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Abstract. This paper examines a fundamental issue in the theory of economic organization, the optimal level of market competition. Answers given in, respectively, Neoclassical and New Institutional Economics are identified and critiqued. Both provide skewed market-favoring and “more competition is better than less” conclusions, arising in part from failure to distinguish between market failure and organizational success. After this critique, the paper develops an alternative institutional theory of economic organization, drawing principally on ideas of Walton Hamilton and John Commons, which shows that the optimal level of competition occurs at an intermediate level in the competition/cooperation spectrum (a mixed economy) and varies with five key background factors.

Key Words: competition, cooperation, economic organization, institutional economics, transaction cost. (JEL: D230, D410, P51, B250)

“Our subject matter is the transactions of human beings in producing, acquiring, and rationing wealth by cooperation, conflict, and the rules of the game.” (J.R. Commons, *Institutional Economics*, 1934: 121)

“Perfect competition is not only impossible but inferior, and has no title to being set up as a model of ideal efficiency.” (J. Schumpeter, *Capitalism, Socialism, and Democracy*, 1943: 106)

The subject of this paper is rooted in a theoretical dualism identified by Walton Hamilton (1918) in his field-defining paper, “The Institutional Approach to Economic Theory.” He distinguishes two types of economic theory: value theory and institutional theory.

Hamilton states that value theory (neoclassical price theory) is “derived from the classical doctrine of the organization of industry upon the principle of free competition” (p. 311). Since free competition operates in an “immutable world of natural theory,” its “explanatory terms are not matters subject to control” and the theory “has no concern

with the organization of that market, the nature of the transactions which occur there” (p. 313). Also, defense of the status quo and laissez faire “still lingers implicitly” (ibid.).

Institutional economics, on the other hand, focuses on “the arrangements which determine the nature of our economic system” (p. 310) and in this respect follows Adam Smith who made political economy the study of “the relationship of economic organization to national wealth” (p. 312). The organization and performance of the economy, and distribution of benefits and costs to individuals, is thus determined by a human-made institutional order composed of “changeable elements of life” which through collective action and control can be engineered “in such a way to satisfy our needs and whims” (p. 313). Since national wealth depends on the system of economic organization, the institutional economist considers not only markets but also “the machine technique,... the legal system,... the rise of a complicated business system,... the concentration of direction in the hands of an industrial hierarchy,... the wage system” (p. 314). This viewpoint calls into question the sanctity of the status quo and principle of laissez-faire since they reify and protect existing power relationships; thus the institutional economist investigates the social arrangements that “make incomes what they are” (p. 314).

Hamilton concludes that the fundamental difference between value economics and institutional economics is their “different conceptions of the nature of the economic order” with one operating automatically through competition and price with institutions frozen into the background and the other operating through collective-made human decisions to create and alter market and non-market institutions in ways such that production, exchange and distribution yield better economic outcomes. Of the two

theories, Hamilton claims the institutional is the more general because it allows all the elements of economic order to vary and thus contains value theory within it as one economic order made up of a specific combination of elements.

Economists working in the tradition of Hamilton, including fellow pioneers such as Clark, Commons, Mitchell, and Veblen (Rutherford 2011), have considerably developed and elaborated both his critique of neoclassical theory and ideas for an alternative institutional theory (Samuels 1988; Hodgson 2004; Groenewegen, Spithoven, van den Berg 2011). Particularly in the last thirty years, interest in institutions has also much expanded among economists outside the original institutional tradition, including innovative efforts by neoclassical economists to use price theory tools to explain institutions (e.g., Becker 1981; Lazear 2001) and the creation of a new institutional economics by Coase (1992), Williamson (1985), and others (Furubotn and Richter 2005).

Despite these worthwhile developments, the thesis of this paper is that the theoretical dualism identified by Hamilton remains largely in place. In particular, it is asserted that the core of neoclassical economics remains much as Hamilton described it, which is to say a theory anchored on market exchange and competition, wedded to the invisible hand notion, and containing an implicit defense of laissez faire and the status quo (Moudud, Bina, and Mason 2013, and chapters therein). Further, when critically examined the theory of new institutional economics, particularly as represented in the work of Williamson and followers, is with only minor qualifications in the same mold. These arguments are developed and illustrated through the lens of a question fundamental to all schools of economics – what is the optimal (ideal) level of market competition?

As revealed through textual analysis and several simple graphs, neoclassical economics (NE) and new institutional economics (NIE) give the same answer: optimal competition = 100% competition or, rephrased, the ideal economic order = 100% competitive markets. This demonstration is new for the NIE, at least in terms of being explicitly demonstrated; for NE it is a well-known conclusion from the first welfare theorem but I give it a new graphical representation and draw-out certain implications.

A central player in this analysis of optimal competition is Coase and, interestingly, his theoretical ideas on transaction cost and economic organization in certain ways line-up with Hamilton and other original institutionalists but in other ways line-up with their opposites in NE and NIE (Medema 1996). The position developed here is that the answer to the optimal competition question turns critically on the subject of Coase's (1992) Nobel address: "The Institutional Structure of Production." Analysis of the institutional structure of production reveals where and why NE and NIE err in their conclusions on optimal competition. Of equal insight, this analysis discovers two other elements of duality in economic organization heretofore not highlighted. The first is the reciprocal nature of *market failure* and *organizational success* (and related concepts, such as externality and internality); the second is the failure of Coase and NIE followers to apply the key insight from his "Social Cost" article (Coase 1960) – the reciprocal nature of cost and liability in the case of externality-like market failure – to the issue of economic organization developed in his earlier "Nature of the Firm" article (Coase 1937).

Original institutional economics (OIE) is often pejoratively portrayed as offering only criticism of orthodox economics while failing to deliver on the other blade of Hamilton's scissors – development of an alternative institutional theory of the economic

order. A more accurate and balanced evaluation, however, falls closer to the middle. That is, on one side it seems fair to say that the ratio of criticism to theory-building in OIE is greater than one and the field has so far not produced a synthetic account of the economic order. But, on the other side, a person also has to note that many distinctive theoretical ideas have been contributed by both OIE founders (on Veblen, see Knoedler 1995; on Commons, see Dugger 1986; Ramstad 1996; Kemp 2006; on Clark see Rutherford 2011) and contemporary writers (e.g., Munkirs 1985; Schmid 1987; Hodgson 1988; Kaufman 2003; Steiger 2008) and these are mostly ignored in NE and NIE.

The second part of the paper is devoted to advancing a distinctive OIE theory of the economic order. This theory, developed with substantial input from original institutionalists such as Hamilton, Commons, and Clark, identifies the five variables that determine the institutional structure of production of every economy and under what combination of these variables the division of labor is entirely market coordinated (optimal competition = 100%), entirely management coordinated (optimal competition = 0%), or a mix of the two. Not only does this theory give different and more plausible answers than NE and NIE theories but also does so with new insights and greater generality. NE and NIE, for example, are demonstrated to be theoretical subsets of an OIE-based institutional economics.

Optimal Competition in NE and NIE: Literature and Theory Review

At one level the subject of optimal competition is surprisingly absent from the literature. For example, an electronic text search on the phrase “optimal level of competition” in the English language part of the *EconLit* data base yields *zero* citations (as of December

2012). Using “optimal degree of competition” yields three and “optimal competition” yields sixteen. The largest concentration of publications falls under the subject of “competition policy” with a substantial orientation toward European Union economic policy issues; other topic areas include R&D performance, performance of particular industrial sectors (e.g., health care), and economic restructuring in transition economies.

At another level the subject of optimal competition is ubiquitous and represents a core theoretical issue in both NE and NIE. The two paradigms frame the issue differently but, as demonstrated below, gravitate to largely similar conclusions.

Before proceeding, note that the critique of NE and NIE is done with their own tools, logic, and conceptions of competition and efficiency; ideas from OIE are then incorporated in the last section.

Optimal Competition: Neoclassical Economics

Neoclassical economics is a broad and multi-faceted subject; for this discussion emphasis is on the standard body of microeconomic theory. A review of the literature finds the following four propositions are widespread (with supporting quotations):

P1: *competition is good*;

“It is almost an article of faith for economics that competition is a force for ‘good’” (Estrin and Angelucci, 2003: 175).

P2: *more competition is better than less*;

“[N]eoclassical price theory ... assumes that an economy characterized by more rather than less competition yields superior economic performance” (Lazonick 2002: 250).

P3: *optimal competition = maximum (perfect) competition*;

“[T]he traditional economic theory’s answer to the question of optimal degree of competition [is] simple: maximum competition” (Amsden and Singh, 1994: 942).

P4: *the preferred solution (ceteris paribus) to market failure is more markets and more competition.*

“[P]olicy cannot improve on those [competitive] outcomes... If this is the problem [monopoly and monopsony], the optimal solution is to make the market more competitive” (Wachter 2004: 165).

Where do these propositions come from? Fisher (2003) observes:

“[the] central set of propositions that economists have to offer the outside world – propositions that are in a real sense, the foundation of Western capitalism – comprise the two welfare theorems. These theorems elucidate the *relations between general competitive equilibrium on the one hand and Pareto-efficiency on the other*. They underlie all looser statements about the *desirability of a free-market system*. These propositions are also well understood and firmly grounded” (p. 4, emphasis added).

Narrowing the matter further, Just, Hueth and Schmitz (2004) point specifically to the first welfare theorem (FWT), stating:

“This conclusion [the FWT] is probably the *single most powerful result* in the theory of market economies and is widely used by economists who believe that markets are competitive and that governments should not intervene in economic activity. Milton Friedman and the ‘Chicago School’ are the best known defenders of this position. In addition, because of its efficiency properties, competitive equilibrium offers a useful standard for policy analysis” (pp. 27-28, emphasis added).

Blaug (2007) traces the “maximum competition” doctrine to the 18th century, principally the writings of Smith and Bentham (and modern interpretations thereof), argues it gained formal recognition when Schumpeter (1954: 233) labeled it “the Maximum Doctrine of Perfect Competition,” and became canonical after Arrow-Debreu (1954). Mas-Colell, Whinston and Green (1995), in turn, link the FWT to Adam Smith and the Invisible Hand and derive a policy conclusion of *laissez-faire*.¹ They state:

“The first fundamental welfare theorem provides, for perfect market economies, a formal expression of Adam Smith’s ‘invisible hand.’ Under perfectly competitive conditions, any equilibrium allocation is a Pareto optimum, and the only possible welfare justification for intervention in the economy is the fulfillment of distributional objectives” (p. 524).

The model of perfect competition and the FWT give rise to the concomitant concept of *market failure*. In NE theory, perfect competition and the FWT set the theoretical benchmark for economic performance and factors and frictions that cause actual economies to fall short of this ideal are labeled “market failures” (Stiglitz 2000a). Examples are monopoly and monopsony, externalities, public goods, and imperfect/asymmetric information. As is well-known, market failures cause an otherwise competitive market system to produce an inefficient outcome.

Economists fall along a broad spectrum of opinion on the extent to which market failures qualify or invalidate the FWT and its message of “more competition is good.” As a generalization, it appears that those economists most closely associated with neoclassical price theory and neoliberal economic policy are also most likely to accept propositions P1-P4 as useful first approximations and market failures as exceptions. A good example is economists of the Chicago School in the mold of Friedman, Stigler, Becker, Lucas, and Posner (Reder 1982; Becker and Murphy 1992; Kaufman 2012a). Rodrik (2007) calls economists in this mold “first best” economists. A number of other mainstream economists, however, fall in what Rodrik calls the “second-best” group. They view propositions P1-P4 more critically and some, such as Amartya Sen (1988) and Joseph Stiglitz (1994), reject the FWT/invisible hand concept (also see Samuels 2011).

[Insert Figure 1 about here]

The neoclassical first-best position on optimal competition is summarized in Figure 1 Panel (a). It graphs the relationship between Level of Competition (LC) and the level of Economic Performance (EP). It is later generalized and extended. The level of competition in standard microeconomics is associated with different market structures with perfect competition at one end and monopoly at the other. LC is measured here by the level of monopoly in the economy (broadly defined to include factor markets); hence, in panel (a) the origin defines perfect competition and the end point of the horizontal axis perfect monopoly-monopsony (MM). Some other form of market failure, such as size of external effects, could also be used. The vertical axis measures EP, going from zero at the origin to some maximum level denoted by EP₂. Performance can be measured by many different criteria; the standard approach in both NE and NIE, however, is in terms of efficiency. Efficiency, in turn, can be measured in terms of utility (e.g., sum of consumer and producer surplus in the economy) or output (e.g., location of the production possibility frontier, PPF). Since it is unimportant to the argument, I move between the two for expositional purposes.

The upward sloping line AB (drawn linear for sake of convenience) illustrates two fundamental base-line propositions of mainstream microeconomics. The first is that *more competition is better than less* (P2). The performance level for monopoly/monopsony, for example, is EP₁; as the level of competition increases so does efficiency (e.g., movement toward a given PPF), shown by the upward-sloping arrow along AB. The second fundamental proposition is that the *maximum* level of competition (100%) is also the *optimal* level (P3). Thus, in perfect competition economic performance is at EP₂, the

highest attainable utility and output given current technology, endowments, and preferences. The distance EP_2-EP_1 measures the deadweight loss (DWL) from monopoly.

The essentials of this diagram were earlier stated by Demsetz (1995), “The perfectly competitive market uses market output as an index of competitive intensity, with output reaching its competitive maximum as the number of rivals increases to the point where all sense of rivalry is lost; a *monotonic relationship* is implied” (p. 141, emphasis added). Line AB gives his statement graphical representation.

As earlier noted, NE’s optimal competition propositions may require modification in the presence of market failures. Two cases are illustrated in Panel (a). If (say) monopoly arises from “natural” conditions, such as increasing returns, carving the market up among N atomistic firms leads to higher unit costs and lower economic performance. The downward-sloping dashed line BC illustrates this. Here is a definite qualification to the optimal = maximum competition doctrine. The second case is when monopoly arises from manmade sources, such as government restriction on entry or private cartelization. Lacking a justification in natural conditions, these forms of monopoly create DWL. In this case, line AB holds and so do propositions P1-P4. Therefore, NE recognizes as a real life qualification that the applicability of the maximum competition doctrine is contingent on the extent to which structural conditions are compatible with competitive organization of the economy; nonetheless, maximum competition is the ideal.

New Institutional Economics

Next to consider is the position of NIE on optimal competition. NIE has several theoretical branches (Furubotn and Richter 2005; Foss and Klein 2012); the discussion that follows is limited to the Coase and Williamson (C&W) transaction cost branch.

The place to begin on optimal competition is with Coase and his seminal article “The Nature of the Firm” (1937). In it he notes that resources and economic activity can be coordinated by entrepreneurs in firms or prices in market and then deduces the following oft-quoted decision rule:

The question always is, will it pay to bring an extra exchange transaction under the organizing authority [of the entrepreneur]? At the margin, the costs of organizing within the firm [“organizational” or “management” costs] will be equal either to the costs of organizing in another firm or to the costs involved in leaving the transaction to be ‘organized’ by the price mechanism (p. 404).

Since organizational/management costs are always positive for a firm, Coase in later articles drew the conclusions that: “in the absence of transaction cost, there is no economic basis for the existence of the firm” (Coase, 1988: 14) and “the existence of transaction costs leads to the emergence of the firm” (Coase, 1992: 716). Since standard neoclassical microeconomics assumes frictionless markets and exchange and people who make decisions with complete information and costless calculating ability, this is equivalent to assuming zero transaction cost (TC). Evidently, then, in perfect competition market coordination is always more economical than entrepreneurial coordination and firms therefore have no economic role to play, per Coase’s observation that in this situation production will be “carried out in a completely decentralized way by means of contracts between individuals” (Coase, 1988: 7).² Subsumed in this conclusion is Coase’s conceptualization of a “firm” as a multi-person organization in which one person (the

entrepreneur) coordinates and directs the activities of one or more other people, usually in the form of an employer-employee relationship (Hodgson 1997).³

Coase's analysis is largely adopted and extended by Oliver Williamson (albeit with selective demurrals from Coase), with the fullest exposition in *Economic Institutions of Capitalism* (1985). According to Williamson, transactions locate where the contracting costs are lowest (*ceteris paribus*); hence, market contracting is favored when external market governance costs (one form of TC) are less than internal costs of hierarchy (another form of TC). Williamson (1975: 8-9) argues that NIE is superior to NE because the $TC > 0$ assumption allows symmetry in analysis of the comparative efficiency of markets versus organizations. That is, positive TC creates market failures that favor internalization but also creates organizational failures that favor externalization. When the former dominate the latter, transactions are more efficiently coordinated inside organizations by management and administration, and vice versa.

However, Williamson (1985: 87) proceeds to introduce an asymmetry, called the "market-favoring" premise, that asserts market contracting is, *ceteris paribus*, the preferred contracting mechanism and is only abandoned when contracting hazards (i.e., market failures) bulk too large. He states, for example, "Only as market-mediated contracts break down are the transactions in question removed from markets and organized internally. The presumption that 'in the beginning there were markets' informs this perspective" (p. 87). The reason Williamson (p. 403) gives is that market competition provides more "high-powered" incentives and avoids bureaucracy costs.

The paradigmatic case considered by Williamson is the "make versus buy" decision inherent in vertical integration; i.e., should a company buy an intermediate input

through the external market or make it inside the company? At places, however, he puts the make vs. buy decision in an aggregate economic context; for example, with the query “Why not organize everything in one large firm?” His answer is, “The fundamental limitation to firm size thus must turn on the governance cost disabilities of internal organization...” (Williamson 1985: 131-32).

A key addition Williamson makes to the Coasian story is to identify three specific factors that shift the make vs. buy boundary. In addition to frequency and uncertainty of transactions, the third and central feature is asset specificity – a condition related to an investment in a human, physical, site, or dedicated asset whereby once the investment is made it cannot be redeployed without loss of value (Williamson 1985: 95). Asset specificity creates bilateral dependency and potential for one of the parties to the contract to practice an opportunistic hold-up of the other. Thus, as asset specificity increases so does the potential TC of market exchange and contracting parties are motivated to shift from market governance to organizational governance.

Williamson qualifies this switch-over from market to firm -- called the “Fundamental Transformation” – by noting that a complete cost comparison for make vs. buy involves the sum of production and transaction cost. Production cost -- including related technological determinants such as scale economies -- mostly falls out of the analysis as an active variable, however. One reason is Williamson’s claim that “the firm is everywhere at a disadvantage to the market in production cost respects” because the market can aggregate demands and have a supplier firm produce the good at lower unit cost and, hence, “[o]nly when contracting difficulties intrude does the firm and market comparison support vertical integration” (ibid., p. 94). The second reason is that with

zero TC any production cost advantage from economies of scale and scope can be bargained around to reestablish competitive conditions, hence “The upshot is that *all* cost differences between internal and market procurement ultimately rest on transaction cost considerations” (p. 92, emphasis in original).

Williamson (1996: 108) illustrates these propositions in a well-known and oft-reproduced diagram (e.g., Ménard 2005). It is similar to Panel (b) of Figure 1 except I have added a right-hand vertical axis. The vertical axes measure governance costs for a particular level of output; the horizontal axis measures asset specificity (k) starting at 0% at the left-hand origin (point A) and extending to 100% at the right-hand origin (point B). The significance of point E on $H(k)$ is discussed later. Since by hypothesis production cost always favor markets (i.e., buying from other firms), omitting this component and concentrating only on governance cost does not change the conclusions.

In presenting this diagram, Williamson (1996: 106, emphasis added) reiterates the market-favoring premise: “The *ideal transaction* in law and economics – whereby the identities of buyers and sellers is irrelevant – obtains when asset specificity is zero.” This is indicated in Panel (b) where the intercept of the market governance cost function (M) is lower than for the hybrid (X) and hierarchy (H) cost functions, i.e., $M(0) < X(0) < H(0)$. As asset specificity rises, adaptation costs (e.g., safeguarding against hold-up) rise for all three forms of governance but least rapidly for hierarchy ($M' > X' > H'$). The most efficient forms of governance are indicated by the bolded curve $M(0)CDE$ (henceforth called “envelope curve”), with transition from one form to another at the switch points k_1 and k_2 . Thus, for asset specificity $k < k_1$ market exchange is favored, for $k > k_2$ hierarchy

is favored and for $k_1 < k < k_2$ a hybrid form is favored. The Fundamental Transformation occurs at the switch points.⁴

Having reviewed this branch of NIE theory, now consider the question of optimal competition and propositions P1-P4. To do so, hybrids are abstracted from. In this framework, competition is synonymous with market governance; hierarchy on the other hand utilizes the opposite of autonomous individual competition – managerial-guided team work, cooperation, and planning.

Examination of Figure 1 reveals that the NIE conclusions from C&W about optimal competition are the same as NE, albeit with one second-order qualification. In particular, both paradigms are developed such that they lead to a *ceteris paribus* market-favoring conclusion. This is true for both cases of $TC = 0$ and $TC > 0$.

Start with $TC = 0$. With perfect information and omniscient human decision-makers, both NE and NIE predict that the optimal outcome is “100% markets” and “maximum competition” (P3). In Panel (a), a condition of $TC = 0$ makes possible an economy of perfect competition and the upward sloping line AB indicates that efficiency is maximized with all exchange done through markets (point A). In Panel (b), a condition of $TC = 0$ implies zero market governance costs and an $M(0)$ intercept at the left-hand origin (point A). With $TC = 0$, the M function also coincides with the horizontal axis the entire way to point B ($k = 100\%$) since, according to Williamson (1975: 7; 1985: 56), asset specificity only gains traction in the context of uncertainty and bounded rationality.

Next consider $TC > 0$. Positive transaction cost creates conditions for various kinds of market failure and a potential rationale for abridgement of market competition. In both NE and NIE, therefore, market-favoring is the base-line premise but is explicitly

qualified to note that in certain situations efficiency is enhanced by partially supplanting or restricting competition. This result was already demonstrated for NE in Panel (a) with the line BC. With respect to NIE and Panel (b), the market-favoring premise is indicated by $M(0) < H(0)$. This may be paraphrased as “in the absence of market failure due to asset specificity, the optimal level of competition is 100%.” (P3). It also indicates as corollaries that “competition is good” (P1), since efficiency is higher when, *ceteris paribus*, market governance prevails, and “more competition is better than less” (P2), since moving down the envelope curve toward greater reliance on markets and competition also increases efficiency (i.e., reduces the cost of any given level of output). These latter two propositions imply that the preferred solution to market failure (P4) is to find ways to lower contractual hazards of market exchange in the presence of asset specificity (say by reducing *ex-post* contractual litigation costs). Doing so lowers the slope of the M function, shifts the location of k_1 to the right, and leads to greater market transacting and unit lower product cost (i.e., fills in a “missing market”).

Going in the opposite direction, both NE and NIE also agree that replacing markets with hierarchies in the absence of market failures lowers economic efficiency, although in the former case because larger organizations create, for example, more potential MM power and in the latter because larger organizations suffer from impaired incentives. The validity of P1-P4 is contingent, however, on the extent of market failure. If, for example, asset specificity is relatively high, such as k_2 , then the best efficiency outcome is hierarchy since $H(k_2) < M(k_2)$.

It appears, therefore, that on the question of optimal competition the only substantive difference between NE and NIE is, at an analytical level, the former has a

zero intercept (point A) in Panel (b) and the latter has a positive intercept ($M(0)$); otherwise Propositions P1-P4 carry through. Translated into Panel (a), with $TC > 0$ the line AB still has a positive slope but a lower intercept on the vertical performance axis (not shown), illustrating that maximum performance is necessarily lower with positive TC since the economy has a smaller stock of two valuable resources – information and decision-making capability – and thus a lower attainable PPF. It is true that because NIE introduces $TC > 0$ it is also able to offer a new or certainly strengthened efficiency rationale for hierarchical firms that helps shift the welfare evaluation of outcomes from mostly second-best (e.g., monopoly power) to more nearly first-best (economizing on contract costs); it is also the case that NIE may provide a more general and perhaps superior explanation of the source and nature of market failures (all stemming from TC). Nonetheless, with respect to Propositions P1-P4 both neoclassical theory and the C&W version of NIE theory yield similar implications, even though the latter operates within a smaller production set. In the context of the optimal competition question, it appears that NIE, by making information and cognition additional scarce resources, is indeed an extension of NE but, in terms of conclusions about the desirability of market coordination versus organizational coordination, NIE is with only minor qualification the same as NE.

Optimal Competition Conclusions Critiqued

Now follows a critique and reformulation of these optimal competition predictions. As earlier indicated, the analysis stays mostly within the standard microeconomic framework, and in particular, builds on and extends insights from Demsetz (1991), Simon (1991), Stiglitz (1994), and Weitzman (1974). The message, however, is one long advocated by original institutionalists, such as Clark, Commons, Hamilton, and Veblen.

Figure 2 is a generalization of Figure 1 Panel (a). The vertical axes measure economic performance in production. Along the horizontal axis is the economy's technical division of labor (DoL), ordered from left to right by steps in the stages of production. Following Demsetz (1991) and Kaufman (2003), the two polar opposite methods for coordinating the DoL are, at the left-hand corner, a system of Perfect Decentralization (PDecent) and, at the right-hand corner, Perfect Centralization (PCent).⁵

[Insert Figure 2 about here]

The PDecent production system is the most atomized and decentralized version possible in which markets and price coordinate all interpersonal exchanges of private property rights in inputs and outputs across the DoL. A market interface exists at each separable task in the aggregate production system. The PCent economy is the polar opposite where the entire DoL and all transfers of inputs and outputs within the production sphere (in the form of publicly owned property) are coordinated within one hierarchical organization by managerial command and administration. Thus, the former is inter-organizational coordination of the DoL and the former is intra-organizational; likewise, in the latter quantity adjustment replaces price adjustment (Weitzman, 1974). Markets for final goods and services may exist (the consumption sector is outside this model); in the production sphere, however, markets in the traditional sense do not exist for factor inputs and intermediate goods and their monetary values and exchange ratios are administratively set, perhaps by imputation from final goods prices.

PDecent is the equivalent of perfect competition and Walrasian general equilibrium but with production vertically dis-integrated to the lowest level so that all firms are single person proprietorships and independent contractors; PCent takes Coase's

individual firm – “that little planned society” (Coase 1992: 716) and “island economy” (Holmstrom, 1999: 74) – and aggregates it to a Leninist version of perfect central planning (Lenin, 1932) or a macro version of Frederick Taylor’s scientific management (Taylor 1911) in which the production sector of the economy operates as one giant frictionless factory (Scoville 2001).⁶ PCent and PDecent correspond to the endpoints of economic organization identified by Coase (1937); that is, N producers exchanging all inputs and intermediate goods through markets guided by prices vs. one producer allocating all inputs and intermediate goods through administrative orders, rules, and quantity commands. The endpoint MM in Figure 1 now occupies a middle position between “all markets” and “all organization” where the DoL is characterized by (say) monopoly conditions within industries but market relations across industries (a general equilibrium monopoly economy).⁷

Traditionally, NE microeconomics had little to say about the portion of the DoL operated by command, management, and entrepreneurship (the DoL to the right of MM), other than the highly stylized theory of the firm as a production function. In this respect, NE is indeed a special case. Although this generalization continues to hold for standard microeconomics texts (e.g., Mas-Colell, Whinston and Green 1995), in recent years specialized applications of microeconomics, such as organizational economics and personnel economics, have started to explore the portion of the DoL coordinated by management and administration (Grandori 2013).

NIE overlaps with organizational economics but gives greater emphasis to the transaction cost concept (Furobotn and Richter 2005); likewise, NIE differs from NE by including the entire range of economic organizational forms, from PDecent on one end to

PCent on the other. In effect, NIE takes line AB from Panel (a) of Figure 1 and inserts it into Figure 2 as the line segment AF and then extends it with another segment FB to cover the range of non-market forms spanning MM-PCent. Intercept adjustments aside, NIE follows NE regarding the issue of optimal competition and propositions P1-P4. That is, other things equal, line AFB indicates “more competition is better than less” (P2) and “optimal competition = maximum competition” (P3).

As earlier indicated, these conclusions are for NE an implication of the first welfare theorem and, for NIE, an implication of the C&W claim that markets are associated with lower TC and hence higher attainable economic performance. However, both agree that – conditions allowing -- more competition is better than less. Thus, taking Figure 2 in reverse direction, as TC and market failures get larger the economy moves down line AB as organization and command replace markets and competition and performance decline (akin to moving up the envelope curve). At Point B the production side of the economy has agglomerated (coagulated?) into “all command” and “no markets” associated with the Leninist/Taylorist corner solution of “one giant factory.” Point B indicates that some output and consumer/producer surplus is still created but it is also the lowest of alternative production systems. Many economists, for example, would point to the sclerotic and eventually untenable economic position of the USSR with substantial central planning, or what appears to be the same case in current-day Cuba and North Korea, as evidence in favor of this prediction. So viewed, even a capitalist world of MM (“monopoly capitalism”) is much superior to a socialist world of state control.

But here emerges a fundamental contradiction mostly ignored in NE and NIE. This contradiction surfaces when one considers the long-running controversy known as

the Socialist Calculation Debate. The debate is reviewed and assessed by Stiglitz (1994; also see Lavoie, 1985; Steele, 1992). He notes, “Samuelson described the economy as the solution to a maximization problem [and] . . . under strong conditions [the assumptions underlying the welfare theorems] his insight was correct” (p. 10). Hence, achievement of a Pareto optimal allocation of resources involves solving the equations of Walrasian general equilibrium for the optimal prices and quantities. But, as Stiglitz also notes, the same Pareto optimal resource allocation can be generated in a socialist production system where administrative quantity commands guided by calculated shadow prices replace markets and competitive prices. This conclusion stems from the Lang-Lerner-Taylor theorem (LLTT) – it establishes “the equivalence between two alternative institutional arrangements for an economy; it asserts the equivalence between [perfect] market economies and [perfect] ‘market socialism’” (p. 9). Stiglitz then summarizes, saying: “The Lange-Lerner-Taylor theorem, when combined with the fundamental theorems of welfare economics, suggests that the economy should be able to obtain *any* Pareto-efficient outcome” (p. 10, emphasis added; also see Weitzman, 1974: 477).

The implication of this line of thought is that, given the strong assumptions embodied in the FWT, an efficient production system and set of final goods and services is as attainable in socialism as capitalism. This duality arises because zero TC allows efficient contracting in both modes of coordination. In one, an omniscient auctioneer coordinates the economy using the Invisible Hand of markets, prices, and competition in a completely decentralized setting of autonomous individual activity and in the other an omniscient central planner coordinates the economy using the Visible Hand of

organization, administration, and cooperation guided by imputed/shadow prices in a completely centralized setting of group collaboration and team work.

Economic performance, accordingly, is maximized at *both* endpoints of economic organization since output in each system (points A and C in Figure 2) is on the PPF. It follows that 100% command is as good as 100% competition. Performance is also maximized at any interior point along the dashed line AC in Figure 2, per the zero TC version of the Coase theorem. The dashed line represents, therefore, the economy's PPF; it is also a locus of efficient economic organizational forms.

The equal efficiency outcomes of PCent and PDecent reveal, therefore, that the power of the FWT comes *not* from perfect *competition*, as widely interpreted in the literature, but from the assumption of perfect *information* (Potts 2000). Perfect information, however, is a double-edged sword for proponents of market capitalism since it yields not only perfect competition but also perfect planning. Hayek (1945) and the Austrians, being alert to this conundrum, long ago abandoned the perfect competition model; in neoclassical economics, however, it remains a mainstay and, as earlier described, many micro-economists continue to cite the FWT as evidence in support of the efficiency advantage of free markets. However, such a claim is a logical non-sequitur since correctly interpreted the FTW is neutral between competition and planning.

Proponents of NIE may object at this point that my optimal competition critique is perhaps apropos the rarified world of Walrasian general equilibrium but does not apply to NIE since it explicitly postulates positive transaction cost and all the contracting problems that flow from imperfect information. This argument seems plausible but, on deeper analysis, also founders on logical difficulties.

To consider this matter, return to Panel (b) of Figure 1. With zero TC, the economy can locate at either perfect competition (point A) or perfect command (point B). However, as soon as positive transaction cost is introduced the results significantly change. When cognition and information are free goods, perfect command is a feasible option at point B; however, with positive TC point B is unattainable with an overload of decision-making and information at the top and a host of principle-agent and incentive problems up and down the hierarchy. The economic performance of central planning therefore plummets to (say) point E on the envelope curve (e.g., the level of North Korea). The large performance drop E-B represents in NIE theory, and also on the Austrian side of the Socialist Calculation debate, the size of the gap between the optimistic theory of centralized scientific management of an economy and the not so bright reality. Even a small dose of TC, therefore, greatly changes the equilibrium and introduces a large discontinuous knife edge into performance (Stiglitz 2000b).

So far so good for NIE. The problem, however, is that this insight is again applied in an asymmetric way to markets and capitalism versus organizations and socialism. The import of C&W's transaction cost/contracting theory of economic organization is that firms arise largely as a *cost-avoidance* strategy in response to market failure; in turn, the positive sloped envelope curve in Panel (b) indicates that firm size grows in lock-step with the breadth and depth of the market failures (e.g., asset specificity) that motivate their initial formation. An unsettling implication, however, is that an economy's PPF and attainable standard of living progressively *shrinks* as it becomes populated with either a greater number of large-size firms or growth in the size of existing firms (measured by employment). The dual of this proposition is that an economy completely composed of

single person firms is able (*ceteris paribus*) to outperform an economy of (say) Fortune 500 firms; alternatively stated, C&W's theory suggests that large firms, such as Boeing, Microsoft and Walmart, impose a cost on the economy and atomizing them, if transaction cost conditions allowed, would boost GDP.

Pursuing this insight further, one sees that the NIE theory of the firm suffers from a fundamental mis-specification that warps its conclusions about optimal competition. To start, return to Figure 2 and consider the line CD. Coase won the Nobel prize in part for his work on transaction cost and the organization of production in his "Nature of the Firm" article; the other major reason was his second article "The Problem of Social Cost" (1960) and its implications for externalities and welfare analysis. In particular, he demonstrated that the welfare loss arising from externalities cannot be assigned to a particular agent or owner of property rights (e.g., the railroad's locomotive that emits sparks and burns down the farmer's wheat field) but, rather, arises endogenously from the imperfectly specified property rights that *all* agents are party to.

We see in Figure 2 that the insight of the "Social Cost" article has not been carried over into the "Nature of the Firm" article and its progeny. That is, the performance optimum achieved with atomized perfect competition is held up as "market success" and thus factors that interfere with exchange, price coordination, and resultant gains from trade are labeled "market failures." This is the meaning of line AB. However, we also know that with $TC = 0$ the economy can attain the same optimum of performance with a perfect command economy at point C. As viewed by Lenin or Taylor – or modern management/organization scholars (per titles such as *The Effective Organization*, Tafoya, 2010), point C represents a case of "organizational success."

Why, then, would an economy ever depart from this position of organizational success and introduce markets? The symmetrical conclusion is that some factor, known as an “organizational failure,” degrades the ability of entrepreneurial direction to efficiently allocate resources and, hence, at some point a substitute form of coordination becomes cost effective (for a survey of the management literature on organizational failure, see Mellahi and Wilkinson, 2004). In a competitive market system, for example, a monopoly formed by government edict is a source of market failure; reciprocally, in a command system an open market introduced by government edict (e.g., in Russia when Gorbachev instituted perestroika) undermines centralized control and is a source of organizational failure. One can, therefore, draw the line CD and make the mirror image arguments for the level of optimal command. That is, line CD generates symmetric propositions P1*-P4*: organization is good, more organization is better than less, optimal organization = maximum (perfect) organization, and in the case of organizational failure the preferred solution (*ceteris paribus*) is a policy of more organization and command.

The implication is that from one perspective a firm originates in market failure (e.g., scale economies, external effects, asset specificity) and, from another, a firm originates in organizational success (the same scale economies, external effects, asset specificity).⁸ Which is the correct perspective? A lesson of Coase’s “Social Cost” article is that one is no less true than the other by the nature of their dual relationship. Ironically, therefore, Coase’s 1937 “Nature of the Firm” article suffers from the same kind of one-sided “assignment of cause” problem he was later to criticize Pigou’s theory of externalities. Williamson’s theory of the firm, and theory of economic organization in general, has taken over the same one-sided perspective (Ghoshal and Moran 1996).

Symmetrically viewed, externalities that degrade market performance become internalities that increase the performance of organizations (Ellingsen 1998).⁹ Similarly, market failures from asset specificity and contracting hazards become the basis for organizational success, say as firm-specific human capital and long-term employment relationships allow large firms to generate higher productivity and innovation than markets and single proprietorships can achieve. Emblematic of this counter-perspective, a large genre of literature exists in strategic management, human resource management, and organizational economics that argues internalization of employment and creation of unique and idiosyncratic workforce skills, knowledge and capabilities is the superior performance option (e.g., Allen and Wright 2007; Foss and Klein 2012). From this perspective, firms and other hierarchical production organizations (e.g., government) using strategic management (planning) allow an economy to reach a higher production possibility frontier than with a markets-only production system (Spulber 2009).

Thus, NE and NIE are surely one-sided theories when they continually emphasize the “marvel of markets” (e.g., Williamson 1985: 87) but fail to give reciprocal emphasis to the “marvel of organizations.”¹⁰ Although Harold Demsetz (1991) and Herbert Simon (1991) two decades ago pointed out this lacuna – as have more recently a number of other economists and organization theorists (e.g., Hardt, 2009; Lazonick 2013; Loasby, 2002; Pitelis and Teece, 2009), NE and NIE nonetheless continue to emphasize the organizational failure dimension, particularly as it originates in, respectively, monopoly and bilateral contracting problems (e.g., Furubotn and Richter, 2005: Ch. 8; Garrouste and Saussier, 2008). No doubt these facets have some explanatory power in the vertical integration decision – indeed Veblen (1904) called attention to both more than a century

ago (Knoedler 1995), but it also must surely be limited. Vertical integration, for example, applies to macro economies as well as micro firms, as Coase (1937) early-on recognized (e.g., Lenin's economy as one giant factory). It seems quite implausible, however, that differences in monopoly or asset specificity explain why some economies are highly marketized (e.g., Anglo-American countries), others are capitalist but highly regulated and administered (e.g., Rhineland and Scandinavian countries) and yet others are almost complete command economies (e.g., Cuba, North Korea).¹¹

A reasonable surmise, therefore, is that NIE theory, like neoclassical theory, has a large omitted variables problem and restricted domain of applicability. These misspecification problems imply, in turn, that these theories' predictions and implications on the optimal competition issue are similarly biased and limited in useful application.

Determinants of Economic Organization: A Generalized Model

The message of the preceding is that both NE and NIE are one-sided and mis-specified with regard to the pros and cons of markets versus organizations. The remaining challenge is to provide a theoretical framework that is more general and balanced.

The approach presented draws inspiration from Commons' *Institutional Economics* (1934), as well as works by Schmid (1987) and Kaufman (2003) which extend and develop his ideas. The epigraph indicates Commons' theoretical strategy: to conceptualize the problem of economic organization as choice between two alternative transactional modes, one which uses markets, competition, and price to coordinate economic activity (bargaining transactions) and the other which uses organizations, managerial direction, and planning/administration (managerial and rationing transactions) to do the same. He (p. 108) distinguishes the two end points in the spectrum of economic

organization as “extreme individualism” and “extreme collectivism,” which Kaufman (2003) translates into the PDecent and PCent options earlier presented (Figure 2). The theoretical challenge is to then determine the exogenous background factors which determine choice among alternative competition and cooperation modes and how they mix together to create the pattern of economic organization actually observed.

As all readers of Commons know, his discussion of these matters is complex and not always easy to decipher. However, synthesizing from Commons’ writings, Kaufman (2003) identifies five fundamental structural determinants of economic organization.¹² They are reproduced in Table 1. Following Schmid (1987), he then considers how permutations of these variables affect the nature of interdependencies between agents and the resulting incentives to externalize or internalize transactions.

The table is an example of what Hamilton (1918) says is a central theoretical goal of OIE: to identify strategic elements that determine the structure of the economic order. It is, in effect, an OIE periodic table of economic organization. It also fulfills a second goal of Hamilton: to develop a theory that shows value theory (NE competitive price theory) is a special case of institutional economics.¹³ In addition, relative to Williamson’s (1985) three factor theory (frequency, uncertainty, asset specificity), this framework is considerably more general and explanatory regarding the determinants of the make-buy boundary (for a comparison of Commons vs. Williamson, see Kemp (2006)).

The vertical columns show the permutations of the five variables that are most conducive, respectively, to an economy of perfect decentralization (PDecent) and perfect centralization (PCent). The table thus establishes the end-points in the make-buy continuum. [Identifying intermediate points is also valuable but outside the bounds of this

paper.] The structural variables take one of two states: Decision-making is bounded (imperfect) or unbounded (perfect); utility functions, production functions, and property rights exhibit either perfect divisibility or indivisibility; and sovereignty (government enforcement of contracts and commands) is either perfect or imperfect. Divisibility is a short-hand for the degree of jointness and lumpiness in economic relations, including attributes such as separability, decomposability, modularity and asset specificity.

[Insert Table 1 here]

Start with column 1. PDecent (extreme individualism) has unbounded decision-making, perfect divisibility in utility functions, production functions, and property rights, and perfect sovereignty. This combination of assumptions yields zero transaction cost and the neoclassical model of Arrow-Debreu general equilibrium. Perfect divisibility and separability of utility functions means the human agent is a complete individualist whose tastes and preferences are unrelated to actions of other people, thus helping eliminate externalities in production that may arise in superior-subordinate relationships and teamwork (e.g., envy, unfairness). This assumption, coupled with unbounded decision-making, also gives rise to the rational actor model (*homo economicus*) of neoclassical theory. Perfect divisibility in production functions implies constant returns to scale and complete decomposability among production tasks that, along with zero transaction cost, gives rise to an economy populated by N single person firms. (With CRTS, there is no production cost advantage to larger size, while zero transaction cost means buying and selling through the market is costless. On decomposability, see Langlois, 2002 and Baldwin, 2008). Likewise, perfect divisibility in property rights permits complete markets so all exchange can be efficiently coordinated by the price mechanism and

external effects and public goods problems are resolved. Finally, perfect sovereignty implies that government can completely and without cost establish and enforce all rights of ownership, ensuring that contracts are complete and opportunism, principal-agent problems, and moral hazard are precluded. Column 1 thus corresponds to the PDecent model of perfect competition (aka, market-performed information processing) in which price via the Invisible Hand is the sufficient statistic for all transactions.

Next consider column 2 for PCent (extreme collectivism). Decision-making remains unbounded, but utility functions, production functions, and property rights are indivisible and non-separable. With perfectly interdependent utility functions, all people have the same tastes and meld into one representative agent (e.g., the organic solidarity of “sociological man”). Thus, all people follow without deviation the command of the central planner and no principal-agent problems arise in hierarchies; likewise, with identical agents the gains from trade in markets are much reduced. Complete indivisibility (or non-decomposability) in production implies increasing returns throughout, complete asset specificity ($k = 100\%$), and system-wide task interdependency, thus making production in one giant “team” (Alchian and Demsetz, 1972) the most efficient choice.¹⁴ Perfect indivisibility in property rights implies individuals have no ability to exchange legal ownership of goods, foreclosing the existence of markets. Finally, sovereignty is again perfect so the leader(s) of the nation state can completely and without cost enforce all commands and regulate individual use of collectively-owned property. Column 2 gives rise to the PCent model of perfect command and a form of economic organization in which administrative rules and orders via the Visible Hand are the sufficient statistic.

Let's now re-examine the C&W theory of the firm and, more generally, the NE/NIE competition propositions P1-P4. It appears evident that whether price or administrative rules and orders are the more effective and efficient coordinating device is contingent on the properties of the five behavioral/structural variables in Table 1 and, in particular, how they affect the ability of price and command to transmit optimal information bytes. If decision-making is unbounded, the issue is largely moot since $TC = 0$ (with corollary conditions, such as perfect sovereignty) and both command and competition coordinate production equally well. If decision-making is bounded, then $TC > 0$ and we leave the NE theory of the firm for that of NIE.

The NIE theory is summarized by the upward sloping envelope curve in Figure 1 which, in turn, refracts into the "more competition is better" line AB in Figure 2. Table 1 suggests, however, that both lines are special cases dependent on a market-friendly combination of the four other variables in Table 1, as well as a one-sided conception of market failure. Assume, for example, that all four variables are maximum market-friendly (sovereignty is "perfect" in a laissez-faire sense), such as under the PDecent column. Clearly price becomes the favored statistic for coordinating production in decentralized markets, as all structural conditions (divisibility and separability in production and property rights, self-interested behavior, diverse preferences, no externalities and public goods) favor small production units, competitive exchange by anonymous buyers and sellers, and Invisible Hand outcomes. In turn, were hierarchical large-scale organizations to be introduced as a market substitute they would clearly represent a second-best means of coordination and, hence, be considered a market failure and source of inefficiency. An economist trying to represent this outcome in a graph would be led to draw the envelope

curve in Figure 1 and line AB in Figure 2, tout the “high-powered” incentives of markets, and proclaim “more competition is better than less.”

But now consider the converse case where all four variables are maximum organization-friendly, such as in the PCent column (sovereignty is “perfect” in the sense of completely blocking market activity). Is price still the best information delivery vehicle? Clearly not, for as Ménard (2005) surmises, “there must be some informational advantages to integration” (p. 293). Structural conditions now favor centralization and organizational coordination through command and administration (aka, planning). Economies of scale make it more efficient to concentrate production in one large firm; complementarities in use and generation of knowledge and indivisible/non-separable utility functions favor hierarchy by facilitating team-work and cooperation among workers and eliminating principal-agent problems between owners and employees; and indivisible property rights create large externalities and public goods problems for markets but which centralization solves (Rosen, 1991). Introduction of markets into this production system would sap performance and be pointed to as a source of organizational failure. An organizational theorist trying to represent this situation could draw a line like CD in Figure 2, tout the high-powered incentives of team work and organizational loyalty, and proclaim “more organization is better than less.”¹⁵ This person might also point out that going from PDecent to PCent changes the production function in ways that give it value-creating synergistic effects, yielding a higher potential output (not shown).

Figure 3 reconciles these disparate perspectives and provides a more general theory of economic organization for a positive transaction cost economy. The hash marks on the horizontal axis represent individual industries in the production system, where

each industry has a separable chunk of the DoL. The industries are arrayed from left to right according to the degree of market vs. organizational coordination (left = market; right = organizational). The left-hand vertical axis measures economic performance (EP); the right-hand vertical axis measures the 0-100% range in a frequency distribution.

[Insert Figure 3 about here]

Given the economy's technology and resource endowments, if $TC = 0$ any point on the dashed PPF line AC is efficient and, accordingly, the economy may feature all markets, all hierarchy, or some mix. With $TC > 0$ the economy's PPF shifts downward to (say) the dashed line GH (NIE's "intercept adjustment"). Point G and "all markets" and "100% competition" remain, however, the point of highest performance if $k = 0$.

The problems with this conclusion are it implicitly rests on, first, market-friendly (PDecent) states of the bottom four variables in Table 1 and, second, an incomplete calculation that includes cost-avoidance in choice of coordination mode but omits consideration of *value-creation* (Hardt, 2009; Zenger, Felin, and Bigelow, 2011). Taking into account these two factors yields a new locus of market/organization combinations for the economy's production sector, given by the inverse U-shaped curve IJL in Figure 3.16

In some industries (e.g., blueberry farming), the characteristics of the structural variables in Table 1 may closely approximate those conducive to competitive market organization (e.g., small capital requirements, little asset specificity, well partitioned property rights); likewise, agglomerating this part of the DoL into a larger hierarchy may generate few gains in productivity (e.g., negligible scale economies) and many costs (layers of bureaucracy). This production segment, therefore, has very small firms (e.g., the family farm) with little horizontal or vertical integration, thus placing it on or very

close to the left-hand axis of 100% market coordination. Since relatively few other production segments in a modern economy have a similar set of structural conditions, in frequency distribution terms these sectors cumulatively locate at, say, point I.

Entrepreneurs in other production segments (e.g., wide-body commercial jet aircraft) will choose a polar opposite form of coordination and integration, given underlying structural conditions and considerations of benefit and cost. Economies of scale, team effects in production tasks, complementarities and indistinct property rights in knowledge creation and sharing (e.g., R&D), and high asset specificity in company-specific human capital makes agglomeration of DoL tasks value-creating.¹⁷ Also favoring hierarchy is that organizational culture and group incentive programs create a “unity of interest” employment system that enhances the productivity of team work and aligns individual interests with organizational interests (Santos and Esienhardt, 2005). On the minus side, market coordination and decentralization of production entail high costs because breaking-up a highly interdependent production process creates many externality and public goods problems (Rosen, 1991; Milgrom 2010). This production segment, therefore, locates on or close to the right-hand axis of 100% management coordination of the relevant DoL (e.g., the Boeing Company). However, just as with blueberry farming, there are relatively few industrial segments that have a similar set of structural conditions so in frequency distribution terms they locate at, say, point L.

The majority of industrial segments in the production system are likely to have more intermediate structural conditions and benefits vs. costs of integration, yielding a mixed market-organization structure. The median, for example, might locate at point J (e.g., industries such as auto parts, department stores, and hospitals). Connecting all the

points yields a frequency distribution, represented for convenience as the bell-shaped curve IJL. The exact shape of the distribution is an empirical matter; also, it is likely to vary across sectors and countries and shift over time with changes in the technological, political, cultural, and behavioral conditions listed in Table 1.¹⁸ Curve IJL might be called an “optimal competition” curve but could equally well be called an “optimal planning” curve; it could also be called a “market-organization” locus or “competition-cooperation” frontier.¹⁹ In Figure 3, this curve indicates that the efficient mix of markets and organizations is at an intermediate level with DoL coordination by a blend of prices and competition and management and administration (e.g., through “administered prices”).²⁰

The location of the optimal competition point is thus context contingent. This theory, therefore, argues the FWT is a special case that is not evenly approximately correct for any potential economy on Earth (i.e., with human beings and $TC > 0$).²¹ Similarly, this model indicates the FWT’s corollary, the second welfare theorem (stating a Pareto optimal allocation is independent of distribution), also has little relevance to a human economy -- because utility function interdependencies outside PDecent and PCent introduce interpersonal comparisons, such as fairness and envy. Finally, the model also highlights that every economic order and, hence, the shape of the market-organization locus and distribution of benefits and costs, is contingent on the sovereign power of the nation state via its specification of endowments and rules. Economics is thus inherently political economy (the subtitle of Commons’ *Institutional Economics* 1934), anchored on a legal foundation of property rights and governance structures (Commons’ *Legal Foundations of Capitalism* 1924), and where individual action is shaped and guided by collective action (Commons’ last book, *The Economics of Collective Action* 1950).

In closing, I need to briefly cover two other parts of OIE theory that Hamilton (1918) deems fundamental. First, an OIE theory must be able to explain dynamic change in the economic order. Table 1 does so through changes in one or more of the five structural determinants. As an example, an economy may evolve toward PDecent if entrepreneurs invent new industrial technologies having a lower minimum efficient scale, computers and the internet allow people to shift from employees to independent contractors, popular culture fosters greater individualism and free spirit among young people, or the government opens up public utility industries to new firm entry.

In this respect, original institutional economics has much in common with Austrian economics, particularly its stress on innovation and evolutionary change through entrepreneurial action. Schumpeter, for example, thought the superiority of capitalism arises from its dynamic efficiency through creative destruction and neoclassical claims about the optimality of perfect competition are not only wrong but harmful (the epigraph).²² Schumpeter, like Commons and other institutionalists, therefore predicts the peak of curve IJL at a point in time is further rightward relative to NE/ NIE predictions and shifts over time in response to innovation, R&D, and investment (Metcalfe 2013).

Hamilton (1918) says OIE theory must also explicate levers of social control over the economic order. Each of the five determinants of economic organization in Table 1 is such a lever and theorists of OIE have grasped them in different ways. Veblen looked to engineers and technology, Mitchell looked to the Federal Reserve and macroeconomic stabilization, Clark looked to new structures of corporate governance, Commons looked to the legislatures and courts for legal reform, and all looked to elevating the human condition through education (decision-making) and a higher sense of ethics (preferences).

Conclusion

Adam Smith in the first chapter of the *Wealth of Nations* (1776/1937) describes the division of labor that arises with economic activity; what he did not specifically address is whether the various steps in his example of pin production are coordinated via decentralized markets, prices, and competition among independent producers or, alternatively, team-work and cooperation among employees directed by owners/managers in a centralized hierarchically organized firm. However, in the remainder of the book Smith gives considerable emphasis to the virtues of a “system of natural liberty” and market coordination by the price-guided invisible hand, giving presumptive evidence that markets were his preferred option. Later generations of economists have followed Smith and to this day mainstream economics remains distinctly market-favoring, albeit with important qualifications as Smith at points introduced.

The analysis in this paper is not an argument against markets or competition for in many situations they produce the beneficent results Smith adduced. Rather, the purpose is to demonstrate that economists in both the neoclassical and new institutional schools have carried a good idea to excess. In so doing, they have adopted a one-sided theoretical corpus that unduly emphasizes the performance advantage of institutional coordination through decentralized, individualistic, and impersonal markets and slights the advantage of coordination through centralized, collective, and social forms of hierarchical organization. Although NIE is in certain respects more balanced than neoclassical microeconomics, analysis reveals that it too contains various limiting and asymmetrical assumptions that lead to market-favoring conclusions. Thus, one is led to conclude that the critique of conventional economics made by Walton Hamilton nearly a century ago is

still applicable today. Also remaining valid is the statement a half-century ago by J.M. Clark (1961) that, “it remains true that the imperfectly competitive mixed economy we have is better than the impossible abstraction of ‘perfect competition’” (p. 490). Likewise, a meaningful step has hopefully been taken to confirm Coase’s contention in his Nobel address that institutional economics will “bring about a complete change...in what is called price theory or microeconomics” (Coase 1992: 713).

Hamilton also called for a unifying theory that explains the structure and evolution of the economic order. Using ideas from Commons’ *Institutional Economics* (1934), I have sketched the basis of such a theory. The theory rests on a periodic table of five fundamental determinants of economic organization; permutations of these variables, in turn, explain end-points in economic organization – perfect competition and perfect planning – and intermediate positions as found in modern-day mixed economies. An implication of the table is that the ideal level of market competition is not “maximum,” as routinely conveyed in both neoclassical and new institutional economics, but an intermediate level with a combination of markets coordinated by price and organizations coordinated by managers -- guided in each case to promote social welfare and social justice by the visible hand of the state.

Notes

1. Smith’s link to the FWT is contested. On one hand, Smith seems to closely paraphrase the FWT in the *Wealth of Nations* (1776/1937), stating: “In general, if any branch of trade, or any division of labor, be advantageous to the public, the freer and more general the competition, it will always be the more so” (p. 313). Blaug (2007) and Samuels (2011) argue, however, for a broader reading of Smith in which he gives recognition to a variety of market failures and rationales for government intervention.

2. Revealed here is a large but mostly unnoticed assumption that tilts both NE and NIE to a market-favoring position: firms have set-up and operating costs but markets do not (e.g., cost curves are drawn for firms but not markets). If one institution is costly to establish and operate but another can be done with no resource commitment, the latter always starts out as the preferred option. Ironically, Friedman (1975) claims no free lunch exists in economics, and McConnell and Brue (2007:4) cite this proposition as “at the core of economics,” yet the entire theory of competitive markets and demand/supply rests on a free lunch assumption.
3. Here arises another logical lacuna in microeconomic theory: in a zero TC economy a perfectly competitive labor market, graphical model of labor demand/supply, and capitalist employment (wage) relationship, cannot exist since all firms disagglomerate into single person entities (Kaufman 2007). Therefore, employment relationships logically imply labor markets are always imperfectly competitive.
4. Neoclassical economics became ascendant after World War II in part because its assumptions (e.g., continuity, divisibility) facilitate marginal analysis and calculus-based mathematics. These techniques are much less applicable in institutional economics because institutions introduce corner solutions, such as the kink points on the envelope curve (Potts, 2000; Yang 2001).
5. In a fully general equilibrium model, Yang (2001) shows that the extent of division of labor is influenced by variation in transaction cost. To keep the graphical exposition manageable, and since key points are not affected, I take a partial equilibrium approach here and hold the DoL constant.
6. Two other analogs are Weber’s (1924) theory of an ideal rational bureaucracy and Durkheim’s (1898) theory of organic solidarity.
7. Actually, the demonstration in standard microeconomics that monopoly/monopsony are inefficient does not rest on sound logic, echoing conclusions of Clark (1961), Galbraith (1967), and Lazonick (2013). The reason is that when $TC = 0$ consumers/workers can use private bargaining per the Coase theorem to exhaust all gains from trade in a form of perfect price discrimination. This is but one example where incorporation of TC invalidates the micro-foundations of important parts of neoclassical price theory (Kaufman 2012a).
8. Illustratively, Hannan, Pólos, and Carroll (2007) in *Logics of Organization Theory* use the term “scale advantage.”

9. Information externalities and internalities are reciprocal in the sense the former are information indivisibilities and spillovers in the DoL (an external “common property”) available at the collective level but not to individual agents; the latter are discrete information bytes in the DoL appropriated and hidden/distorted by individuals for personal gain (an internal “private property”) at the expense of the collective. The former are better resolved with organizational internalization; the latter with market externalization. The ubiquity of externalities in competitive markets is discussed by Hahnel (2007).

10. Also neglected is the marvel of entrepreneurs, as emphasized in Austrian theory (Foss and Klein 2012). However, Austrians have traditionally neglected the firm as a substantive construct because, first, firms are assumed to reproduce the market allocation (Bylund 2011: 195) and, second, Austrians are not attracted to the idea that firms are an efficient device for administrative planning. Bylund endeavors to finesse these problems by arguing that firms allow a “denser” network of economic actors (akin to a bigger market), which promotes greater division of labor, specialization and productivity. Although a more positive rationale for firms, it is still market-based in terms of effective coordination and fails to acknowledge that it is the structure of interdependencies in the division of labor that makes planning an efficient alternative.

11. An important explanatory variable featured in the “varieties of capitalism” literature (e.g., Hall and Soskice 2001) for different nation-state patterns of economic organization is *institutional complementarities* – a concept not found in NE or NIE but derivable from Table 1 in the next section.

12. Included in the table are NE theory’s central exogenous factors, preferences, technology and endowments, and added are two factors NE renders moot by the rationality and perfect information assumptions, human decision-making and government enforcement (factors contained in NIE). In similar spirit, Grandori and Furnari (2008) present a “table of elements” to explain variation in organizational design features; markets are not included and its four elements are different.

13. This contention is also stated by Commons (1934: 94): “The so-called ‘law of supply and demand’ is not a law; it is a special case of the principle of Scarcity.”

14. Although Williamson (1985: 87) claims that technological factors play little role in the make vs. buy decision, the prime mover in his theory – asset specificity – is, in fact, a technological relationship resting on a form of complementarity. His theory is thus subsumed and generalized in Table 1. The asset

specificity variable is also exogenous to the make vs. buy decision only in the short run (exogeneity is required to derive the envelope curve in Figure 1) but, as Lazonick (2013) points out, asset specificity becomes an endogenous variable as soon as the firm has time to make capital investment choices.

15. This perspective is reflected in the central hypothesis of strategic human resource management (HRM): more investment in HRM (i.e., internal coordination of labor) → higher firm performance (Combs, Liu, Hall, and Ketchum 2006: 504; Kaufman 2012b).

16. The diagram does not include the monopoly or “value-capture” rationale for organization.

17. The combination of increasing returns and positive transaction cost in Table 1 is predicted to cause an agglomeration of DoL tasks within centralized organizations (firms). The same reasoning is used in spatial economics to explain the emergence of cities (Fujita and Thisse 2002). Also having close parallels are models in new trade theory (Krugman 1979) and new classical microeconomics (Yang 2001).

18. Over time entrepreneurs rework the production process to achieve greater output and lower production and transaction costs (Yang 2001). Thus, the complementarities in resource use and knowledge that provide the source of value for the creation of firms gradually get dissolved and activities can break-off and become market traded; the same is true for unique production processes and product characteristics (Milgrom, 2010). Langlois (2003) explains the rise and fall of the large “Chandlerian” integrated firm based on the shifting benefit and cost consequences of changes in production technology as refracted through low vs. high fixed cost, small vs. large economies of scale, low vs. high transportation costs, and low vs. high costs of decentralized information networks.

19. The points I am making are usefully illustrated by the example of home production and whether the DoL is optimally organized by market relations or marital relations. If the former, people form single person (atomized) households, specialize in certain home tasks they have a comparative advantage, and purchase the rest; if the latter they form a legally integrated multi-person unit called a marriage/family and do more home production through internal “make.” First, whether one institution or the other is “success” and the other “failure” is evidently a normative and one-sided judgment. Second, it is evident that people get married for numerous reasons and concern with opportunism in the face of asset specificity is one -- e.g., without legal integration the parties have incentives to behave opportunistically once the highly specific asset called own-children arrives. But it is also evident that people get married even if $k \approx 0$ (no

kids). An important cost-avoidance reason, for example, is scale economies from spreading fixed living costs; value creation reasons include two outputs called “love” and “children.” The former arises from a complementarity in utility functions and cannot be bought, the other in the joint nature of the (re)-production function. If single people could buy test tube babies, marriage rates would, *ceteris paribus*, fall. A full explanation notes that people also get married for value-capture reasons.

20. The curve yields the institutionalist/heterodox conclusion (e.g., Clark 1923) that competition can be excessive (to the right of the peak), rather than the conventional proposition of “more being better than less.” President Roosevelt believed the Great Depression was in part due to excessive competition and thus the New Deal sought to promote recovery by regulating and restricting competition (Kaufman 2012c).

21. The predicted performance of a perfectly competitive economy with *homo economics* is point A. With real human beings, the actual performance level drops to point I (the difference arising from zero vs. positive TC). The distance A-I is a measure of the *theory-reality gap* in competitive theory; B-K is the theory-reality gap in the theory of ideal socialism. The large gap is due to *strategically* unrealistic assumptions, per long-standing OIE critique and contra Friedman’s (1953) straw man claim that this criticism is a mis-directed demand for *descriptive* realism.

22. Hamilton in *The Pattern of Competition* (1940) anticipates the NIE analysis of make vs. buy for the early automobile industry (per the much-discussed Fisher Body-GM case) but then shows how the new technology (an OIE argument) devised by entrepreneurs shifted auto production toward large organization (e.g., from left to right along curve IJL). With regard to NIE, he states, “It was possible for the producer of motorcars to farm out the making of parts more cheaply than he could have done it himself. Thus, ... he reduced his activity to the single task of assembly, and replaced intricate organization of a productive establishment with a cordon of contracts.” (p. 27). However, he then notes, “the assembly line opened the door to price [market] heresy” (p. 28) because it created scale economies and “has given a strategic place to the large corporation” (p. 31).

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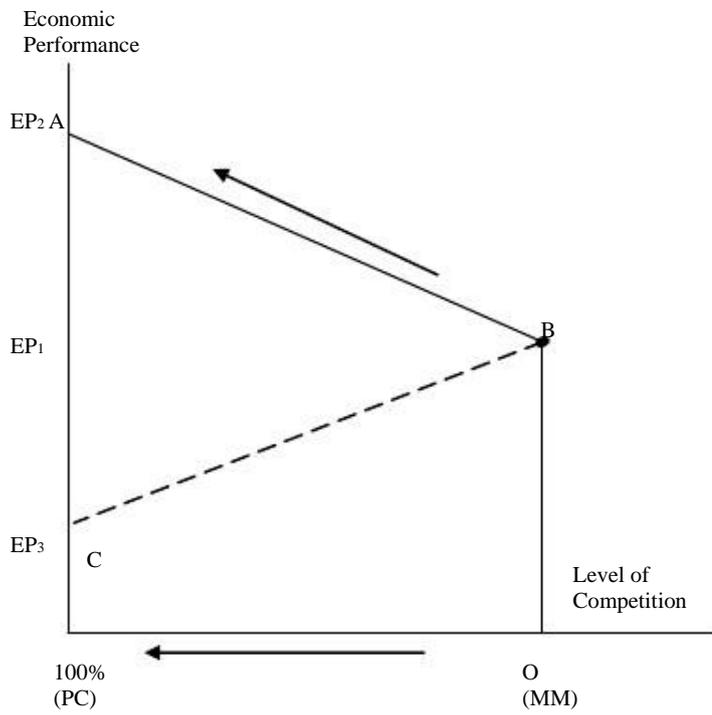
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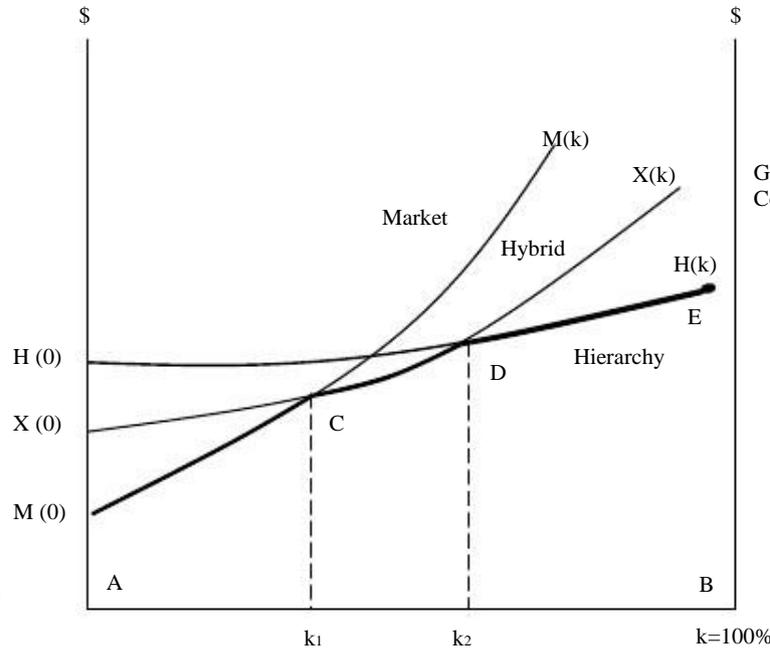
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Figure 1. Relationship Between Economic Performance and Competition: NE and NIE



Panel a: Neoclassical



Panel b: New Institutional

Figure 2. The Optimal Level of Competition, $TC = 0$

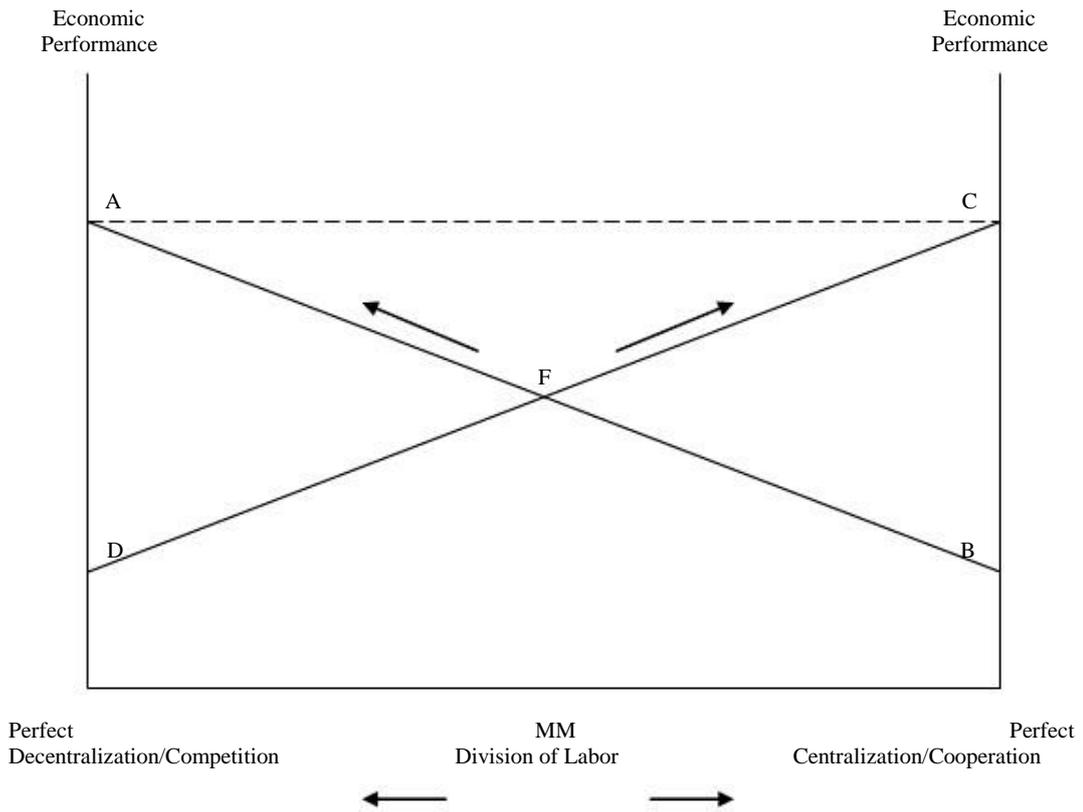


Figure 3. The Optimal Level of Competition, $TC > 0$

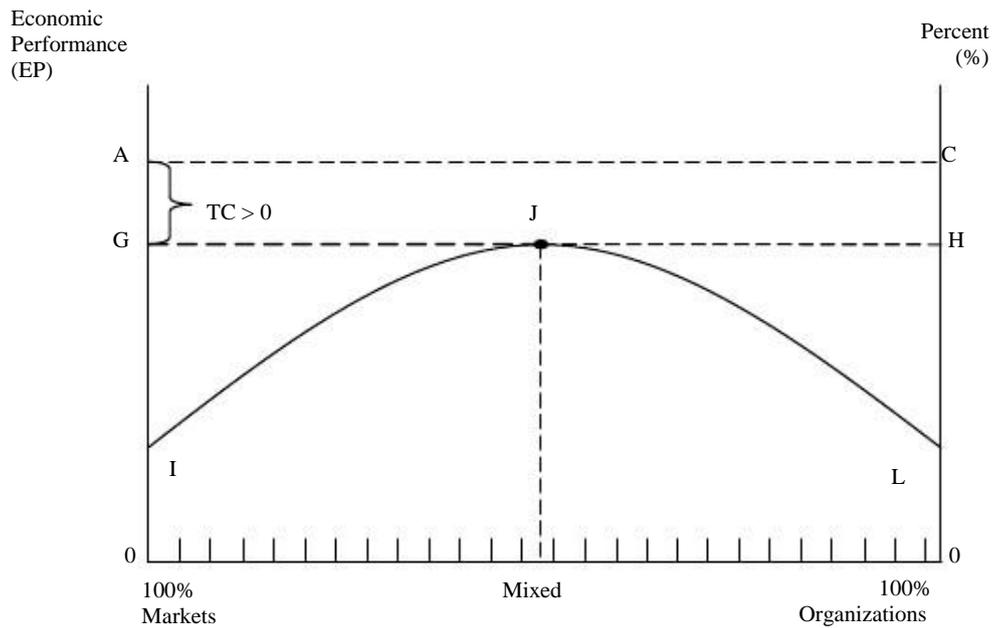


Table 1

Determinants of Economic Organization

	(1) Perfect decentralization	(2) Perfect centralization
Decision-Making	Unbounded	Unbounded
Utility functions	Divisible	Indivisible
Production functions	Divisible	Indivisible
Property rights	Divisible	Indivisible
Sovereignty	Perfect	Perfect