competitive market processes. 1. Do fully competitive price signals from intense rivalry in the market justify the moral sentiment of lasssee-faire? On grounds of distributive justice among risk-takers, the answer has generally been 'yes' throughout the history of economic analysis.

In considerations of optimum economic efficiency, however, the answer seems to have become more difficult over the course of development. The cheapening of commodities witnessed by the classical economists is the most virtuous example of efficient competitive market processes in which the distribution of returns tends to be equalized. Against the theoretical standard of perfect competition, non-price forms of competition came to be viewed in the 1930s as second-class virtues - imperfectly or monopolistically competitive practices.

Queens of intervention on grounds of allocative inefficiency have continued to hang on the existence of classical monopoly profits. By the 1970s, the weight of empirical evidence and the acknowledged fact of intensified global competition served to eliminate the credibility of the market concept derived from perfect and imperfect competition (see Demsetz, 1973, 1982).

At a more fundamental level, Joan Robinson was persuaded to abandon imperfect competition in favour of trying to more fully develop a classical line of analysis only partially worked out by the classical economists and largely ignored ever since (see Clifton, 1977).

Yet, after a decade of deregulation and the strongest sentimentality to let the free market reign, evidence of static and dynamic inefficiencies in industry is accumulating (Business Week, 1986). Has the sheer intensity of competition in the rate of economic change and the pace of economic life become so severe as to hinder economic efficiency even under the strongest possible tendencies to equalized returns in the market? Competition, however complex and full of discontinuities, is still evident as a systematic and general force in the empirically observed fact that accounting rates of return across firms and industries tend toward uniformity over time.

This dynamic tendency is stronger among larger than smaller firms and is stronger today than a century ago (see Singh and Whittington, 1968 chapter 6; Brezon, 1970, 1971, 1982, pp. 239-40). But it is not explained by the neoclassical theory of perfect competition, which requires atomism of independent agents under static premises of maximization. It is not explained by imperfect or monopolistic competition for stable positions of some degree of monopoly power are less and less in evidence all the time. Yet this dynamic tendency is not associated with any optimum or unique state of industrial efficiency, as under perfect competition. Finally, the intensity of competitive rivalry that leads to this tendency cannot be measured by neoclassical standards - the number of firms in a market. It exists primarily under market conditions of concentrated oligopoly.

It seems pointless to try to reconstitute the general theory of competitive value by still more a priori game theorizing which only adds to the false perception of indeterminacy and lack of systematic generality in 'price behaviour' under contemporary market conditions. A recent alternative has been to apply the theory of perfect competition (see Mas-Colell, 1980). What used to be a static state of affairs distinguished by the absence of any and all rivalry is now a non-cooperative equilibrium, independent of the number of agents, that may entail dynamic strategies of M periods contingent on past history.

This re-introduces the long forgotten classical principle that interdependent, dynamic rivalries are what lead to the tendency toward uniformity in returns across the price system.

A possible virtue of the approach is that not all games need have positive sum outcomes, so the question of competitive rivalry and economic efficiency is left open, not closed as in the pure neoclassical doctrine of perfect competition.

With all the intellectual baggage imposed by perfect and imperfect competition, however, is it not preferable to start fresh by examining and explaining in classical price-theoretic terms that systematic empirical tendency toward uniformity in returns? The first point is that the institutional conditions for free capital mobility in the industrial context of fixed capital have developed gradually and progressively over the course of economic development during the past two hundred years. They are to be found in the first instance not in the atomistic enterprise but in the evolution of the organizational structure and competitive strategies of large, retailers which in a, the industrially and geographically diversified, publicly held corporations. Top management in industry has increasingly assumed the role once reserved for bankers in day-to-day affairs, moving capital from areas of lower to areas of higher returns.

When finance is committed to industry as fixed capital, it is at once immobilized for its economic life. It does not have the character of putty which enables it to be moulded for any use promising today's highest return in the market. The greatest barriers to capital mobility existed for the single factory enterprise which typified organizational structures in the United States in the 1840s. Railroad firms created the first degree of capital mobility directly within the enterprise by pioneering the coordinated, multi-unit organization. From the 1890s on, a degree of capital mobility across industries was added by integrated manufacturing companies and by mass retailers. Truly diversified industrial corporations began appearing in the 1920s and by the 1930s, mass retailers were national in scope (see Chandler, 1977, for a definitive history).

Beyond these structural elements in the development of capital mobility in the firm, the number of competitive strategies available to it from economies of large-scale organization and the intensity of the search for competitive advantage available from large budgets and staffs have also increased. Product innovations from a permanent R&D staff, advertising campaigns, takeovers and divestitures, together with price and credit competition give the firm added flexibility in responding to changes in market conditions and in initiating them.

Free capital mobility is not synonymous with the ability of atomistic firms or individual agents to move freely throughout the economy, whatever utopian analogies with a system of perfect liberty and individual freedom that may conjure up... What matters is the freedom of capital, however organized, so to move. As theoretical constructs, perfect and imperfect competition left a vision of capitalist development that is at complete odds with the actual historical development of conditions of free capital mobility. In this view, barriers exposed from atomistic competition, barriers to free capital mobility have grown with the evolution of large corporations, and the system has become less competitive, not more competitive.

Even beyond considerations of corporate organization and strategy, free capital mobility is nowhere more fully developed in history than in the institutions of today's capital markets. Ever more integrated on a world scale, even more innovative in the range of 'products' and services offered, the large firms which dominate these markets have such powerful and encompassing informational networks as to approximate the economic assumption of perfect information in the short run, if not rational expectations in the long run.
The acceptance of market processes in ever more spheres of human existence beyond basic needs is a third sense in which free capital mobility is more highly developed today. Scale-economies in automobile production are not barriers to entry into new fields of endeavour like the child care industry. Finally, with the growth of labour-intensive services as a proportion of the economy, more businesses take on the characteristics of merchant capital once again in history since even learned human capital is more malleable than fixed stock.

2. Beyond considerations of free capital mobility in explaining the uniformity in returns are other key issues that fall outside the scope of perfect and imperfect competition, whether or not amalgamated with game theory.

The today's oligopolistic firms are the slaves of the market as never before in history, in what sense are they 'pure price takers'? Such corporates are entirely unable to dictate their ex post rate of return in the market, whatever their ex ante pricing behaviour. It is with the ex post rate of return that the theory of competitive price is concerned, and that will be determined by many forms and intensities of competitive behaviour in the market, of which a suggested mark-up ex ante is only one. Partial equilibrium mark-up theories have never comprehended the difference between ex ante and ex post rate in pricing; exchange creates a difference in price and pricing discretion implies some degree of ex-post monopoly power.

The very interdependence in decision-making between oligopolistic firms is what causes that both flow of business and profits across firms, industries and markets so as to render the ex post rate of return fully competitive and beyond the control of the individual firm. Unfortunately, game theory was used for decades to deny the generality of contemporary competitive behaviour rather than to explain its most systematic feature in the convergence of accounting rates of return over the long run.

A virtue of the neoclassical theory of perfect competition was to provide a readily quantifiable means of measuring the intensity of competition - by the number of firms in a market. In consideration of non-price forms of competition, this precision in economic theory became lost, appearing in lieu of theory as an industrial organization 'paradigm' of market structure and conduct and performance. Can quantitative precision be resurrected in a general theory of competitive value for the modern age?

Observation tells us that the intensity of rivalry in contemporary markets can be measured by the frequency and scarcity of changes in market conditions - the sum total of strategic moves and counter-moves made by firms in that market per unit of time. The common denominator among all types of competition is what measured degree does the action move business and profits from one sphere to another or one firm to another?

The market is a clear analogy to perfect competition that can be made here. Were oligopolists in a market limited to the type of action an atomistic firm entering that market could take, pure price taking behaviour would emerge as the frequency of such strategic moves and countermoves increased without limit. Price for a homogeneous good would be bid down to its normal competitive minimum not by unlimited entry by one or more small firms, but by an unlimited number of atomistic-like strategic moves by the competing oligopolists.

Game theory to date appears to have overlooked the primacy of numbers of actions in the marketplace over numbers of actors in resurrecting the general theory of competitive value, on measuring the intensity of competition as the frequency of strategic moves and countermoves in the first instance.

Of course, large firms are not restricted to atomistic competition. Cut-rate 'two percent' financing by General Motors Corporation in August 1986 was a competitive move that had the potential to draw a great amount of business and profits away from other firms. Per that reason, this voracious move was imitated quickly by Ford and Chrysler.

Competition in the personal computer market has been intense not only because of voracious price breaks from time to time, but because the frequency of changes in market conditions has been enormous from real and cosmetic innovations in hardware and software. The frequency of competition among the commercial television networks in changing the time slots of programmes has at times approached the irrational from the consumer's standpoint.

3. When market processes are intensely competitive in the frequency, voracity or complexity of strategic moves and countermoves applied, what will be the nature of decision-making by the individual firm? Does active rivalry in the market necessarily mean 'maximizing behaviour', optimally related to the firm's demand relations at the margin?

One strong answer to the question is the rejection of the marginal method and the assumption of constant returns to scale in recent classical general equilibrium models of competitive price determination (see Sraffa, 1960). If maximizing behaviour underlies the classical approach, it certainly is not of pure neoclassical vintage, for decision-making at the margin requires marginal units which, according to Sraffa, are 'nowhere to be found' in the pure classical theory of competitive value.

Nor is any notion of maximization or optimal efficiency to be found in the statement of technology or 'production function' of the pure classical system. The technology is not specified by input-output coefficients, which imply minimum input per unit of output. Only viability conditions for each industry at a given scale of output are listed. Viability is not the same thing as optimum efficiency in the use of a technique of production, whether under conditions of simple reproduction or the production of a surplus.

The entirely unsophisticated requirements for specifying technology in the classical determination of competitive value is an advantage, because it formally leaves open the question of whether fully competitive price behaviour in ongoing market processes is always efficient.

The empirically observed tendency of accounting rates of return to converge in the long run seems more assuredly decision-making by oligopolists where the intensity of competitive behaviour is asymmetric around a normal or average rate of profit. Whether from creditor or stockholder arm's-length, team pride or the threat of takeover, firms whose performance is below the normal rate of return are under stronger pressure to improve profitability than those whose performance is above the norm (see Cyert and March, 1956).

Further, the attributes of intensely competitive market processes cause decision-making by the firm facing such discontinuities and complexities in its external environment to be the kind of 'bounded rationality' highlighted in the administrative theories of decision-making for different humans and their internal characteristics of large organizations (see Simon, 1947).

The paradox of how 'maximum' effort or greater and greater rivalry directed through market processes can result in sub-optimal outcomes is precisely the question the business world, especially in America, seems to be asking itself today (see President's Commission, 1985). While associated with even stronger and faster movements to capture new markets or eliminate excess profitability than less intensely competitive
behaviour in bygone eras, classifying it as 'maximizing behaviour' or 'satisficing' can only lead to confusion. The former implies efficiency where no such implication is warranted a priori, while the latter implies an absence of highly energetic behaviour from constantly striving, an implication at complete odds with the facts. A more neutral term like 'competitive behaviour' seems preferable.

4. If fully competitive price signals can exist under different degrees of industrial efficiency, then the moral sentiment of laissez-faire is not so readily justified in a competitive free enterprise system. Welfare economics must focus on competition as both virtue and vice, rather than competition as virtue and monopoly as vice, as in the past fifty years. Consider Figure 1, which relates the intensity of competition to the degree of economic efficiency. In modern economic doctrine there are three unambiguous situations: pure monopoly (point γ), perfect competition (point α) and the long run shutdown point beyond which a firm cannot cover its total costs (point φ).

In the context of a single industry, ruinous competition is rightly viewed as self-correcting by market forces. Therefore, the entire scope of economic investigation is believed to have been between θ and β. The curve α π expresses the sentiment that the more competition the better for efficiency as measured by the rate of return. The curve γ π expresses the proposition that the more competition, the lower the degree of monopoly, and the stronger the tendency toward uniformity in returns around a normal rate of profit. All inefficiency is due to the absence of competition in sufficient degree, and may be measured as social welfare losses like the area γ σ π.

The principle justification for laissez-faire through history has been that 'competition without limit' must always enhance the general welfare by improving static or dynamic efficiencies, as expressed in the positive slope of α π. Competition in effect can never become so intense, or of a character or complexity, that it pushes a market or an economic system beyond point p in the long run. In neoclassical theory, this is expressed as an increase in the number of firms without limit tending to produce a state of perfect competition.

Yet once we admit that ruinous competition has existed in history, is there no range of sub-optimal competitive behaviour between θ and φ? Competition that is sufficiently intense to bid away all excess profits, but too intense to maximize efficiency and the general welfare? Fully competitive market processes that lead to sub-optimal outcomes - zero sum or even negative sum games?

If and only if such business practices are isolated in one or a few markets will they be self-correcting by the market. If they are, or have become, systemic throughout the economy, there is no reason to believe they will be self-regulating in the market in a way which leads to movement from a position like δ to the unique point of optimum efficiency associated with equality of returns, π.

I submit that today's general competitive equilibrium in resource allocation lies at a point like δ and that the free enterprise system in an atmosphere of laissez-faire is experiencing social welfare losses of the form α μ δ, not of the form π μ γ from monopolistic distortions.

There is no distortion in price signals associated with contemporary social welfare losses. They exist in a climate of intensely competitive market processes where the tendency toward equality of returns is stronger, not weaker. The real issue is becoming whether all this incessant change still represents a Schumpeterian process of creative destruction or an inefficient process of 'destructive creations'.

Free capital mobility has become so highly developed in financial markets and top management behaviour in corporations that it has led to the virtual collapse of the long period in setting aspiration levels for the rate of return on real capital formation in industry. This increase in the intensity of competition is generating an ongoing bias against efficiency-enhancing forms of strategic corporate behaviour in favour of stop-gap or crisis management forms of competition such as 'asset juggling', which does not affect the quality of products or the efficiency with which they are produced, distributed and sold.

The rate of change in and complexity of market conditions to which the firm must respond strategically has accelerated, not only in product and input markets, but also in economic policy variables here and abroad. The intensity of these competitive pressures is leading to the creation of corporate cultures that are very risk averse, and to decision-making of strictly bounded rationality that, however energetic, can hardly be called 'maximizing behaviour'.

The growing inability to protect positions of differential rent or supra-normal profits for a period necessary to sustain some of the most productive forms of risk-taking entrepreneurial behaviour is caused by the very intensity of competition in contemporary market processes. The crowding out of these Schumpeterian forms of dynamically efficient market processes is a third social welfare loss that exists in today's laissez-faire atmosphere.

The capitalization of finance on pure finance rather than real asset creation has become almost an epidemic of market processes that are of dubious value to the general welfare and that, moreover, increase the cost of capital for productive uses. For example, the increase in takeover divestiture type activities is associated with the creation of a distinct market for corporate control which simply changes the distribution of ownership and/or control of existing productive assets.

5: All seem to be agreed that competition has become more intense in recent decades and especially in recent years. I continue to maintain, as well, that there has been a secular increase in the intensity and complexity of competition over
the course of capitalist development and that the free enterprise system continues to develop fundamentally along the lines of ever greater capital mobility.

But it is also my contention that over the course of capitalist development and especially evident in recent years in America, the intensity of competition has become so great as to hinder industrial efficiency. Change for the sake of change rather than for economic and social progress. Competition, that engine of prosperity that has propelled us forward for two centuries, now seems to be of a character that it is holding us back.

This suggests a very different role for economic doctrine and public policy than either laissez-faire or the regulation of monopolistically competitive practices. It implies that intervention in the market which reduces the intensity or scope of certain fully competitive practices will not inerrably lead to protected positions of monopoly or associated inefficiencies. Intervention may in all probability enhance economic growth or improve statical resource allocation while fully maintaining that attribute of distributive justice among risk-takers, insofar as the equality of returns is concerned, that is the hallmark of capitalism and freedom.

J.A. Clifton

See also COMPETITION; COMPETITION: AUSTRIAN CONCEPTIONS; COMPETITION: CLASSICAL CONCEPTIONS; COMPETITION: MAXEAN CONCEPTIONS.

BIBLIOGRAPHY
Business Week. 1956. The hollow corporation. 3 March.

computation of general equilibria. The general equilibrium model, as elaborated by Walras and his successors, is one of the most comprehensive and ambitious formulations in the current body of economic theory. The basic ingredients with which the Walrasian model is constructed are remarkably spare: a specification of the asset ownership and preferences for goods and services of the consuming units in the economy, and a description of the current state of productive knowledge possessed by each of the firms engaged in manufacturing or in the provision of services. The model then yields a complete determination of the course of prices and interest rates over time, levels of output and the choice of techniques by each firm, and the distribution of income and patterns of saving for each consumer.

The Walrasian model is essentially a generalization, to the entire economy and to all markets simultaneously, of the anciant and elementary notion that price levels equilibrate supply and demand. No intellectual construct of this scope, designed to address basic questions in a subject as complex and elusive as economics, can be described as simply true or false—in the sense in which these terms are used in mathematics or perhaps in the physical sciences. The assertions of economic theory are not susceptible to crisp and immediate experimental verification. Moreover, the Walrasian model disregards obvious aspects of human motivation which are of the greatest economic significance and which cannot be addressed in the language of our subject: economic theory is mute about our affective lives, about our opposing needs for community and individual assertion, and about the non-pecuniary determinants of entrepreneurial energy.

There are, in addition, aspects of economic reality which are capable of being described in the framework of the Walrasian model but which must be assumed away in order for the model to yield a determinate outcome. Uncertainty about the future is an ever-present fact of economic life, and yet the complete set of markets for contingent commodities required by the Arrow-Debreu treatment of uncertainty is not available in practice. Economics of scale in production are a central feature in the rise of the large manufacturing entities which dominate modern economic activity; their incorporation into the Walrasian model requires the introduction of non-convex production possibility sets for which the competitive equilibrium will typically fail to exist.

In spite of its many shortcomings, the Walrasian model—used with tact and circumspection—is an important conceptual framework for evaluating the consequences of changes in economic policy or in the environment in which the economy finds itself. The effects of a major shock to the economy of the United States—such as the four-fold increase in the price of imported oil which occurred in late 1973—can be studied by contrasting equilibrium prices, real wages and the choice of productive techniques both before and after the event in question. Generations of economists have used the Walrasian model to analyze the terms of trade, the impact of customs unions, changes in tariffs and a variety of other issues in the theory of International Trade. And much of the literature on the field of Public Finance is based on the assumption that the competitive model is an adequate description of economic reality.

In these discussions the analysis is frequently conducted in terms of simple geometrical diagrams whose use places a severe restriction on the number of consumers, commodities and productive sectors that can be considered. This is in contrast to formal mathematical treatments of the Walrasian model, which permit an extraordinary generality in the elaboration of the model at the expense of immediate geometrical visualization. Unfortunately, however, it is only under the most severe assumptions that mathematical analysis will be capable of providing unambiguous answers concerning the direction and magnitude of the changes in significant economic variables,

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