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Handbook of Industrial Organization: A Review

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Richard Schmalensee and Robert Willig (eds.), *Handbook of Industrial Organization*, Amsterdam: Elsevier Science Publishers. 1989. Two volumes. 1555 pages.

The two-volume *Handbook of Industrial Organization* edited by Schmalensee and Willig is part of the handbook series published by Elsevier. Their aim is to "serve as a source reference, and teaching supplement for industrial organization (or industrial economics), the broad field within microeconomics that focuses on business behavior and its implications both for market structure and processes, and for public policies towards them" (*Handbook*, p. xi). Chapter by chapter, the trend-setting writers have uniformly written readable and comprehensive summaries on their chosen topics. At the conclusion a reader can only be impressed by the wide front along which the "unprecedented burst of theoretical research" and "new waves of empirical and experimental work" are storming the field.

Yet, strikingly, the editors of the *Handbook* have not delineated the scope of the assault. If industrial organization is, as they suggested, a sub-field that lies 'within' microeconomics, what separates it from the other sub-fields? The concern for 'business behavior' cannot be a marker; much of the material covered by the *Handbook* has a level of abstraction (and correspondingly a distance between theory and real life) equal to that characterizing the general run of microeconomics. Nor are the different parts of the *Handbook* joined to tell a central story. This absence of external bound and internal integrity is perhaps symptomatic of a subject area in transition between paradigms. If so, what a pity that the *Handbook* has not highlighted the stepping stones and the surrounding hazards, as well as the landscape beyond the transition! In this paper I pursue the point by sketching the three paradigms that are currently discernible in the field of industrial organization, and recounting their treatments by the editors and authors of the *Handbook*.

1.

The quandary of industrial organization at a crossroad is commonly recognized. In 1968 Stigler had already mused (Schmalensee, 1988, p. 643): "there is no such subject as industrial economics . . . courses [on the subject] deal with the size structure of firms . . . , the effects of concentration on competition upon prices, investment, innovation and so on. But this is precisely the content of economic theory". Despite the ennui, until recently – as witnessed by a perusal of textbooks (e.g., Asch, 1983; Greer, 1984; Koch, 1982; Needham, 1978; Scherer, 1980; Shepherd, 1979) – industrial organization was easily identified by a standard body of material. The problem is that the material has not been particularly illuminating and new contributions have continued to weaken its identity.

When industrial organization first grew out of microeconomics, it was full of promise. Successfully weaned, it flowered and stood tall on its own. In terms of Kuhn's doctrine of scientific discoveries, it had achieved the status of a paradigm. Its lineage is straightforward. In Marshall's microeconomics, firms were grouped into 'industries' to facilitate his partial equilibrium analysis. Industrial organization emerged out of the concern for monopoly industries. As the theories of oligopoly and monopolistic competition developed, their policy implications were studied in a generalized structure–conduct–performance (SCP) framework fashioned by Mason, Bain and their followers. Basic demand and supply conditions dictate the market structure of an industry, which in turn causally determine the conduct and the performance of its firms. The framework provides a way, guided by theory, to infer from the empirical industry data the less observable firm behavior and the still less observable firm performance. It is readily distinguished from its parental microeconomics by its compact outline and its empirical bent.

As the SCP paradigm matured, many of its weaknesses were exposed. Two of them were particularly damaging. The entity being analyzed is 'industry'. In real life many firms do not have natural bedfellows; in technical jargon the cross elasticities of demand for their products spread along a continuum. When they are herded into two, three, four or five digit SIC industries for a collective analytical bath, the error from commission is reduced but the error from omission increases. The dilemma diminishes, often critically, the practical usefulness of policy prescription based on partial equilibrium analysis.

The second problem is the complex relationships among the multitude of structure, conduct and performance variables that began to surface. Since data are available for only a small set of firm variables, the empirical test of theories (e.g. pricing) can only be carried out indirectly (e.g. profitability). As more conjectures and hypotheses are proposed, simultaneous relationships among the same variables become commonplace. They overload the available data and defy testing and estimation. Improved econometric methods solve some of the identification problems, but often inject new, artificial assumptions. It is difficult to justify policy recommendations based on thin estimates of questionable statistical significance,

or theories that cannot be shown to be superior to their rivals. The SCP paradigm has lost both its innocence and its promise.

Some rethinking on the future of industrial organization becomes inevitable. It can be allowed to stagger on, producing more models and yielding more empirical tests of the relationships among the ever expanding set of structure, conduct and performance variables. Some of the results will be robust and useful. The SCP paradigm, however, can no longer serve as an integrating principle and the collection of such results are best designated as 'applied microeconomics' (AM).

An alternative path is to carve off a new block from microeconomics, whose rich lode appears inexhaustible. This is probably what the editors of the *Handbook* had in mind when they called industrial organization a sub-field of microeconomics. What is the identity of this sub-field? The editors tossed up some catch words ('behavior', 'structure' and 'policy') taken from the SCP paradigm. This will not do. These terms have specific roles to play in the SCP causal relationships. When the relationships no longer serve to integrate the material, they become unconnected notions and the editors have not supplied anything new to give them coherence.

Actually there was a serious attempt to find a unified body of knowledge in microeconomics to fill the slot of industrial organization. Quite recently Jacquemin (1987) wrote a book to herald the arrival of a 'New Industrial Organization' (NIO). The subfield is identified by a new methodology (the use of 'the new tools of microeconomics'), and a new viewpoint (the structure and organization of industries regarded as the 'outcomes of deliberate strategies'). Its material nearly coincides with the recent output of the trend-setting researchers on the supply side of microeconomics. The editors did generously incorporate such material in the *Handbook*, but apparently they did not wish to confine the field to NIO.

I would go further. I find it difficult to see why NIO, its sophistication and intellectual challenge notwithstanding, should be included as a component of industrial organization. The study of abstract oligopoly models based on specialized solution concepts of non-cooperative games is the polar opposite of a field that traditionally is associated with "business behavior and its implications both for market structure and processes, and for public policies towards them" (*Handbook*, p. xi). Real life businessmen do not have the sophistication of the game-theoreticians (Schmalensee, 1988), nor is there a compelling reason why they should. Unless a breakthrough is achieved so that non-cooperative game theory can be generalized, the conclusions of the studies are not robust enough to describe the real world and to have much policy relevance.

A final candidate to supply a new identity for industrial organization is New Institutionalism (NI). In a 1972 comment that started as an echo of Stigler's musing, Coase (1988, p. 58) went on a crucial step further: "what is curious about the treatment of the problems of industrial organization in economics is that it does not now exist. We all know what is meant by the organization of industry. It describes the way in which the *activities* [my emphasis] undertaken within the

economic system are divided up among firms . . . . What one would expect to learn from a study of industrial organization would be how industry is organized now and how this differs from what it was in earlier periods".

This conceptualization of industrial organization predated the SCP paradigm (*ibid*, p. 61). Marshall (in his *Industry and Trade*), Thorp, D. H. Robertson and E. A. G. Robinson had all written in this vein, without being constricted by the construct of partial equilibrium microeconomics. As the NI economists have discovered since then, the institutional forms available for organizing activities are almost infinitely variable. The proposed field of study is accordingly rich beyond imagination.

NI is radically distinct from Marshallian microeconomics. It reorients towards an analysis of the organization of industrial activities rather than the organization of industries. There are already glimmers – and again we are indebted to Coase – on the shape of the field. Microeconomics starts with the assumption that 'firms' exist. An industry consists of one or more firms, each of which makes price/output decisions and they transact in a 'market'. Coase's seminal study (1935) of the nature of the firm points out that firms are formed to be an alternative to market for transactions. They are a vehicle to bunch together activities and to 'internalize' transactions when the use of a market is costly.

Williamson (1975) carried the insight further. NI does not merely extend the old paradigm by probing the origin of the firm and adding transaction costs to the existing categories of costs. It shifts the focus to transactions, and opens the inquiry into the fruitful area of firm structure, firm objectives, and firm behavior. Further, as we will discuss in the final section of this paper, activities are organized by entrepreneurs to reap surpluses from the associated transactions. The relationship between the organization of activities and transactions points to a natural synthesis of NI with Schumpeterian economics. The synthesis is useful for studying the myriad of institutions in free enterprise and socialist economies. If this point of view is sustained, then the editors of the *Handbook* must answer to the charge of neglecting the future of a paradigm that has a legitimate claim to carry the mantle of industrial organization.

In the end the issue is pedagogical. At the present crossroad, if one path is coming to a mire, a second path re-submerges industrial organization in its parental field of microeconomics, while a third path is at least distinctive and perhaps promising, should not a book professing to be a guide for researchers and teachers make a statement on the choice?

2.

In this section I take account of the attention given to the three approaches – AM (applied microeconomics), NIO (Jacquemin's New Industrial Organization) and NI (New Institutionalism) – by the *Handbook*. I assign each chapter in the *Hand-*

book to one or more of the approaches, based on the nature of the material in the chapters.

The fact that such assignment is possible is attributable to the difference in the main questions raised by the three approaches. The segment of AM pertaining to industrial organization investigates the interrelationship among the structure, conduct and performance variables in industries. At the structure level, questions are raised on the determinants of size distribution of firms within an industry, of entry and exit, of product variety, of vertical integration, and so on. At the conduct and performance levels, AM deals with pricing, R&D, product differentiation, and their implied welfare consequences.

NIO covers essentially a smaller territory of the same ground, and can be distinguished by its different focus. Specifically, AM attempts to discover the impact of structural differences among industries upon the conduct and the performance of firms. The theories are developed as a basis for formulating and testing empirical models that portray the real life behavior of firms. In contrast, NIO confines its analysis to just one type of market structure, oligopoly, and investigates in depth the strategies available to the 'players'. The theories are developed primarily to deepen our understanding of the implications of interdependence and information structures on firm behavior.

Both AM and NIO explore the supply side of a market, taking the existence of firms for granted. NI, in contrast, is anchored on *activities* and a firm represents only one of the ways to bundle the activities. This permits NI to burst out of the limiting concept of a market and to engage in the analysis of the internal organization of a firm as well as the role of non-market organizations. The key to the emergence of different institutions is transaction costs. Since imperfect information and strategic interactions are an inextricable element of transaction costs, many of the concepts in NIO are also needed in NI (e.g. for the analysis of principal-agent relationship). This overlap in methodology does not vitiate the distinction between NIO and NI: their main concerns are disjointed.

The *Handbook* does not distinguish our three approaches but contains material from all of them. Superficially it appears to follow an outline based on SCP. It is divided into five parts: Determinants of Firm and Market Organization, Analysis of Market Behavior, Empirical Methods and Results, International Issues and Comparisons, and Government Intervention in the Market Place. Part One connotes structure, Part Two conduct, Part Three empirical implementation, Part Four an illustrative diversion, and Part Five performance and policy. But this is illusory. Chapters in each part are not integrated, and the different parts are not related to each other to complete a coherent SCP story. Instead, writers of different hues are allowed to follow their own inclinations, delving into special topics or digressing beyond the confines of SCP. The editors themselves also made no explicit reference to SCP in their introduction to the book.

The four chapters in Part One provide an illustration of the juxtaposition of different approaches. The first chapter by Panzar, 'Technological Determinants of

Firm and Industry Structure', begins with a statement that may be thought to be a rallying cry for NI: "the field has moved far beyond the mere description of how industries are organized" (*Handbook*, p. 4). It is not; the author is merely referring to the inadequacy of the 'classical perfectly competitive model'. The chapter goes on to present the recent advances in production and cost functions, and sits comfortably in the AM camp.

The second chapter, 'The Theory of the Firm' by Holmstrom and Tirole, covers four major topics: the determination of the boundaries of a firm; capital structure; the separation of ownership and control; and issues surrounding the hierarchy structure of a firm. The chapter exhibits an NI orientation, and supplies a solid refutation of any skepticism that the conceptualization of firm as a governance structure and as an alternative to market is too thin or too transparent a subject for serious study.

A capsule of the basic tenets of NI and what it has accomplished to date is found in Oliver Williamson's chapter, 'Transaction Cost Economics'. He describes the "contractual approach to the study of economic organizations". The main questions asked are: "Why are there so many forms of organization? What main purpose is served by alternative modes of economic organization? . . . is it the case that a common theory of contract informs all? What core features – in human, technology, and process respects – does such a common theory of contract rely on?" (*Handbook* p. 136). The procedure used to derive refutable propositions on these questions is to "assign transactions (which differ in their attributes) to governance structures . . . in a discriminating (mainly transaction cost economizing) way". The chapter clearly goes beyond the 'determinants of firm and market' (the designated content of Part One of the *Handbook*) and relocates the analytical focus to transactions and contracts.

The final chapter in Part One, 'Vertical Integration' by Martin Perry, situates (in the author's own words) "at the intersection of the theory of the firm, the theory of contracts and the theory of markets". Our three perspectives are joined. The key ideas of NI – incomplete contract, asset specificity and opportunism – find a ready application in vertical integration. AM leaves its imprint in the chapter with the traditional demonstration of the effects of vertical integration on market power. NIO enters into the picture as well, since vertical integration can also be employed as a strategy variable. These perspectives are complementary. Their mutual connections would be clearer if one of the perspectives were chosen as the mainstay and the conclusions from the other perspectives were integrated into it.

Similar appraisals can be made for the chapters in the rest of the *Handbook*; but I shall be brief. Part Two, 11 chapters and nearly 700 pages, by its sheer length is clearly the core of the *Handbook*. It discusses the large variety of strategies available to a firm in decision-making and coincides with NIO. The basic methodology, non-cooperative game theory, is explained (Fudenberg and Tirole). It is then applied to pricing under different circumstances: oligopoly (Shapiro), collusion (Jacquemin and Slade), entry (Gilbert), predation (Ordover and Sa-

loner), and price discrimination (Varian). Extending to multi-product situations, vertical integration (Katz), product differentiation (Eaton and Lipsey) and innovation (Reinganum) are discussed. There are also two chapters on market equilibria, as related to imperfect information (Stiglitz) and market clearing (Carlton).

Part Three is in the SCP – or AM – tradition. Empirical estimation of the interrelationships of variables at the different levels in the SCP paradigm is discussed (Schmalensee; Cohen and Levin), particularly the dependence of conduct variables (e.g. profitability) on structural variables (e.g. concentration ratios). The paucity of empirical results on firm strategy is exposed; the few studies relating pricing behavior to interdependent expectations (conjectural variations) appear belabored (Bresnahan). This paucity is hardly made up by the limited headway that has been made by the use of experimental methods (Plott). NIO is simply too specialized and too sophisticated to be fitted with data. At the same time, the real life case studies from the NI perspective are left out of this empirical section of the *Handbook*.

The two chapters in Part Four constitute a timely reminder that the interface of industrial organization (in any of its three guises) and international economics is fertile ground for exploration. Krugman gives an exceptionally clear review of the contribution of industrial organization models to international trade theory. Caves compares firm and market structures in different countries. The *Handbook* could profitably include some additional chapters on trading blocs and multinationals, both of which bear close affinity to industrial organization. More to the point, the juxtaposition of approaches is again conspicuous. Krugman divides his material into two main strands. The determination of the direction of trade by scale economies and monopolistic competition is in the AM tradition. The strategic interactions lurking behind policy making have the flavor of NIO. Caves' chapter is likewise divided between AM (market structure) and NI (firm boundary).

The final part of the book deals with government intervention in the market place. Departing from the SCP tradition in favor of the new directions of industrial organization, all the chapters here are concerned with government regulations. Antitrust cases and government enterprises make no appearance at all. The influence of both NIO and NI is strongly felt, as regulations are discussed in terms of principal-agent relationship, transaction costs and rent seeking (Noll). Different pricing rules for a natural monopoly by the regulators are reviewed (Braeutigam), and generalized further to take into account of strategic interactions between the regulator and the regulated against a background of asymmetric information (Baron). Empirical results on the effects of regulation and deregulation on prices and other performance indices are reviewed (Joskow and Rose). In the final chapter health, safety and environmental regulations are discussed from several starting points (Greenspecht and Lave).

The *Handbook* reflects the recent research interests of practitioners associated with Industrial Organization. My rough assignment puts 12.5 chapters in the NIO camp, mostly from Part Two. 8.5 chapters, mostly in Part Three, are cordoned

into the AM camp. The NI is credited with 5 (scattered) chapters. Although NI has a smaller claim than either of its 'competitors', it has significantly attained a substantial standing.

The assignment of chapters on the basis of their principal orientation understates the breadth of the approaches. If NI is accepted as the primary paradigm, for example, we must add to its contents all the relevant material from the other approaches. As the firm represents one of the ways to bundle the industrial activities, much of AM and NIO may properly be regarded as a (particularly well developed) subfield of NI. To divide the labor, of course, the researchers in NI may choose to take AM and NIO results as given and concentrate their analysis on institutional questions. Such drawing of fields lies well beyond the scope of the present paper. Our immediate interest is to go back to discuss why NI has a claim to carry the mantle of industrial organization.

3.

The objective of New Institutionalism is to explain the way in which the activities undertaken within the economic system are organized (Coase, 1988, p. 58). Industrial activities convert inputs to outputs. In an exchange economy each agent who operates an activity acquires some of his inputs from others and supplies some of his outputs to others. Transactions take place among the agents, and transactions costs (incurred for search, measurement, negotiation, and monitoring) explain the choice of institutions they employ (Williamson, 1980).

This refreshing tale is actually the tip of an iceberg. As perceived by Adam Smith, the first question of economics is not the origin of firms but the origin of activities. With division of labor, an activity is carried out if the ensuing exchanges yield producer and consumer surpluses to the transactors. Transaction costs subtract from the surplus, but the prospect of surplus is the ultimate motivation of activities. Institutions are established to increase the net surplus accruing to different agents, not only by economizing on transaction costs but also by redistributing property rights. Frequently they generate externalities and (unintended) feedbacks. The alteration of the configuration of potential surpluses has immense impact on the volume and the composition of activities.

The leading actors in NI are the *entrepreneurs*, because they are the agents who build and use the institutions within which they combine the inputs and design, direct, lead and coordinate the activities. As aptly characterized by Leibenstein (1987, p. 120), they are "ordinary individuals with some special motivational capacities and business skills". They innovate or imitate, moving towards the appropriate technology best suited for an activity. They hedge between markets by transporting goods and services across space or time. Finally, as emphasized in NI, they improve the way to bundle activities by internalizing market transactions within a firm or 'externalizing' administrative transactions back to the market, in order to reduce transaction costs. Curiously this Schumpeterian connec-

tion is overlooked by the NI writers. The main work to revive the Schumpeterian economics in the U.S. is the contribution by Nelson and Winter (1982), which is not integrated into NI and ignored in the *Handbook*.

Schumpeterian economics is more influential in Europe. "European economists have, throughout this century and before, detected the entrepreneur, as the moving force, who creates, reforms, and destructs the organizational market forms" (de Jong, p. 69). But by and large they have kept the entrepreneur in the confines of industry analysis. Typically, they start with the Schumpeterian proposition that the innovation of entrepreneurs inaugurates an industry de novo. In a modern world of superior communication and transportation facilities and elastic supply of capital, competition in the industry gradually intensifies. To reduce the heat of competition the entrepreneurs engage in cooperation, collusion and combination. This leads the Europeans to a dynamic view of industries, undergoing life cycles. Each stage of the cycle has a characteristic market structure. In all this, the role of entrepreneurs outside the market context is downplayed.

It is worth repeating that entrepreneurs as organizers of activities not only bring in new technologies and raise productivity, but also increase the volume and change the configuration of activities in an economy. This is the point made by Schumpeter when he alludes to the disturbance of the circular flow of an economy by entrepreneurs' activities. The contribution of NI is to add the institutional variations to the theme and create a composition rich in interplays.

The point may be illustrated by using the joint force of Schumpeterian economics and NI to analyze the fortunes of the two major types of organization of industrial activities today, capitalism and socialism. Schumpeter has argued (1942) that entrepreneurial activities are the engine of capitalism. Anticipating NI, he also discussed the possible ossifying effect on economic development if entrepreneurs are hardened into bureaucrats in a hierarchy. NI extends the story. Many institutional changes under capitalism have fanned opportunism among economic actors. Transaction costs rose in tandem. The net surplus from transactions is reduced, lessening the motivation to undertake many of the activities. The volume of activities falls below what it might be, causing an erosion of capitalism (Shen, 1988).

Socialism does not escape unscathed (Shen, 1990). In a (stereotyped, centrally planned) socialist economy the entrepreneurial function is performed by a state and party hierarchy. The apex group of the hierarchy takes away from the populace the right to organize new activities. It also obliterates the fruits of past entrepreneurship. This is a giant step backward. In a free enterprise economy, economic activities are organized by the multitude of grassroot agents based on their individual valuations of the surpluses that could be generated by the transactions ensuing these activities. The same activities are repeated by the agents in the subsequent time periods as long as the conditions are not adversely changed. A (newly installed) socialist government suppresses voluntary transactions. Not only the initiation of new activities by private individuals but also their continuation of old

activities are curtailed. The choice of activities, their commencement and their bundling are all decided by the apex group. A new calculation of surpluses (adjusted for transaction costs) based on the utility function of the apex group dictates the choice of institutions and determines the output volume and the product composition.

Specifically, in a free enterprise economy a pair of transactors, B_1 and B_2, consummate an exchange of x for y when they reap (non-negative) surpluses (after the subtraction of transaction costs). x and y are both produced and welfare is improved. In a socialist economy an authority, A, is superimposed over the two transactors in a hierarchy. The direct transaction between B_1 and B_2 is severed and replaced by transactions initiated by A. A takes x from B_1 and y from B_2. With state coercive power at A's disposal, A is free to decide what, if anything, will be offered to B_1 and B_2 in return. A is in a position to extract surpluses up to the confiscation of x and y. The transaction costs (incurred to maintain the state and party hierarchy) come out of the resources embodied in the extracted surplus. The remainder is available for A's consumption. This conceptualization enables us to predict:

1. The maintenance of the hierarchy may take different forms. A (the apex group in the party hierarchy) can keep B_1 and B_2 (the 'subjects') content by sharing with them the surpluses generated from the transactions A has ordered. Alternatively, to save transaction costs (in the short run), A can make liberal use of the coercive power of the state. The result is a 'police state'.

2. A is in a position to extract surplus from all the transactions under the state control. To increase the source of surplus, A pushes to widen state ownership of the means of production. On the other hand, the extracted surplus – after the subtraction of transaction costs – exceeds what the apex group can personally consume. A is then free to indulge in large scale economic or social experiments, often for the purpose to legitimize its authority. As well, A's utility saturation and A's limited information processing capacities limit the initiation of new activities and 'distort' their configuration. The economy suffers from violent swings without an undercurrent of steady growth.

3. The activities in the economy are organized to facilitate the extraction of surplus by the apex. Planning, hierarchical decision making, bias towards large scale activities are expected not only for their technology economies but also for their transactional economies. In contrast, market transactions that bypass the authority reduce the pool of transactions from which the authority can extract surpluses. Use of the market is minimized.

The externalities of the socialist institutions are immense because the utilities of most of the populace enter into decision making only indirectly as transposed (and often under-weighed) arguments in the utility function of the apex group. In the long run production distortions, inequity, and low rates of growth become intolerable. The resistance by the populace raises the transaction costs to maintain the hierarchical control. As the recent events in Eastern Europe and in China

testify, the severity of the economic problems has forced the apex group in the socialist hierarchies to decree institutional changes. A partial recoupling of transactions in the market between transactors is allowed, offering an opportunity for entrepreneurs to organize activities. Unfortunately this creates a competition for surpluses between the apex and the newly freed entrepreneurs. With the apex group in the state hierarchy still wielding the state power, politics rather than economics is the principal arena of contest. Reforms are undercut by rampant opportunism in an environment where rules of conduct are often defined ad hoc by a person backed by state power.

Parallel analyses based on Schumpeterian economics and NI can also be carried out with regard to other important current issues such as the development of the third world. The *Handbook* – faithfully reflecting the research interests of scholars in the field – does not acknowledge them. Perhaps the challenge and the elegance of theoretical rigor is too hard to resist even for the practitioners of a supposedly 'applied', real life field. Without belaboring the point any further, a broadly construed NI unencumbered by AM and NIO appears to me to deserve a field of its own.

References

Asch, Peter (1983) *Industrial Organization and Anti-trust Policy*. New York: John Wiley.

Coase, R. H. (1988) *The Firm, the Market and the Law*. Chicago: University of Chicago Press.

de Jong, H. W. (1986) 'European Industrial Organization: Entrepreneurial Economics in an Organizational Setting', in de Jong, H. W. and Shepherd, W. G. (eds.), *Mainstreams in Industrial Organization*. Dordrecht: Kluwer Academic Publishers.

Greer, Douglas (1984) *Industrial Organization and Public Policy*. New York: Macmillan.

Jacquemin, Alexis (1987) *The New Industrial Organization: Market Forces and Strategic Behavior*. Cambridge: MIT Press.

Leibenstein, Harvey (1987) *Inside the Firm: The Inefficiencies of Hierarchy*. Cambridge: Harvard University Press.

Needham, Douglas (1978) *The Economics of Industrial Structure, Conduct and Performance*, New York: St. Martin's Press.

Nelson, Richard and Winter, Sidney (1982) *An Evolutionary Theory of Economic Change*, Cambridge: Harvard University Press.

Schmalensee, Richard (1988) 'Industrial Economics: An Overview', *Economic Journal* **98**, 643–681.

Scherer, F. M. (1980) *Industrial Market Structure and Economic Performance*. Boston: Houghton Mifflin.

Schumpeter, Joseph (1942) *Capitalism, Socialism and Democracy*. New York: Harper and Row.

Shen, T. Y. (1988) 'New Institutionalism and the Erosion of Capitalism', *Journal of Behavioral Economics* **17**.

Shen, T. Y. (1990) 'Transaction Costs, Behavior Modes and Chinese Reform', *Journal of Behavioral Economics* **19**.

Shepherd, William (1979) *The Economics of Industrial Organization*. Englewood Cliffs: Prentice Hall.

Williamson, Oliver (1975) *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.

Williamson, Oliver (1980) 'The Organization of Work: a Comparative Institutional Assessment', *Journal of Economic Behavior and Organization* **2**, 5–38.

Williamson, Oliver (1985) *The Economic Institutions of Capitalism*. New York: Free Press.