University.

\*\* Social Sciences and Humanities Research Council of Canada.

\*\*\* International Monetary Fund.

The overall picture of professional affiliations reveals that, having only two exceptions (Treble and Moriguchi), the 24 leading researchers examined in this paper constitute a representative sample showing that those employ game theoretical approaches have four or more professional affiliations. Their engagement in quantitative economic history and concomitant mathematical and formal skills seem to have helped them to be supported by these institutions, since most of the aforementioned institutions demand empirical evidence for successful research proposals. Moreover, evidence derived from professional affiliations with such institutions as World Bank, IMF or the Hoover Institution further suggests that almost half of them (11 out of 24; 45% of total) have actively contributed to the reproduction of neoliberal ideology, and the “art of paradigm maintenance” (Broad, 2006). Lastly, although this evidence does not appear in Table 5 since it examines single cases, ethnicity also seems to play a part in determining

professional affiliations. Take for example Aoki, who has served as President to both Japanese Economic Association and Research Institute of Economy, Trade and Industry in Japan, or Botticini, who is both a Fellow of Collegio Carlo Alberto in Moncalieri and a member of Israel Science Foundation.

### **Conclusion.**

In this paper, I aimed at analyzing both knowledge production processes and hierarchical dynamics within the economics discipline. I placed a special emphasis on locating the newly emerging field of game theoretical approaches to economic history analysis in the discipline's settled structure. In order to do this, in the first section, I tried to show intellectual connections between neoinstitutional economics/new economic history and original institutional economics and its corrections to mainstream tradition in economics. Thus I tried to trace how the intellectual history "evolved". In the second section, I first aimed to discover general employment and publishing trends in the economics discipline. Then I examined employment, publishing and financial supporting patterns of 24 selected game theoretical economic historians. The main conclusion of this paper can be summarized as follows. Successful employment, publishing and financial supporting patterns of the 24 selected scholars are in opposition to the general trends experienced by economic historians within the discipline. Thus I tried to show that this is mainly due their unique achievement both to embrace the intellectual developments in the discipline on one hand, and their spectacular usage of mathematical and quantitative methods, in line with the authoritative dominance of the mainstream tradition, on the other.

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