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PRODUCT DIFFERENTIATION AND ECONOMIC PROGRESS

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ABSTRACT: In neoclassical theory, product differentiation provides consumers with a variety of different products within a particular industry, rather than a homogeneous product that characterizes purely competitive markets. The welfare-enhancing benefit of product differentiation is the greater variety of products available to consumers, which comes at the cost of a higher average total cost of production. In reality, firms do not differentiate their products to make them different, or to give consumers variety, but to make them better, so consumers would rather buy that firm's product rather than the product of a competitor. When product differentiation is seen as a strategy to improve products rather than just to make them different, product differentiation emerges as the engine of economic progress. In contrast to the neoclassical framework, where product differentiation imposes a cost on the economy in exchange for more product variety, in reality product differentiation lowers costs, creates better products for consumers, and generates economic progress.

In the neoclassical theory of the firm, product differentiation enhances consumer welfare by offering consumers greater variety, but that benefit is offset by the higher average cost of production for monopolistically competitive firms. In the neoclassical framework, the only benefit of product differentiation is the greater variety of products available, but the reason firms differentiate their products is not just to make them different from the products of other firms, but to make them better. By improving product quality and bringing new

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products to market, product differentiation is the engine of economic progress. The economics literature has clearly recognized the benefits that product differentiation brings with it in the form of a greater variety of products, but has not recognized the role that the process of product differentiation plays in generating economic progress.

The neoclassical theory of the firm differentiates competitive firms from monopolies (and considers many variants in between), but assumes that the market structure is exogenous, even while demonstrating the advantages to firms of having market power. In contrast to this theoretical world, real world firms can take actions to produce market power for themselves, so market structure is not exogenous. The most effective competitive strategies for firms consist of finding ways to differentiate their products and otherwise give themselves some degree of market power, not minimizing the cost of producing a homogeneous product, as the neoclassical competitive framework suggests. This entrepreneurial element of the competitive firm—which is necessary for the firm to survive—is missing from the neoclassical framework.[1]

The profit-maximizing strategy that neoclassical theory describes for competitive firms will not maximize firm profits in a real-world competitive environment. Seeking economic profits by gaining market power is the profit-maximizing competitive strategy. This has been recognized in managerial economics textbooks at least since Porter (1980), but product differentiation as a competitive strategy has not migrated into the mainstream of neoclassical microeconomics. Managerial economics focuses on profit-maximizing strategies for firms rather than on implications for the economy as a whole. In microeconomic theory textbooks, pure competition, which is the market structure that maximizes social welfare, rules out product differentiation by assumption.

Neoclassical economics recognizes the advantages of product variety that product differentiation brings with it but also argues that markets with differentiated products do not produce at minimum average total cost. There is a trade-off of higher cost for more variety. But this literature looks at product differentiation in a static framework, ignoring a larger advantage of product differentiation: it brings with it improvements in products that generate economic progress. In the real world,

[1]When I took my first economics course, the textbook, McConnell (1966, p. 24–25), said there are four factors of production: land, labor, capital, and entrepreneurship. By the time I got to graduate school in economics, all books, articles, etc., said $Q=f(K,L)$, and there were only two factors of production left: labor and capital. I think it is fair to ask what happened to those other two factors of production!

product differentiation results in innovation, which generates economic progress and leads to lower average costs, not higher ones, as the neoclassical model indicates. While it is true that the product variety generated by product differentiation increases welfare, the economic progress that results from product differentiation is much more important to social welfare than the variety that product differentiation produces.[2]

The main point of this paper, as its title indicates, is that product differentiation is the engine of economic progress. The paper begins by recognizing, along with the standard literature, the benefit of greater variety that product differentiation brings. It then demonstrates that product differentiation is an essential strategy for firms in competitive markets. The key argument is that product differentiation improves the quality of products offered to consumers, lowers the cost of production, and generates economic progress. While the benefits of variety are generally recognized, the essential role of product differentiation in the generation of economic progress has been overlooked, both in the neoclassical and the Austrian literature.

PROFIT MAXIMIZATION AND MARKET STRUCTURE IN THE NEOCLASSICAL FRAMEWORK

In the neoclassical theory of the firm, firms are run by managers who maximize profits by finding the optimal combination of inputs and producing the optimal quantity of output. The firm's production function is given as $Q=f(K,L)$, and the firm's only task is choosing the correct quantities of K and L. Pindyck and Rubinfeld (2005, p. 265) say, "To maximize profit, the firm selects the output for which the difference between revenue and cost is the greatest." After explaining short-run profit maximization in detail, Pindyck and Rubinfeld (2005, p. 282) discuss long-run profit maximization, noting that "*the long-run output of a profit-maximizing competitive firm is the point at which long-run marginal cost equals the price*."[3] Besanko and Breautigam (2005, p. 305) echo Pindyck and Rubinfeld, saying, "*a price-taking firm maximizes its profit when it produces a quantity Q* at which the marginal cost equals the market price*." Note that

[2]Institutions matter, and as Baumol (1990) notes, welfare-maximizing behavior on the part of firms holds only when institutions allow for free exchange and protection of property rights, and do not constrain how individuals may allocate the resources they own.

[3]Emphases (italics and boldface) in this and all other quotations that follow are in the original quotations.

Besanko and Breautigam refer to the firm as a price-taker, in contrast to Pindyck and Rubinfeld's characterization of a competitive firm.

Pindyck and Rubinfeld further note (2005, p. 283) that "in competitive markets economic profit becomes zero in the long run." Further explaining (2005, p. 285), they say,

> Why does a firm enter a market knowing that it will eventually earn zero profit? The answer is that zero economic profit represents a competitive return for the firm's investment of financial capital. With zero economic profit, the firm has no incentive to go elsewhere because it cannot do better financially by doing so. . . . The idea of an eventual zero-profit long-run equilibrium should not discourage the manager—it should be seen in a positive light, because it reflects the opportunity to earn a competitive rate of return.

Besanko and Breautigam (2005, p. 335) say, "we have seen a key implication of the theory of perfect competition: Free entry will eventually drive economic profit to zero. This is one of the most important ideas in microeconomics."

Meanwhile, those same textbooks describe monopolists as being able to price above marginal cost and being able to potentially earn economic profits as long as the firm's monopoly profits can be sustained. Besanko and Breautigam (2005, p. 414) note that "the monopolist's profit-maximizing price exceeds the marginal cost of the last unit supplied" and (2005, p. 412) that "the monopolist's economic profits can be positive. This is in contrast to a perfectly competitive firm in long-run equilibrium"

Right away, one should notice a major inconsistency in the way that these textbooks outline profit-maximizing strategies for competitive and monopolistic firms. Why should a manager be content to earn a competitive rate of return, when, if the manager can find a strategy to gain some monopoly power, the firm can earn a higher rate of return? Contrary to the textbook advice, the profit-maximizing competitive strategy is not to minimize average total cost and be content with normal profits in the long run, but to look for ways to gain monopoly power, because those same textbooks say that monopolists can earn positive economic profits. The only way this advice to those who run competitive firms could be correct is if market structure is exogenous, and firms in competitive industries have no way to gain any monopoly power. But, as explained in more detail below, this is not the case. Competitive firms can gain some monopoly power by differentiating their products.

Besanko and Breautigam (2005, p. 351) go on to note, "*profit maximization implies cost minimization*." Varian (2003, p. 345) echoes this observation, saying "It turns out to be convenient to break the profit-maximization problem into two stages: first we figure out how to minimize

the costs of producing any desired level of output y, then we figure out which level of output is indeed a profit-maximizing level of output." Perloff (2004, p. 267) says, "To maximize profit, all firms (not just competitive firms) must make two decisions. First, the firm determines the quantity at which its profit is highest. Profit is maximized when marginal profit is zero, or, equivalently, when marginal revenue equals marginal cost. Second, the firm decides whether to produce at all."

This neoclassical theory of profit maximization assumes that the firm is given a production function in which the nature of inputs and output are not under the control of the people who run the firm. The firm is not even able to alter any aspects of the production process, which is given by the parameters of the production function. All the firm can do, given its production function, the inputs it will use, and the output it will produce, is choose the quantities of inputs that will maximize profit.

In the real world the people who run firms can decide to purchase different inputs and to produce different outputs. They can decide to adopt different production processes. In short, firms can innovate by changing their production processes, including developing lower-cost methods themselves, but, more to the point of this paper, in the real world firms can choose to change the characteristics of their products in ways that they believe will make them more appealing to customers. The profit-maximizing strategy is not to minimize costs, but to create a differentiated product that gives the firm some market power. The differentiated product may even cost more to produce, but can increase profits if customers are willing to pay more to purchase it. As obvious as this seems, it is at odds with the way the neoclassical model depicts competitive markets, as illustrated by the quotations above, from leading microeconomics textbooks.

This is not a minor point. As Schumpeter (1943, p. 82) notes,

> The essential point to grasp is that in dealing with capitalism we are dealing with an evolutionary process. . . . Capitalism, then, is by nature a form or method of economic change and not only never is but never actually can be stationary.

If Schumpeter is correct in his description of a market economy, it is an inadequate defense of the neoclassical equilibrium framework to argue that it describes the way things will settle out in equilibrium, because a static equilibrium outcome will never be descriptive of the real-world economy. Whereas the neoclassical framework assumes that competitive markets are characterized by homogeneous products, thus assuming away product differentiation, in the real world product differentiation is

one of the most significant competitive strategies used by firms in competitive markets.

PRODUCT DIFFERENTIATION IN THE NEOCLASSICAL FRAMEWORK

In the neoclassical framework, product differentiation is depicted as creating downward-sloping demand curves for monopolistically competitive firms. Product differentiation imposes a cost on the economy because firms do not produce at minimum average total cost, but there is a benefit of greater product variety available to consumers. A welfare analysis of product differentiation involves weighing the higher cost of production in monopolistically competitive firms against the benefit of greater variety.

Discussing product differentiation, Pindyck and Rubinfeld (2005, p. 439) say,

> Any inefficiency must be balanced against an important benefit that monopolistic competition provides: *product diversity*. Most consumers value the ability to choose among a wide variety of competing products and brands that differ in various ways. The gains from product diversity can be large and may easily outweigh the inefficiency costs resulting from downward-sloping demand curves.

Echoing that, Perloff (2004, p. 470) says, "Although differentiation leads to higher prices, which harm consumers, differentiation is desirable in its own right. Consumers value having a choice, and some may greatly prefer a new brand to existing ones." Varian (2003, p. 454) notes that firms

> may find it profitable to enter an industry and produce a similar but distinctive product. Economists refer to this phenomenon as *product differentiation*—each firm attempts to differentiate its product from the other firms in the industry. The more successful it is at differentiating its product from other firms selling similar products, the more monopoly power it has.

In a graduate level text, Mas-Colell, Whinston, and Green (1995, p. 396) note that "in the presence of product differentiation, equilibrium prices will be above the competitive level."

Browning and Zupan (2003, p. 314) consider product differentiation as a source of monopoly power, saying,

> Consumers may perceive the product sold by an incumbent firm to be superior to that offered by prospective rivals. Based on this perception, consumers are willing to pay more for the incumbent

> firm's product. For example, Ray-Ban sunglasses may be sufficiently differentiated in consumers' eyes to give the company some pricing latitude over potential competitors—even though the competitors have access to the same production technology.

These quotations square well with a subjective theory of value, because Browning and Zupan note that the differentiation is based on the perception of a difference, even though firms have access to the same production technology.

Frank (2003, p. 507) offers more insight on the phenomenon of product differentiation, noting,

> An additional factor that limits the usefulness of the excess-variety conclusion is that it is based on a purely static model of the world . . . the process that leads to these varieties has stimulated extraordinary technological innovation. . . . The fruits of this innovation would have to be accounted for in a more complete comparison of optimal and equilibrium amounts of variety.

Frank (2003) correctly notes that product differentiation does not just produce variety, it produces innovation and progress, but he notes that this "would have to be accounted for in a more complete comparison," rather than actually undertaking that comparison.

Discussing monopoly profits, Pindyck and Rubinfeld (2005, p. 359) explain in a standard way the inefficiency that results from monopoly, saying, "Even if a monopolist's profits were taxed away and redistributed to the consumers of its products, there would still be an inefficiency because output would be lower than under conditions of competition. The deadweight loss is the social cost of this inefficiency." But if the monopoly profits are a result of an innovation that makes purchasers want that firm's product more than the products of its competitors, the profit is a return to innovation and not an inefficiency. In the purely static, neoclassical framework, any price above minimum average cost generates an inefficiency, but when differentiated products leading to monopoly profits are the result of innovation, they are a sign of efficiency—the return to innovation—not inefficiency. Those profits would be the reward to firms that were able to provide more value at a lower cost to their customers. Without those profits there would be no incentive to bring innovations to market, and—equally significant—there would be no market indicator that the innovations actually added value.

Varian (2003, p. 426) says, "consumers will typically be worse off in an industry organized as a monopoly than in one organized competitively. But, by the same token, the firm will be better off!" Again, this holds true in the static setting of neoclassical equilibrium economics, but in

the real world monopoly profits go to firms that are able to differentiate their products so that customers want those products rather than the products of other firms. Varian's conclusion holds if market structure is somehow exogenously determined, or if government restrictions on competition create monopolies. It would not hold if innovations generated by the firms themselves when trying to maximize their own profits produced the monopoly power.

Frank (2003, p. 406) says about competitive equilibrium, "Both long-run and short-run equilibrium positions are efficient in the sense that the value of the resources used in making the last unit of output is exactly equal to the value of that output to the buyer. This means that the equilibrium position exhausts all possibilities for mutually beneficial exchange." If this were true, in long-run equilibrium, economic progress would cease. In fact, firms are always looking for new opportunities to provide differentiated goods and services to customers, and, Frank's description of competitive equilibrium notwithstanding, it is inconceivable that "all possibilities for mutually beneficial exchange" will ever be exhausted. Competitive behavior on the part of firms involves finding those previously undiscovered possibilities for mutually beneficial exchange before competing firms do.[4]

PRODUCT DIFFERENTIATION IN THE AUSTRIAN FRAMEWORK

The Austrian analysis of product differentiation mirrors the neoclassical analysis. For example, Rothbard (2004, p. 720–38) has a lengthy analysis of imperfect or monopolistic competition, mostly devoted to discussing why the arguments that monopolistically competitive firms have excess capacity and price above minimum average total cost are irrelevant or wrong. He devotes only a sentence (2004, p. 729) to recognizing Schumpeter's views on progress, saying "In addition, Schumpeter has stressed the superiority of the 'monopolistic' firm for innovation and progress, and Clark has shown the inapplicability, in various ways, of this static theory to the dynamic real world." But he offers no further explanation and from there goes on to explain that cost curves are relatively flat, so pricing above minimum average total cost will mean a negligible increase in price anyway, and that a theory in which all firms have excess capacity is self-contradictory. Later, criticizing Galbraith's theories of affluence and consumption, Rothbard (2004, p. 976–88) again notes the advantages of variety offered by product differentiation, and does offer one

[4]Although this is not how neoclassical economics describes competition, it is consistent with Kirzner's (1973) view of competition.

sentence (2004, p. 987–88), "F.A. Hayek has pointed out the important function of luxury consumption of the rich, at any given time, in pioneering new ways of consumption, and thereby paving the way for later diffusion of such 'consumption innovations' to the mass of consumers." There are only a few sentences in Rothbard, referencing the work of Hayek and Schumpeter, suggesting the importance of product differentiation to economic progress, and Rothbard, like most of the mainstream, emphasizes the role of product differentiation in offering consumers a greater variety of consumption opportunities.

In the passage Rothbard cites, Hayek (1960, pp. 42–44) is discussing the importance of the growth of knowledge to economic progress, rather than product differentiation as a competitive strategy. His point (ibid., pp. 42, 44) is,

> The rapid economic advance that we have come to expect seems in a large measure to be the result of this inequality and to be impossible without it. . . . If today in the United States or western Europe the relatively poor can have a car or a refrigerator, an airplane trip or a radio, at the cost of a reasonable part of their income, this was made possible because in the past others with larger incomes were able to spend on what was then a luxury. . . . Many of the improvements would indeed never become a possibility for all if they had not long before been available to some.

Hayek offers great insight into the nature of economic progress, but without tracing it back to the firm's strategy of product differentiation.

Armentano (1990, p. 27) discusses monopolistic competition in static terms, concluding, "Once it is acknowledged that differentiated goods have subjective value that buyers are willing to pay for, perfect competition with homogeneous products can no longer be considered universally optimal or efficient." Similarly, Machovec (1995, pp. 181–88) discusses product differentiation in terms of "finding the best mix" of products, and concludes (ibid., p. 185) that the market economy, rather than government planning, can "*freely* coordinate the small pieces of information possessed by each agent so as, at each iteration, to experimentally adapt the current mix of goods in a way that improves the return to consumers." These Austrian scholars couch product differentiation within the framework of the advantages of a variety of goods for consumers, rather than discussing the role product differentiation plays in generating economic progress. Similarly, Mises (1998, p. 378) discusses imperfect competition as the ability of someone with a differentiated product to charge a higher price, but does not discuss product differentiation as a contributor to economic progress.

Kirzner (1973, pp. 112–25) is critical of the theory of monopolistic competition because of its equilibrium framework. He notes (1973, p. 115), "we can expect this disequilibrium constellation of product qualities, styles, sizes, color, packagings, and so on to change systematically under the influence of the market forces set in motion by the state of disequilibrium." He notes, with emphasis (1973, p. 115), that "*a variety of product qualities may be produced for no other reason than that equilibrium has not yet been reached*." He goes on to note (1973, p. 116) that product differentiation "may, once equilibrium has been reached, come to be shaken down into product uniformity." Kirzner goes on to contrast his vision of entrepreneurship with Schumpeter's—whose ideas are very consistent with those presented here—noting (1973, p. 127),

> For Schumpeter the entrepreneur is the disruptive, disequilibrating force that dislodges the market from the somnolence of equilibrium; for us the entrepreneur is the equilibrating force whose activity responds to the existing tensions and provides those corrections for which the unexploited opportunities have been crying out.

While Schumpeter's (1943) notion of creative destruction is very consistent with the notion of product differentiation presented here, Kirzner presents product differentiation as a potential sign of disequilibrium that may vanish once an economy reaches equilibrium.

The concept of product differentiation as the engine of economic progress is a Schumpeterian notion. But when one surveys the Austrian literature on product differentiation, the bulk of it is similar to the neoclassical literature in that it emphasizes the advantages to consumers of a variety of products, and overlooks the role of product differentiation as the engine of economic progress.[5] Schumpeter is the notable exception.

THE ADVANTAGE CONVEYED BY PRODUCT DIFFERENTIATION

The neoclassical model notwithstanding, no competitive advantage is conveyed merely by differentiating one's product. In the neoclassical equilibrium for monopolistically competitive firms, each firm just earns

[5]For another example, Salerno (2004) cites a 1933 book by Vernon Mund, who takes an Austrian approach to analyze the degree to which firms exercise monopoly power. But Mund, who Salerno (2004, p. 73) refers to as "a now obscure economist," in fact had little influence when compared to the ideas of Chamberlin (1933) and Robinson (1933), published in the same year, and although Mund takes a very Austrian approach to monopoly pricing, he does not emphasize product differentiation as a competitive strategy.

a normal economic profit, which is the same profit competitors earn, so there is no apparent payoff in profits from firms differentiating their products. In fact, undertaking any expense to differentiate one's product puts the firm at a competitive disadvantage, because, after the expense of product differentiation, product A is no more differentiated from B than B is from A. Thus, all firms share in any benefits from the product differentiation of other firms, and it would seem foolish for one firm to incur those costs. In the neoclassical framework, all product differentiation does is give consumers more choices, but no one firm has any incentive to raise its costs above those of its competitors to convey this benefit to consumers.

Perhaps a market with differentiated products might be larger in total than one with homogeneous products. If the market offers a variety of soft drinks, the total quantity of soft drinks sold in the market may be larger than if only one type were available. Nonetheless, in the neoclassical framework, firms in competitive and monopolistically competitive firms still only earn normal profits in the long run, giving no individual firm an incentive to undertake the cost of designing a differentiated product.

In fact, the reason firms differentiate their products is not to make them different, it is to make them better. What "better" means in this context is that consumers will be willing to pay enough more for the differentiated product to more than compensate the firm for its expenses to differentiate the product. Because it costs something to change the characteristics of a product, the product must convey a greater utility to the purchaser to make the product differentiation worthwhile. Of course, the expense might be undertaken to lower production costs, making the product less expensive for consumers while providing greater profit to the producer. Over time little changes in products create major improvements, and old product characteristics fall by the wayside, replaced by new and improved products, generating economic progress. This is the "creative destruction" that Schumpeter (1943, p. 81) argued is a fundamental characteristic of markets and competition.

Product differentiation does not give firms any advantage just because they have made their products different. Even in the neoclassical model, this just generates the same normal profits that characterize firms producing homogeneous products in competitive markets. Rather, the competitive advantage to product differentiation comes from making a product that purchasers want more than the products of competitors, and by improving their products to try to gain a competitive advantage, product differentiation is the mechanism by which firms generate economic progress.

COMPETITIVE STRATEGY AND PRODUCT DIFFERENTIATION

The behavior that the neoclassical theory of the firm describes as profit-maximizing will not, in fact, maximize profits. The profit-maximizing strategy of competitive firms is to differentiate their products to allow them to price above average total cost. The neoclassical theory of pure competition makes the assumption that firms in the industry produce homogeneous products so that the output of all the individual firms can be added up to get the total industry's output. But one must recognize that the homogeneous products that characterize competitive firms in this framework is an assumption that is made to allow aggregation within the model, it is not a conclusion about competitive behavior. To emphasize, the neoclassical model *assumes* that competitive firms are characterized by homogeneous products, it does not *conclude* that competition results in firms producing homogeneous products.

In fact, product differentiation is an important competitive strategy: a strategy that firms use to gain a competitive advantage over their rivals. Product differentiation makes markets more competitive, not less competitive, as the neoclassical model implies. In an industry with homogeneous products, all firms must do to remain "competitive" is minimize their costs, much as the neoclassical model describes. However, if one of the competitors differentiates its product to make it more desirable to consumers, other firms will lose customers, revenue, and profits until they can catch up. Even if they do catch up, they will once again only be earning normal profits. This is not a strategy for long-term success. Such a firm will either be earning normal profits, when caught up, or less than that if trying to catch up, so will always lag behind its rivals and may not be able to remain in business. In the real world of competition, a competitive firm will always be looking for ways to make its output more desirable than the output of other firms, differentiating its product to stay ahead of its competitors and earn profits. Through product differentiation firms attempt to increase their market shares, and try to create an environment in which they can set their prices above average total cost to earn economic profits. To the extent that they are successful, their competitors will lose customers, and along with them, profits.

Unlike the neoclassical model, where firms produce homogeneous products by assumption, actual market competition is characterized by firms always looking for ways to differentiate their products to make them more desirable to their customers. This product differentiation leads to innovation in the market, and this innovation produces the creative destruction described by Schumpeter. In real-world competitive markets, firms that do not innovate will continue to fall further behind

their competition, until what once were profitable businesses eventually become unviable.

Because markets are continually evolving as innovators find ways to produce products that are more appealing to consumers, a competitive firm that simply follows the neoclassical profit maximization strategy will eventually fail, being put out of business by competitors that differentiate their products and find other ways of increasing profits. Innovation—not cost minimization—is the optimal strategy for profit maximization. When one realizes that market structure is not exogenous, it becomes clear that profit maximization in competitive markets does not consist of minimizing costs, but rather of pursuing strategies that will gain competitive firms some monopoly power. The profit-maximizing strategy in the neoclassical, competitive model works only because of the assumption of homogeneous products. But that assumption is not descriptive of real-world competitive markets in which product differentiation is an important competitive strategy.

In the neoclassical model people who run firms are managers, and they manage their firms by finding the cost-minimizing combination of inputs to produce the profit-maximizing level of output. As Klein (1999) notes, the neoclassical theory of the firm is told from the perspective of the manager rather than the owner-entrepreneur. In the real world, profit-maximizing firms are run by entrepreneurs who look for new and better ways to produce output by lowering their costs, and by finding more desirable product characteristics to entice buyers to be willing to pay a price above average total cost for their products. A firm cannot remain in business by following the neoclassical, profit-maximizing strategy, because as entrepreneurial competitors find better production methods and improve product characteristics so that customers are more satisfied with their products, the neoclassical, profit-maximizing firm will fall increasingly further behind its competitors. Good management and effective entrepreneurship both help firms increase their profits, but over the long run, an entrepreneurial firm with less effective management can remain profitable by staying ahead of its competitors, while a well-managed firm without entrepreneurship is doomed to fail as it is overtaken by its more entrepreneurial rivals.

Sometimes product differentiation implies changing consumer perceptions as much as actual product characteristics, as Browning and Zupan (2003) note. Advertising can help do this. Are "Butterball" turkeys, or "Perdue" or "Tyson" chickens really that different from their competitors' products? Are there any real differences in brands of gasoline? If consumers did not think so, there would be no advantage to creating the brand. But sometimes small differences in products make big differences

to consumers. Why not buy a particular brand if it has a reputation for quality control, is perhaps more convenient to buy, or the seller is willing to stand behind its product in the way that a "generic" firm might not? Perhaps more significantly, if such slightly differentiated products gain one firm a competitive advantage, that gives other firms the incentive to create more value-enhancing differentiation to regain market share.

Is Wal-Mart a counter-example to the argument that product differentiation leads to profits, because it just sells the same products that can be purchased elsewhere? Wal-Mart's innovative methods of inventory control and store operation create a business model that differentiates its product by giving consumers low prices and a large selection of goods. Wal-Mart's innovations in the production of retail sales makes Wal-Mart similar to Ford's innovative assembly line in this regard. People could buy automobiles before they could buy Fords, but just not as cheaply.

By assuming that competitive firms produce homogeneous output, the neoclassical theory of the firm leaves out a key component of competition. Product differentiation is, in fact, necessary for competitive firms to survive. It should be an integral part of the theory of competitive markets, not assumed away. It also has important implications for the aggregate economy.

IMPLICATIONS FOR WELFARE ECONOMICS

In neoclassical welfare economics, as described well by Bator (1957) and Graaf (1957), social welfare is maximized in a competitive equilibrium where all firms produce at minimum average total cost, no firms earn economic profits, and no firms have monopoly power. In such an equilibrium, the theory claims that firms have no incentive to change their behavior. But following the reasoning in the previous section, there are two problems with this conclusion of neoclassical welfare economics. First, competitive firms always have an incentive to change their behavior by introducing innovations that give them a competitive advantage. If some firms innovate, all firms must, if they want to remain viable. Second, it is not cost-minimizing behavior on the part of firms that maximizes economic welfare, but the attempt to gain some monopoly power on the part of firms as they strive to earn economic profits by being able to price above their average total costs. The striving for monopoly profits leads firms to differentiate their products to make them more desirable to consumers. By differentiating their products and looking for ways to maximize profits by being able to charge prices above average total cost, firms innovate and create the economic progress that enhances economic welfare. Thus, it is monopolistic behavior—the

striving for economic profits through product differentiation—not cost-minimizing behavior that maximizes social welfare.

To see this, one must step outside the bounds of neoclassical welfare economics, where welfare is maximized by producing a Pareto optimal allocation of resources. Consider the improvements in actual economic welfare over the past 20, 50 or 100 years. Why are people better off now then they were a century ago? Surely, as Holcombe (2007) notes, the answer must be the tremendous economic progress that has occurred over that time, not that the economy is closer to a Pareto optimal allocation of resources. Without denying that moving closer to a Pareto optimal allocation of resources would improve welfare—by definition, because a Pareto improvement improves the welfare of some without reducing anyone's welfare—any movement toward Pareto optimality has had a minimal impact on actual welfare compared with the substantial economic progress that has occurred since the beginning of the industrial revolution. Neoclassical welfare economics notwithstanding, it is economic progress that maximizes social welfare, not allocating resources Pareto optimally.

Is welfare maximized when there are no profits in an economy, as is the case in a Pareto optimal competitive equilibrium? Schumpeter (1934, p. 154) writes, "without entrepreneurship there is no profit, without profit no development." If economic progress maximizes welfare, profit is necessary for the entrepreneurship that generates profit, so in contrast to neoclassical welfare economics where welfare is maximized when profits are zero, profits are necessary for welfare maximization. Competition through product differentiation in pursuit of profits thus leads to better products and higher economic welfare. Examples of cumulative improvements in product characteristics as a result of product differentiation in competitive markets—think of improvements in automobiles, telephones, and computers, for example—are so common that every reader will be familiar with the way in which product differentiation leads to better products and thereby enhances social welfare. Following the neoclassical terminology, monopolistic behavior, not competitive behavior, maximizes social welfare.

Institutions matter, and not all monopoly behavior is desirable. Rent-seeking for monopoly privileges (Tullock 1967; Krueger 1974) creates welfare losses by curtailing competitive economic activity. Profit-seeking through differentiation is a competitive strategy that generates economic progress and improves welfare. Stepping outside of the static, neoclassical framework, it becomes apparent that product differentiation does not impose a cost on the economy by raising the average total cost of firms. It lowers costs by encouraging firms to introduce lower-cost methods of

production and differentiated products that produce more value for the consumers who buy them.

A BROADER LOOK AT THE LITERATURE

The analysis that microeconomic theory has done on product differentiation stands in contrast to work that has been done barely outside the confines of academic economics. It is interesting to contrast, for example, Besanko, Dranove, Shanley, and Schaeffer (2004), a managerial economics textbook written for MBA students, with Besanko and Breautigam (2005), a microeconomic theory textbook, because the two books have an author in common. The former book discusses strategies to deter entry, creative destruction, incentives to innovate, and a host of other competitive strategies that can enable firms to gain market power and enhance their profits. Yet all of this is assumed away in the latter book, where the optimal strategy for competitive firms is depicted as minimizing costs and producing the profit-maximizing level of output. In Besanko and Breautigam (2005, p. 335), "Free entry will eventually drive economic profit to zero. This is one of the most important ideas in microeconomics." Yet Besanko et al. (2004, p. 424) note that "market forces are a threat to profits, but only up to a point. Other forces appear to protect profitable firms. . . . A firm may prosper indefinitely in an industry with intense pricing rivalry and low entry barriers." Why the contradiction? One would be reluctant to say that Professor Besanko is ignorant of information that is in his other book. The reasonable explanation is that Besanko and Breautigam (2005) report the accepted wisdom in microeconomic theory at the beginning of the twenty-first century, which does not incorporate the entrepreneurial aspects of decision-making within firms discussed in Besanko et al. (2004).[6]

Despite the fact that there is a broader literature that treats product differentiation as entrepreneurial and innovative, it has not found its way inside the core of microeconomic theory, so firms in that theory are limited in their activity to choosing the optimal mix of inputs and the optimal quantity of output. This more limited firm is then used as a building block for general equilibrium models, for macroeconomic analysis, for growth theory, and for welfare economics. Certainly the world, in general, is not ignorant of the benefits of improvements in product characteristics

[6]Similarly, Shapiro and Varian (1999) discuss competitive strategies like differentiating products and innovating to add value to products that are competing against similar products on the market, whereas Varian (2004) discusses competitive strategy in the neoclassical setting of undifferentiated products.

over time. However, this knowledge has not yet penetrated the core of neoclassical microeconomics. This paper has noted the implications for neoclassical welfare economics to show that substantially different conclusions arise when a more complete depiction of the activities of firms are used as a foundation for analysis.

CONCLUSION

The neoclassical theory's treatment of product differentiation suggests its own faults. While neoclassical microeconomic theory concludes that firms with some monopoly power can be more profitable than pure competitors, it depicts the profit-maximizing strategy of competitive firms as minimizing the costs of production rather than seeking ways of obtaining market power and monopoly profits. This substantially misrepresents the optimal strategy for competitive firms and the actual nature of competition. The optimal competitive strategy is to seek ways of differentiating the firm's output from that of other firms by creating a product that is more desirable to consumers. Indeed, this strategy is necessary for the survival of a competitive firm, because every firm's competitors will be looking for those types of competitive advantages, and the firm that simply follows the neoclassical strategy of minimizing cost with a given production function will be left further and further behind its rivals. Whereas the neoclassical framework assumes that competitive firms have homogeneous products, in fact competitive markets require firms to innovate and differentiate their products if they want to survive.

In the neoclassical framework, product differentiation provides consumers with the benefit of more variety in exchange for higher cost, because firms produce above minimum average total cost. In this neoclassical view, the only benefit that product differentiation provides is greater variety for consumers. In fact, firms do not differentiate their products to make them different from those of their rivals, they differentiate them to make them better. By so doing, product differentiation produces continually better products—as viewed by the people who buy and consume them—and in this way product differentiation is the engine of economic progress.

The benchmark for welfare maximization in neoclassical economics is the Pareto optimal competitive equilibrium, and when welfare is maximized, firms in competitive industries produce undifferentiated products, and no profits remain in the economy. In fact, welfare is maximized when firms differentiate their products and generate monopoly power for themselves as a result. Profits are necessary for welfare maximization both to entice firms to innovate, and to provide an indicator as to

whether innovations are really welfare-enhancing. In contrast to the views held by the mainstream in economics since Robinson (1933) and Chamberlain (1933), where product differentiation raises the cost of production, in the real world product differentiation lowers cost by providing more utility for a given level of expenditure. The increased utility as a result of greater product variety is a part of this, but more significant is the improvement in the characteristics of output that result from product differentiation.

Few people would argue that the vast increase in economic welfare over the past 20, 50, or 100 years is the result of the economy moving closer to Pareto optimality, as neoclassical welfare economics would suggest. Rather, the huge increases in economic welfare have come from the economic progress that has brought with it new goods and that has improved the characteristics of old goods. These improvements are the result of product differentiation, which is the engine that drives the continual increases in economic welfare that the world has seen since the beginning of the industrial revolution.

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