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Alchian, Buchanan, and Coase: A Neglected Branch of Chicago Price Theory

Abstract: This paper suggests that there exists a neglected third branch of Chicago price theory, which includes Armen Alchian (1914–2013), James Buchanan (1919–2013), and Ronald Coase (1910–2013). While this branch shares characteristics that are common to the other branches of Chicago price theory, there are two fundamental contributions of this branch that distinguishes it from the others in the Chicago price theory tradition. The first contribution is the application of the logic of choice in discovering alternative institutional arrangements. That is, individuals will engage in exchange not only within a given institutional arrangement, but will also engage in exchange behavior to foster more preferable institutional arrangements that further the particular goals of the exchanging parties. The second contribution is the notion that the provision of markets is an entrepreneurial activity. We argue that this Alchian, Buchanan, Coase approach to price theory provides not only a bridge between the "Old" Chicago School and the "New" Chicago School but also an alternative development of the Chicago School. Our paper, while building on the joint insights of Alchian, Buchanan, and Coase, is focused on Coase's development of this approach, and clarifying his contribution. By drawing the economist's attention to transactions costs, Coase more than any other economist of the twentieth century brought institutional analysis to the foreground by stressing the role they play in ameliorating or exacerbating conflicts in a world of positive transactions costs.

Keywords: Armen Alchian, James Buchanan, Ronald Coase, Chicago price theory, comparative institutional analysis
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> I shall conclude by recalling a conversation with Professor Ronald H. Coase when he and I were colleagues at the University of Virginia, where Frank Knight had visited for an extended period. Coase and I were walking along Mr. Jefferson's Law, and we have been discussing famous economists. Ronald said something like the following to me. "I can think of almost any famous economist, like _____, _____, or _____," naming the obvious world-renowned figures in our discipline as evaluated from the perspective of the early 1960s, "and I can sort of imagine myself in their position of fame with a bit of luck, persistence and effort. But I simply cannot imagine myself to be like Frank Knight. I guess that amounts to saying that Knight is a genius." I have always remembered that conversation because Coase put so well what so many of us feel when we think of the professor from who we learned so much.
>
> – James M. Buchanan (1982, xiii–xiv)

> His [Armen Alchian] writing is distinguished by his ability to disentangle the essential from the trivial, and above all, by his skill in showing how the same basic economic forces are at work in a wide variety of apparently completely different social settings. And if the operation of these forces seems sometimes to produce satisfactory and sometimes unsatisfactory results, this does not come about because the individuals concerned are better or worse but because the environment within which they make their choices is not the same.
>
> – Ronald Coase (1977, 9–10)

1 Introduction

In his magnum opus *Human Action*, Ludwig von Mises stated that "economics is a living thing – and to live implies both imperfection and change" (1949 [2007]: 7). Economics, like any living body of thought, is like a tree: it has roots; a trunk as its core; and it develops branches as it grows and changes. The Chicago price theory tradition has a rich history in economic thought, one that can be traced to the first decades of the twentieth century. "Rooted" in the approach of Alfred Marshall's *Principles of Economics*, this tradition has regarded economics as "an engine of analysis" to explain real-world phenomena. The distinctive "core" that characterizes the "Chicago School" is the utilization of price theory as "a tool to solve problems rather than a set of problems to be solved" (Daniel et al., 2013: xiii).

Moreover, economists have recognized two distinctive "branches" that have grown out of Chicago price theory. One branch has been associated with its "founding" generation, namely Frank Knight, Jacob Viner, and Henry Simons. The Knight/Viner/Simons[1] branch of Chicago price theory stressed a paradigm of

1 Another leading figure of the Chicago School of economics who deserves mention is Aaron Director, Founder of the *Journal of Law and Economics* in 1958. Director taught economics in the Chicago Law School between 1946 and 1965. As colleagues of Henry Simons and later Ronald

exchange and the institutions within exchange takes place grounded in the pure logic of choice. The other branch includes Milton Friedman,[2] George Stigler, and Gary Becker (Miller, 1962; Buchanan, 2010). The Friedman/Stigler/Becker branch of Chicago price theory was based on competitive equilibrium and the extension of the rational choice model to explanations of all human behavior.[3] The usual examination of Chicago price theory focuses on the link between the "Old" Chicago School of Knight/Viner/Simons and the "New" Chicago School of Friedman/Stigler/Becker.

In this paper, we want to suggest that there exists a neglected third branch of Chicago price theory, which includes Armen Alchian, James Buchanan, and Ronald Coase as its members. However, our argument will concentrate more so on the contributions of Ronald Coase as its leading member and founder of other branches in economics, such as New Institutional Economics, Law and Economics, and the economics of property rights. While this branch shares characteristics that are common to the other two branches of Chicago price theory, there are two fundamental aspects of Coases's contributions to economics that characterize this third branch. The first contribution is the application of the logic of choice to the parameterization of alternative institutional arrangements. That is, individuals will

Coase in the law school, Director's intellectual influence was in pioneering the application of price theory to legal reasoning and antitrust in particular. However, our focus is mainly on the examination of the writings of the figures discussed in this paper. Director's influence was more so an oral tradition in the classroom. (See Kitch, 1983)

2 We have argued elsewhere that Friedman's position shifts noticeably between 1960 and 1980, suggesting that he is perhaps the middle-ground figure between these two branches. In *Capitalism and Freedom* (1962), Friedman bases his argument for the efficiency of the market on the model of perfect competition. By the time he writes *Free to Choose* (1980), he emphasized more the institutional context of a dynamic and entrepreneurial market where the gains from trade and the gains from innovation are forever being sought and adjusted by individuals. See Boettke and Candela. "Milton Friedman, James Buchanan, and Constitutional Political Economy" in Robert A. Cord and Daniel Hammond, eds. *Milton Friedman: Contributions to Economics and Public Policy*, forthcoming.

3 Buchanan, for example, argues that the reemergence of *homo economicus* as central to the modeling strategy of modern economics was a retrogression in thought. While there is little doubt that the human actor must be the center stage in any serious analysis (methodological individualism), nor that what is called *homo economicus* exists in every man, the extension of that model to all walks of life is a simplistic and wrongheaded usage of economics. One of Knight's most persistent themes throughout his body of work, Buchanan explains, is that alongside of economic man there exists many other types of men – the romantic fool, the competition loving sportsman, the prejudiced ignoramus, and the aspirational man seeking betterment. Rational maximizing along the lines of economic interest does not by any means exhaust the range of human purposes and goals.

engage in exchange not only within a given institutional arrangement, but will also engage in exchange behavior to foster more preferable institutional arrangements that further the particular goals of the exchanging parties. The second contribution is the notion that "the provision of markets is an entrepreneurial activity" (Coase, 1988: 8).

The paper will proceed as follows. Section 2 provides an overview of the transition of Chicago price theory from the Knight/Viner/Simons branch in the 1920s and 1930s to the Friedman/Stigler/Becker branch from the 1940s to 1970s. Section 3 analyzes the contributions of Coase's work from his article "The Nature of the Firm" (1937) to *How China Became Capitalist* (2013). From the perspective of a third branch of Chicago price theory, along with Buchanan and Alchian, Coase developed what we regard as a genuine institutional economics, one that emphasizes the exchange paradigm of the Knight/Viner/Simons branch, but applied more broadly to the "institutional structure of production" (Coase, 1992) to derive the efficiency claims of the market economy stressed by the Friedman/Stigler/Becker branch. Section 4 draws on the empirical research of Coase to illustrate how entrepreneurial individuals, specializing in the discovery of relevant institutional knowledge, have coped with collective action problems, particularly in transition economies. Section 5 concludes.

2 From Knight/Viner/Simons to Friedman/Stigler/Becker

In the wake of the financial crisis, the late Nobel Laureate James Buchanan drew a distinction between the "Old Chicago School" and the "New Chicago School" to emphasize differences in thinking and the evolution of the Chicago School over time (Buchanan, 2010). What has united Chicago Price theory, both in the old and new schools of thinking, is the analytic presupposition that grounds rational economic behavior, namely the logic of choice. In any situation, given the omnipresence of scarcity, individuals will do their best to employ scarce means for the fulfillment of a particular end or purpose. The end result of such a competitive process will be the achievement of the conditions of Pareto-optimality, such that in equilibrium no individual can be made better off without making someone else worse off. Chicago price theory is deductively grounded on this rational choice postulate, that individuals choose scarce means consistent with their ends, and therefore cannot be tested directly since empirical evidence itself is theory-laden (Reder, 1982: 12).

What has differentiated Chicago price theory from the old and new schools of thinking was the degree to which equilibrium analysis dominated price theory. In the Old Chicago School of Knight, Viner, and Simons, the pure logic of rational choice was a necessary, though not a sufficient condition of price theory. What was the sufficient condition for price theory in Old Chicago School thinking was the *institutionally contingent* logic of choice. The presence of uncertainty renders the study of the market economy not as an exercise of constrained optimization, but as a study of exchange and the institutional framework from which the rational choice postulate is derived. The conditions of equilibrium, where all the gains from trade and innovation are exhausted, are not presumed to fully hold, but only stressed as a "first approximation" (Knight, 1921[2006]: 9) of a perfectively competitive market, employed as a pedagogical construct to be contrasted with real-world market institutions. What was stressed by Knight, Viner, and Simons were the institutional conditions within which price adjustments tend toward the emergence of equilibrium. Following his mentor Frank Knight (1921 [2006]: 9), Simons articulately summarizes this emphasis in the syllabus of his course in price theory at the University of Chicago:

> Traditional price theory consists primarily in analysis of the pricing process under a free-enterprise economy – under a system characterized by private property, free contract, and free exchange. Assuming given underlying conditions (given conditions, broadly, as to tastes, technology, resources, and ownership), it attempts to show how consumption and production are controlled through the pricing process and, above all, to describe (a) the arrangements under which the system will be in equilibrium and (b) how departure from the equilibrium arrangements will set in motion forces to restore equilibrium. *The central conception of price theory is that of an equilibrium adjustment with respect to relative prices and relative production.* (Simons: 6, emphasis added)

Simons is stressing the continuous agitation of market forces in response to changing circumstances that work to coordinate the exchange and production activities of diverse human beings. Relative prices work to guide the accommodating adjustments to bring about the new equilibrium. The analytical focus is not on the state of affairs after economic forces have done the job, but on economic forces *at work* as they bring about the necessary adjustments for complex coordination of production plans with consumption demands. During the 1930s and 1940s, with the further development of formal economic analysis there began a "flight from reality" (Boettke, 1997) not only in terms of mathematical sophistication in the presentation but also in defining economic phenomena in terms of general competitive equilibrium. Rather than regarding the conditions of equilibrium as a "first approximation" as in the Old Chicago

School, the new school of Friedman, Stigler, and Becker began to use equilibrium as a *description* of reality (Boettke, 1997: 23). By extending the pure logic of choice to closed-form solutions, real-world markets act "as if" they were in competitive equilibrium, purging the analysis from institutional derivations of the logic of choice. By collapsing the gap between economic models and economic reality, the New Chicago School conflated the pure logic of choice as its tight prior with the existence of equilibrium as the explicit core assumption of their analysis of economic phenomena. In its purest form, the New Chicago School's conflation of the axiom of rational choice with equilibrium analysis not only sacrifices the heuristic value of equilibrium analysis, but it also lends itself to "efficiency always" explanations of economic reality. The exclusive focus on the efficiency of competitive markets and the government's ability, even if limited, to fix inefficiencies results in a logical trap, one which the market economy idealized in terms of efficiency is cut off from institutional reform. George Stigler best articulates this assumption and its implications for public policy:

> Every durable social institution or practice is efficient, or it would not persist over time. New and experimental institutions or practices will rise to challenge the existing systems. Often the new challenges will prove to be inefficient or even counterproductive, but occasionally they will succeed in replacing the older system. Tested institutions and practices found wanting will not survive in a world of rational people. To believe the opposite is to assume that the goals are not desirable. (Stigler, 1992: 459)

At first glance, the conclusions of such assumptions were analogous to the *laissez-faire* position of the Old Chicago School.[4] However, the implications of such assumptions squeeze out theorizing about the institutional conditions in which efficient outcomes emerge *ex post* by assuming *ex ante* that markets are always efficient. Moreover, the policy implications of such a theoretical construct also must temper the reformist zeal of any economist. If markets are always and everywhere efficient, then the persistence of presumed inefficiencies of a particular economic policy "stems from the fact that more than narrow efficiency has been involved in almost every case – that inexplicit or incomprehensible goals were served by these policies and served tolerably efficiently"

4 Warren Samuels (2009: xxi) argued that the Chicago tradition is one defined by the search for a suitable propaganda for economic freedom. But, Samuels argues, the Old tradition was more subtle and sophisticated in its examination of "the market plus the framework", and that the New tradition was more policy-oriented and polemic. Academia for them, Samuels states, was a preacher's paradise – an obviously direct jab at Stigler's stated position concerning the economic scientist. What matters for our purposes, though, is Samuels recognition of this shift from a concern with the framework to the focus on policy within the existing framework.

(Stigler, 1982: 10). Therefore, it is outside the scope of positive economics to suggest policy changes because the presumption of equilibrium under any economy policy suggests all the gains from trade will be completely exhausted. To suggest otherwise not only violates the assumptions outlined by Becker but suggests the presence of intertemporal change, uncertainty, and entrepreneurial learning by individuals to discover more efficient opportunities, each of which are ruled out by the properties of equilibrium.

Our characterization of the New Chicago School under Friedman, Stigler, and Becker is by no means to be interpreted as a disparagement. This particular approach to the Chicago price theory tradition, as characterized by Becker, based on "the combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly, form the heart of the economic approach" (Becker, 1976: 5) and has certainly proven its explanatory power, namely through Becker's own work on discrimination (1957), crime (1968), human capital (1975), and the economics of the family (Becker and Gregg Lewis, 1973; Becker, 1973; Becker1974).[5]

However much this Chicago "tight prior" imposes a logical discipline in explaining human behavior, its full extension in terms of equilibrium analysis, we argue, crowds out inquiry into the diversity of institutions that address human imperfection, which is the analytic precondition not only for institutional problems emerging from social conflict but also for opportunities to craft institutional solutions that foster social cooperation. The use of this "tight prior" as a description of reality suggests that once the rules of the game are established, little can be done to reform the behavior of the economic and political actors playing the game. Therefore, the presence of "market failures" cannot be explained in terms of inefficient patterns of interaction among individuals

5 The practice of "economic imperialism", of applying price theory to areas outside the economy, is another distinguishing hallmark of the New Chicago School that distinguishes it from Alchian, Buchanan, and Coase. Not only did Alchian and Coase in particular strive to develop and enrich economics itself, but also Buchanan was pursuing a broader research program in economics of the Knightian tradition, which by the 1970s was no longer considered within the scope of economics proper. To further elaborate on this point, Amartya Sen states the following in an interview with Richard Swedberg: "I would not identify the writings of someone like James Buchanan with that of Becker because I think Buchanan is very impressive in terms of the breadth of his interest. In my judgement he has done more than most to introduce ethics, legal political thinking, and indeed social thinking into economics" (Swedberg, 1990: 263). Sen goes on further to say that "what Becker actually has done is to take a very limited set of tools that economists use and then apply these to other subjects. The thing about this 'economic imperialism,' as it is sometimes called, is not that these tools don't apply very well outside economics. The main trouble is that they don't apply very well inside economics either!"(Swedberg, 1990: 263–264).

within a given set of institutional arrangements. Any notion of economic reform must be facilitated by changes in the institutional arrangements within which more efficient patterns of human interaction can be derived (Boettke and Candela, forthcoming). It is this focus on the derivation of the institutional framework that will be emphasized in the works of Armen Alchian, James Buchanan, and most notably Ronald Coase.

3 A genuine institutional economics: Alchian/Buchanan/Coase

Just as the Old Chicago School was evolving into New Chicago School during the 1930s and 1940s, a new generation of economists outside of the University of Chicago were fostering this alternative branch of Chicago price theory, one that would result in property rights economics, law and economics, public choice economics, and market process economics. The consilience of these research programs resulted in a new understanding of political economy in both its positive analysis and its normative thrust. Understanding this approach is perhaps best stated by James Buchanan:

> If human interaction is limited to voluntary exchange conceived in its broadest sense, a theory of institutional structure can be derived, yielding something closely akin to the standard model of competitive order as the end or equilibrium product... Using nothing more than his standard tools, the economist can predict, first, the emergence of this structure, and, secondly, the characteristics of the outcomes that such a structure will tend to produce. Only after this stage is reached can the economist begin to talk about the relationship between competition as an organizational structure, and efficiency. (Buchanan, 1968 [1999]: 5)

Just like the Old Chicago School under the influence of Knight, this alternative approach to price theory and economic analysis in more general relaxes the assumptions of *homo economicus* and the notion of efficiency properties to understand a wider range of purposive human action based on the exchange of goods and services. But the subtle difference between the New Chicago School and this alternative approach finds its origins in the extension of this logic of choice to the rules of the game itself. As Buchanan (1968 [1999]: 5) put it again: "The standard procedure of assuming competitive order when this seems convenient is not acceptable." Instead, a "thorough analysis should include an examination of the institutional structure itself..." Economists and political economists must not be satisfied with treating the framework as given and

limiting their analysis to the logic of choice pursued within that framework. The intellectual task "includes the derivation of the institutional order itself from the set of elementary behavioral hypotheses with which he commences." "In this manner," Buchanan concludes, "*genuine institutional economics becomes a significant and important part of fundamental economy theory*." (emphasis added)

To Alchian, Buchanan, and Coase the purpose of extending the logic of choice is not to understand human behavior in terms of equilibrium conditions, but to understand (1) how human behavior manifests itself by analyzing the parametric changes in diverse institutional arrangements and (2) that "the provision of markets is an entrepreneurial activity" (Coase, 1988: 8). It is through the pursuit of the logic of choice in an uncertain and changing environment that individuals discover the *institutional* means consistent with their goals, that "we find that in the relatively short history of man, he has already devised, tested, discarded, and enormous variety of allocations and sharing of property rights" (Alchian, 1961[2006]: 33). Alchian, Buchanan, and Coase all took institutions out from underneath the cover of the given background to analyze not only the evolution and allocation of alternative institutional arrangements but also how such institutions will have different consequences on the pattern of exchange and production. By drawing the economist's attention to transactions costs, in particular, it was Coase more than any other economist of the twentieth century that brought institutional analysis to the foreground by stressing the role that institutions play in ameliorating or exacerbating conflicts in a world of positive transactions costs.

To illustrate the interconnections between Alchian, Buchanan, and Coase, we draw from focal points in their work that stress these two underlying themes of this neglected branch of Chicago price theory. The point of this section will be to show the interconnections by examining arguments in three papers, though not in chronological order: Alchian's "Some Economics of Property Rights" (1965); Buchanan's "What Should Economist's Do?" (1964); and Coase's "The Lighthouse in Economics" (1974). We will try to highlight the unifying theme in these papers that produces what we are calling a Coasean-inspired comparative historical political economy, emphasizing exchange and the institutions within exchange takes place. In each of these papers, what constitutes economic analysis is not only the pure logic of choice but also a thorough institutional analysis. It is important to remember that if economic theory is born out of two observations – (a) that individuals strive to do the best they can given their situation (pursuit of self-interest rightly understood) and (b) that the interactions of individuals within the marketplace produces a socially desirable outcome, the theoretical puzzle in economics is how to explain the one in light of the other (Paris gets fed). The classical political economist and the early neoclassical

economists (e.g. the Old Chicago School) solved this puzzle via comparative institutional analysis. The invisible hand theorem was derived from the pure logic of choice by way of an examination of the institutional analysis of private property, freedom of contract, and profit and loss accounting. Critical to understanding the complexity of the social world is that outside of that institutional framework there was no guarantee by Adam Smith to Frank Knight, that individuals pursuing their private interest would generate anything even closely approximating the public interest. It is the framework that must be examined, not necessarily the details of behavioral assumptions concerning cognitive capacity.

In his economic analysis of property rights, Alchian argued that the fundamental basis from which emerge the innumerable variety of private property arrangements is their exchangeability (1965 [2006]: 60). Starting from the pure logic of choice, Alchian claims that since individuals "seek to increase their utility and that wealth is a source of utility, we cannot expect people to change their goals and desires. Instead, we rely upon changes in the rewards – structure to redirect their activities as they seek to increase their utility" (1965 [2006]: 59). Alchian's analysis of property rights is the institutional component of Adam Smith's notion that the division of labor is limited by the extent of the market (1776 [1981]: 31). The exchangeability of property rights allows individuals to capture the gains from trade and innovation by concentrating "their ownership in those areas in which they believe they have a comparative advantage if they want to increase their wealth." Individuals in possession of tacit and dispersed knowledge of particular time and place (Hayek, 1945: 521) are able to specialize in applying such knowledge through the acquisition of property rights over goods and services that further their goals (1965 [2006]: 63).

Among the exchanges that individuals engage in to further their goals and self-interest includes not only of goods and services but also the provision of alternative institutional arrangements over such goods and services, including club goods (Buchanan, 1965) such as stock exchanges (Coase, 1988; see also Stringham, 2002), firms (Coase, 1937), and lighthouses (Coase, 1974). In "The Lighthouse in Economics," Coase argued that economists should move away from the "blackboard economics" of equilibrium analysis and look out the window to observe how individuals foster institutional arrangements to overcome so-called market failures, namely in the provision of lighthouses, by their lure of pure profit opportunities. As Coase points out, economists such as John Stuart Mill and Paul Samuelson argue that lighthouses represent a classic example of a public good, one in which free-riding and the inability to collect usage fees precludes exclusion of the service it provides. Therefore, they

conclude that the provision of lighthouses through general taxation is a prerogative of the government, since left to unhampered market lighthouses will be underprovided. However, as Coase shows, the history of lighthouses in Great Britain prior to the nineteenth century demonstrates:

> The lighthouses were built, operated, financed, and owned by private individuals, who could sell a lighthouse or dispose of it by bequest. The role of the government was limited to the establishment and enforcement of property rights in the lighthouse. The charges were collected by the ports by agents for the lighthouses. The problem of enforcement was no different for them than for other suppliers of goods and services to the ship owner. The property rights were unusual only in that they stipulated the price that could be charged. (Coase, 1974: 375)

From the perspective of perfectly competitive equilibrium, this argument for government provision of lighthouses is based on the assumption that the efficient price of a good produced at zero marginal cost is always zero. However, this "reasoning generally fails to take account of the fact that the provision of a market (for the side effect) is itself a valuable and costly service" (Demsetz, 1964: 13). If there were zero transactions costs in pricing the services of lighthouses, as Coase illuminated in "The Problem of Social Cost" (1960), government intervention would be both unnecessary and redundant. But when transactions costs are positive, the zero pricing of lighthouse services may result in inefficiency.

Coase argued that "it makes little sense for economists to discuss the process of exchange without specifying the institutional setting within which exchange takes place, since this affects the incentives to produce and the costs of transacting" (Coase, 1992: 718). By observing the entrepreneurial actions of individuals in a positive transactions cost world, the manner in which such individuals align their self-interest depends on the particular institutional framework. In the case of the lighthouse, owners of different lighthouses efficiently recoup the costs of providing and maintaining lighthouses by engaging in those exchanges that are least costly to meter and monitor. Coase gives examples of how lighthouse owners charge ships for their service based on their country of origin, freight tonnage, and type of ship:

> The dues are so much per net ton payable per voyage for all vessels arriving at, or departing from ports in Britain. In the case of "Home Trade" ships, there is no further liability for light dues after the first 10 voyages in a year, and in the case of "Foreign-going" ships, there is no further liability after 6 voyages... Some categories of ship pay a lower rate per net ton: sailing vessels of more than 100 tons and cruise ships. Tugs and pleasure yachts make annual payment rather than a payment per voyage. (Coase, 1974: 361)

The traditional view of lighthouses as public goods has been "plucked out of the air to serve as an illustration" (Coase, 1974: 375) of an instance of market failure, but this is due to the framing of the narrative of lighthouses in terms of competitive equilibrium, rather than observing the process of contracting to avoid transactions costs in a real-world setting. The analytical focus on the efficient allocation of resources had resulted in economists turning a blind eye to the very process by which that efficient allocation could reasonably be obtained and the specific institutional environment required for the process to emerge in that direction. It is this focus on "the exchange paradigm" rather than the "allocation paradigm" that Buchanan harps on in "What Should Economists Do?" (1964).

Buchanan argued that it is too intellectually easy to slide from the analytical point about individuals realizing the mutually beneficial gains from trade, and the constant agitation in the market until all those gains from trade are exhausted, to the idea that one can engineer the optimal solution through correct policy designs. This is not only a problem confronted by models of socialist planning, but is also endemic in public economic models concerning tax and subsidies to counter market failures and the regulation of economic affairs. Allocative efficiency is a by-product of an economic process within a specific institutional setting, not a defining goal of the system. If the economic problem is conceived exclusively as one of allocation, Buchanan warned, then economic study becomes little more than an exercise in "applied maximization of a relatively simple computational sort" (1964: 216). If this is all there is to economics, the discipline would best be left to applied mathematicians.

The advances Buchanan witnessed in economics during the 1940s and 1950s were in fact primarily improvements in "computing techniques, in the mathematics of social engineering" (1964: 216). In writing "What Should Economists Do?", Buchanan was trying to insist that these contributions be put in the proper perspective. These developments can be recognized as improvements in the applied mathematics of managerial science, but they are not, and should not be seen as, contributions to economics properly understood. Buchanan argued that "Economists 'should' concentrate their attention on a particular form of human activity," namely exchange behavior, "and upon the various institutional arrangements that arise as a result of this form of activity" (1964: 213–214). Furthermore, the consequences of imposing such entrepreneurial activity in terms of competitive equilibrium imposes "the condition that no participant in the economic process can independently influence the outcome of this process," such that "all 'social' content is squeezed out of individual behavior in market organization" (1964: 218).

The most serious problem with the formalism and emphasis on equilibrium analysis that emerged in economics after the 1940s was not that it was unrealistic, as Buchanan is quick to admit all models are abstractions from reality. The scientific question is matching the level of abstraction with the research purpose such that we get models of appropriate abstraction. The textbook consensus by 1960, however, had resulted in a flawed model of the world because of "its conversion of individual choice behavior from a social-institutional context to a physical-computational one" (1964: 218). For Buchanan, "a market *becomes* competitive, and competitive rules *come to be* established as institutions emerge to place limits on individual behavior patterns. It is this *becoming* process, brought about by the continuous pressure of human behavior in exchange, that is the central part of our discipline, if we have one, not the dry-rot of postulated perfection" (218, emphasis in original). Neither maximizing behavior nor general competitive equilibrium is to Buchanan the defining characteristic of market analysis but instead the "continual evolution of the exchange process" that emerges from the Smithian propensity to truck, barter, and exchange, from which the rules of the game are derived:

> The market is "the institutional embodiment of the voluntary exchange processes that are entered into by individuals in their several capacities. That is all there is to it. Individuals are observed to cooperate with one another, to reach agreements, to trade. The network of relationships that emerges or evolves out of this trading process, the institutional framework, is called 'the market'". (Buchanan, 1964: 219)

Fundamentally, economics is about exchange and the institutions within which exchange takes place. Individuals attracted to economics, however, are often so because they not only want to understand the world but would like to change it for the better. The scientific demand for positive analysis is apparently at odds with the normative impulse that attracts individuals to advanced study in the discipline of economics and political economy. However, by parameterizing the rules of the game and observing exchange behavior of such rules, economists can then engage in positive comparative institutional analysis that is consistent with their reformist zeal.

4 Coase and comparative institutional analysis

In an interview with his co-author, Ning Wang, Coase said that his career has been one in pursuit of "good economics" and a rejection of "bad economics," or as he dubbed "blackboard economics." For Coase, blackboard economics studies "the imaginary world that exists only in the minds of economists, for example, the

zero-transactions cost world" (Wang, 2014: 101; see also Coase, 1992: 714). Coase's comments are not an exercise of intellectual hubris, but an appeal to economists to engage in institutional analysis that governs the patterns of exchange behavior that emerge in the avoidance of transactions costs by individuals.

Coase's own characterization of his contributions to economics has been to explicate the principal theme of Adam Smith's *The Wealth of Nations*, which is that government regulation or central planning are not necessary for social order to emerge. "The main activity of economists," Coase argues, "has been to fill in the gaps in Adam Smith's system, to correct his errors, and to make his analysis vastly more correct" (1992: 713). Instead, economists have focused on the economic problem as one of determining prices and the distribution of income from an equilibrium perspective. However, this neoclassical paradigm says little about real-world institutions, making it a poor theoretical framework for understanding how economic knowledge is coordinated through an emergent price system and therefore inapplicable to comparative institutional analysis and economic reform (Murrell, 1991: 62). Writing in the wake of the collapse of Communism in Eastern Europe, Coase wrote:

> The value of including such institutional factors in the corpus of mainstream economics is made clear by recent events in Eastern Europe. These ex-communist countries are advised to move to a market economy, and their leaders wish to do so, but without the appropriate institutions no market economy of any significance is possible. If we knew more about our own economy, we would be in a better position to advise them. (1992: 714)

Coase's fascination with knowing more about the market economy began in his formative years at the London School of Economics in the 1930s under Arnold Plant. The ideas behind Coase's examination of the nature of the firm were born out of contemplation of Plant's discussion of the socialist calculation controversy *and* his everyday observations of the organization of business activities during a study trip to the United States (Coase, 1992: 715). That is, if market prices are necessary for rational economic calculation of the means of production, then why are there islands of planning, namely firms, in a sea of market prices? The answer that Coase produced in "The Nature of the Firm" was that firms emerge to avoid the transactions costs of using spot markets. Under this paradigm, the notion of spot prices in stock and commodity exchanges does not conform to perfect competition, since it requires institutional arrangements that frame the terms of exchange, just as in the firm. For Coase, "it makes little sense to discuss the process of exchange without specifying the institutional setting within which exchange takes place, since this affects the incentives to produce and the costs of transacting" (Coase, 1992: 718).

The consistent application of the logic of choice that Coase utilized to his analysis of the firm not only extended throughout his work but also laid the

groundwork for a "robust political economy" (Boettke and Leeson, 2004). It was not "novel" for Coase to argue for the utilization of private property, free pricing, and contractual exchange to generate an efficient allocation of radio frequencies. However, it was not efficient market outcomes that concerned Coase per se. Rather, it was the institutional robustness of the market economy, its capability of providing both the incentives and knowledge to generate efficient outcomes in the face of deviations from ideal assumptions about individual motivation and information, which Coase emphasized. As he states in "The Federal Communications Commission" (1959):

> This "novel theory" (novel with Adam Smith) is, of course, that the allocation of resources should be determined by the forces of the market rather than as a result of government decisions. Quite apart from the malallocations which are the result of political pressures, an administrative agency which attempts to perform the function normally carried out by the pricing mechanism operates under two handicaps. First of all, it lacks the precise monetary measure of benefit and cost provided by the market. Second, it cannot, by the nature of things, be in possession of the relevant information possessed by the managers of every business which uses or might use radio frequencies, to say nothing of the preferences of the consumers for the various goods and services in the production of which radio frequencies could be used. (Coase, 1959: 18)

The Coase Theorem as laid out in "The Problem of Social Cost" (1960) emerged out of his study of the Federal Communications Commission, and it was written and published while Coase taught at the University of Virginia, where he was a colleague of James Buchanan at The Thomas Jefferson Center for Studies in Political Economy. Stating why the Thomas Jefferson Center at the University of Virginia was established, Buchanan writes:

> The Thomas Jefferson Center strives to carry on the honorable tradition of "political economy" – the study of what makes for a "good society." Political economists stress the technical economic principles in order to assess alternative arrangements for promoting peaceful cooperation and productive specialization among free men. (1958: 5)

The reason we reproduce this quote here is because what came to be known as the Coase Theorem can only be properly understood within the intellectual context that "The Problem of Social Cost" was written. The "Coase Theorem" as it is defined today was formulated by George Stigler in the third edition of his textbook, *The Theory of Price* (1966), and has henceforth been defined in terms of equilibrium analysis associated with the New Chicago School.[6] The point that

6 It is important to note that in Buchanan's "Chicago School Thinking: Old and New," he identifies Ronald Coase with the New Chicago School of Friedman, Stigler, and Becker. His interpretation there was based on the Coase Theorem as defined by George Stigler, rather than

has become neglected, and hence the case for a third branch of Chicago price theory, was that Coase was trying to move economists away from thinking in terms of a zero-transactions costs world and stress the role that institutions play in ameliorating or exacerbating conflicts in a world of positive transactions costs and imperfect individuals. The closing paragraph of "The Problem of Social Cost" elaborates on this point of comparative institutional analysis and entrepreneurial nature of institutional change under uncertainty:

> But in choosing between social arrangements within the context of which individual decisions are made, we have to bear in mind that a change in the existing system which will lead to an improvement in some decisions may well lead to a worsening of others. Furthermore we have to take into account the costs involved in operating the various social arrangements (whether it be the working of a market or of a government department), as well as the costs involved in moving to a new system. In devising and choosing between social arrangements we should have regard for the total effect. This, above all, is the change in approach which I am advocating. (Coase, 1960: 44)

How China Became Capitalist, Coase's last book co-authored with Ning Wang, extends this notion of comparative institutional analysis and institutional entrepreneurship to an empirical case of institutional evolution in China in terms of spontaneous order. Their study of China's ongoing transition from a centrally planned economy to market-oriented economy "is the quintessence of what Adam Ferguson called 'the products of human action but not human design'" (Coase and Wang, 2013: 154). On the heels of Mao Zedong's death in 1976, the Chinese Communist Party under Deng Xiaopang began a platform of reforms to avert the economic collapse precipitated by Mao's socialist experiments in central planning and agricultural collectivization.

Coase and Wang argue that China's rapid economic growth resulted not from an overarching economic reform plan designed from the top-down, but from a bottom-up spontaneous interaction of Chinese peasants secretly attempting to farm privately in defiance of government policy. Only after this emergent process of *de facto* privatization of farming began did the government conditionally accept it and later implement it *de jure* as government policy in 1982. Only after the rules of the game had evolved to confer private property rights did Chinese individuals move "from subsistence to exchange" (Bauer, 2000) and

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the Coase Theorem that Coase himself regarded as a "stepping stone on the way to an analysis of the economy with positive transactions costs" (Coase, 1992: 717) and a focus on the institutional setting that emerges in the face of positive transactions costs. Our focus has been on the Coasean-Coase Theorem, not the Stiglerian-Coase Theorem. Buchanan's identification of Coase with the New Chicago School was based on a criticism of the Stiglerian rendition of the Coase Theorem, not a misunderstanding or criticism of the position of Ronald Coase.

begin to capture the large scale gains from trade and innovation that unleashed economic growth. Coase and Wang described the transition process as follows:

> When China became a giant economic laboratory, the forces of competition were able to work their magic. In an experimental process of discovery, resources were directed to their most profitable utilization, institutional arrangements and organizational structures emerged to facilitate collective learning. Tinkering with Mao's legacy on the ground, China, step by step, not without sidesteps or retrogressive movements, found itself transformed into a market economy after thirty years of reforms which had been intended to save socialism. (2013: 156)

The case of China's economic transition illustrates how obstacles and inefficiencies in the property rights structure create profit opportunities for "institutional entrepreneurs" (Li et al. 2006; Boettke and Leeson, 2009) that mutually reinforce the exploit of entrepreneurs within the rules of the game to discover profit opportunities through arbitrage and exchange, unleashing an entrepreneurial discovery process through which the relative scarcities of the means of production are rationally calculated. The comparative static view of economic reform overlooks the dynamic process of learning and crafting of new rules within which the interactions of individuals are manifested as both the source and consequence of various institutional solutions to institutional problems. The role of competition, entrepreneurship, and exchange is to discover among those technologically feasible possibilities, both productive and protective, which best facilitates the mutual coordination of purposive actions of individuals.

5 Conclusions

The implications of the argument put forth have been logical, rather than sociological in nature.[7] Our goal has been to draw the logical interconnections from the Old Chicago School and the New Chicago School to what we regard as the development of a third and neglected branch of Chicago price theory. While the Friedman/Stigler/Becker tradition has been pursued thoroughly, this alternative branch has not been recognized as offering a unique rendering of the Chicago tradition. This third branch is one that transcends the New Chicago School by utilizing the price theoretic tools for the derivation of institutional arrangements emphasized by the Old Chicago School. Recall that Henry Simons' rendition of price theory describes not only the pricing process of a market

7 We would like to thank Richard Wagner for pointing out this distinction to us.

economy but also the institutional arrangements that structure the tendency of relative price movements toward equilibrium.

Coase recognized that the implications of a consistent application of transactions cost analysis would completely change the structure of price theory. Along with Armen Alchian and James Buchanan, Coase recognized not only that institutions matter but also that transactions costs analysis must be incorporated into comparative institutional analysis. Property rights never exist in any economy in a generic or homogenous form. The manner in which property rights are bundled and the transactions costs of unbundling property rights through exchange structure the relative price movements in an economy as well. The cost of exchanging property rights in different societies not only affects the manner in which individuals pursue their goals but will result in the emergence of different patterns of exchange and distributions of goods and services in each society. Alchian, Buchanan, and Coase stressed such exchange behavior over the rules of the game throughout their careers. A genuine institutional economics not only incorporates Chicago price theory but also transcends it by allowing the economist to reconcile their zeal for economic reform with positive political economy by using price theoretic tools to derive institutional solutions to institutional problems in the real world.

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