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PERFECT COMPETITION: A CASE OF "MARKET-FAILURE"+

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Abstract

In this paper we research one of the corporate governance mechanisms, i.e. market for goods and services. We focus on perfect competition. We concluded with the explicit argument for letting loose the dogs of the Federal Trade Commission and the Antitrust Division of the Justice Department upon perfect competitors. Our main concern is the failure of mainstream economics to incorporate, properly and completely, the concept of foregone alternatives, into its analysis. The present paper is an attempt to trace out the some of the implications of this critical error for industrial organization.

Keywords: perfect competition, corporate governance, market failure

+ We place quotes around the phrase "market failure" to indicate that, in our view, there is no such thing, in reality, as that which is depicted by this phrase. On this see Cowan, 1988; Rothbard, 1962.

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I. Introduction¹¹⁴

Yes, you have read our title correctly. We show that it is not the "monopolist" of neoclassical economic theory who engenders "market failure" but rather the much beloved, from this perspective, *perfect competitors* who are guilty of this sin. If, and to the degree to which, antitrust is justified, then, in our view legal penalties should be applied not to the former but to the latter! In section II we present a graphical analysis that underlies our position; section III contains the relevant mathematics. We conclude in section IV with the explicit argument for letting loose

¹¹⁴ The word "cost" is used ambiguously in economics. On the one hand, it refers to the subjective value of the most attractive alternative foregone when choosing (i.e., opportunity cost). On the other hand, it is used synonymously with expenses, both explicit and implicit. The latter use implies that cost is objective and can be quantified, as in total cost, average cost, marginal cost, etc. Although we prefer not to use the terms cost and expense interchangeably, in this paper we will follow neoclassical tradition and do so.

the dogs of the Federal Trade Commission and the Antitrust Division of the Justice Department upon perfect competitors. Our main concern is the failure of mainstream economics to incorporate, properly and completely, the concept of foregone alternatives, into its analysis. The present paper is an attempt to trace out the some of the implications of this critical error for industrial organization.

II. Graphical Analysis

According to neoclassical theory, optimal allocation of resources requires that that $P = MC$. Regardless of the reason, anytime this condition does not hold, market failure is said to exist. Profit maximization requires that $MR = MC$. However, whenever the demand curve slopes downward $P > MR$. Therefore, given that the demand curve slopes downward and profits are maximized, market failure results, because in such cases $P > MR = MC$. Moreover, the market failure consists in a suboptimally low quan-

tity of the good being produced and sold¹¹⁵ because here the quantity at which $P = MC$ is necessarily greater than that at which $MR = MC$.

Perfect competition is the only exception; it is the only situation in which profit maximization does not result in market failure, in the view of the neoclassicals. The reason is that in perfect competition, the demand curve is perfectly elastic; i.e., $P = MR$ and, therefore, $MR = MC \Rightarrow P = MC$. Of course, that is somewhat misleading. According to the theory, demand is perfectly elastic for the individual perfectly competitive firm, or more correctly, the firm (decision maker) thinks it is; e.g., acts on this basis¹¹⁶. However, the industry or market demand is not perfectly elastic; rather, regardless of the good sold by the industry, it is less than perfectly elastic. This is an instance of the fallacy of composition in that each firm thinks it could sell more without having to reduce the price it charges. It is this that gives rise to the "market failure."

Barnett and Saliba (2003) demonstrate that the traditional explanation of why marginal revenue diverges from average revenue, i.e., the demand curve, is erroneous. Let us rehearse the argument. When price falls and quantity rises, a movement down and to the right on the demand curve, the firm suffers from a diminution of price on each infra-marginal unit. When this is taken into account, the result is the divergence of the marginal revenue from the average revenue or demand curve. The price decrease necessary to sell the marginal (or 1001st) unit might only be a single dollar. But if the firm is already producing 1000 units (the infra-marginal amount) then the loss is one dollar multiplied by 1000.

Certainly neoclassical analysis recognizes the existence of both explicit and implicit costs. The problem is that when price is reduced in order to sell an additional unit, thereby causing the seller to forego (some) revenue on the infra-marginal units that previously were sold for a higher price, the foregone revenue is not treated as a cost. However, it is in fact a type of implicit cost that should be added to all other implicit costs such as foregone salaries, foregone rent, foregone interest, etc. As a result, one type of implicit cost is segregated from all other implicit costs and included in neoclassical analysis as the difference between demand (price) and marginal revenue; i.e., that which must be subtracted from price in order to arrive at marginal revenue. By treating one type of implicit cost differently from all others, namely as a reduction in revenue rather than an addition to cost, a flaw is introduced into the

analysis and inappropriate policy recommendations stem from this error.

This point is made as follows by Barnett and Saliba (2003, p. 6):

The key issue, then, is why, in the ubiquitous cases of downward sloping demand curves, neoclassical analysis finds, and a subjectivist approach does not find, a divergence between price and marginal revenue. The reason they differ on this matter is because neoclassical theory fails to treat the revenue foregone when a firm must lower its price to sell a larger quantity as an implicit cost, but, rather, deducts it from the price in order to arrive at marginal revenue. This error, the subtraction of the foregone revenues from price to derive marginal revenue, instead of adding them to marginal cost, arises because of the failure of neoclassicists to appraise the decision situation from the subjective point of view of the seller, for whom foregone revenues are an implicit cost. Rather, they take the "objective view point" that they assume some external observer would have.

From some point of view, perhaps that of common sense, it matters not whether an action calls for additional costs or reductions in revenue. But even from this perspective, at the very least, it is arbitrary on the part of the neoclassicals to insist that it is the latter that is in operation here, not the former. Our "strong" claim, then, is that this loss is a cost, not a reduction in revenue. Our "weak" claim, in contrast, is that the neoclassical style of describing the situation cannot be shown to be superior to our own. That is, it is a matter of indifference¹¹⁷ as to which one is correct.

But we defend our strong, not our weak argument. In our view, the problem with the mainstream economist is that while he pays lip service to alternative or opportunity cost, his adherence to this doctrine is but skin deep. When push comes to shove, the neoclassical dismal scientist forgets all about it; he jettisons it without a backward glance. A loss of revenue is, if we take this doctrine seriously, a cost. It is an alternative foregone. As such, the differential created by the divergence between the prices at which the marginal and infra-marginal units can be sold must be added to the marginal cost curve, not subtracted from the average revenue or demand curve. It simply cannot be denied that foregone revenues are a cost to the seller. This is a direct deduction from the doctrine of alternative costs, but it has never been drawn by neo-classical economists.

¹¹⁵ This suboptimally low quantity is sold at a suboptimally high price that redistributes income/wealth from sellers to buyers.

¹¹⁶ For the view that "actions speak louder than words," or, that it is human action that is the basis of economics, see Mises (1966)

¹¹⁷ Contrary to the neoclassical vision (Nozick, 1977; Caplan, 1999) in technical Austrian economics, there is no such thing as indifference (Rothbard, 1970, 1997; Barnett and Block, unpublished; Block, 1999, Hulsmann, 1999). But, as a matter of common language, "indifference" is a legitimate English word, and thus must have some referent or meaning.

Barnett and Saliba (2003) show that the traditional (neoclassical) marginal cost (NMC) understates the actual, full, or complete marginal cost (CMC¹¹⁸). As illustrated in figure 1, in every case, $P \neq MR$, and therefore profit maximization ($MR = \underline{CMC}$) coincides with optimality ($P = \underline{CMC}$). If, then, perfect competition occurs, the allocation that results is the solution of the equation $P = NMC$, and not $P = \underline{CMC}$; thus, Q will be suboptimally *high*. That is $P = \underline{CMC}$ at a lower Q than that at which $P = NMC$. Consequently, the suboptimally high perfectly competitive solution at $P = NMC$ is an instance of market failure. To what are we to attribute this failure of the market?

Among the assumptions of the perfectly competitive market are the following: each firm is so small relative to the market that it thinks, or better yet, acts as if, it has no control over the price at which it can sell its output. Therefore, it treats price as a parameter; i.e., each member of the industry is a "price-taker;" each one functions as if it can sell all it wishes to at the (parametric) market price; i.e., no one company thinks it must set price below the current market price in order to sell more; prices are known for sure, thus each seller has perfect knowledge of the current market price.

However, in fact, these (assumed) beliefs of the sellers are in conflict with reality. For a firm (industry) to be in perfectly competitive equilibrium, the firm (firms in the industry) would have to continue to hold these beliefs in the face of evidence (the behavior of the buyers and of its competitors) very much to the contrary¹¹⁹. Were this not the case, once established, the market price of a good in a perfectly competitive market would never change, regardless of alterations in buyers' and sellers' valuations of the good; i.e., there would not be any forces in the market¹²⁰ tending to eliminate shortages and surpluses as they appear. This would amount to a true case of market failure in contradistinction to alleged examples such as externalities and public goods. Of course, sellers do not hold such beliefs for long; any who do would find that competition would drive them out of the market. That is one reason why there are no perfectly competitive markets in the real world.

Therefore, because any market that exhibited market failure in the form of perfectly competitive

results would be misallocating too much of "society's" scarce resources to the production and sale of that market's good, following other aspects of neoclassical reasoning, the case could be made that the firms in that industry be subject to laws analogous to anti-trust. Of course, as per another aspect of neoclassical reasoning, such laws should be enforced only if the benefits from reallocation exceed the enforcement expenses. It should be noted that, provided the (neoclassical) marginal expense curve slopes upward as do all marginal cost curves over the relevant range in reality, for any given perfectly competitive market equilibrium, the gain to be had from intervention is greater, the less elastic the market demand. That is, the more elastic the market demand, the more harm is done in terms of misallocation of resources.

III. Mathematical Analysis

Let $TR = P(Q) \cdot Q$ and $TC = C(Q)$, where TR is total revenue, P is price, Q is quantity, and TC is total cost. Then profit maximization requires that $P + QdP/dQ - dC/dQ = 0$. The standard formulation, then, is: $P + QdP/dQ = dC/dQ$, or $MR = MC$, where MR is $P + QdP/dQ$, and MC is dC/dQ . Barnett and Saliba (unpub.) reformulated this as: $P = -QdP/dQ + dC/dQ$, where $MR = P$ and $MC = -QdP/dQ + dC/dQ$. The difference between the present authors and the mainstream concerns the treatment of the term QdP/dQ . Because $Q > 0$ and $dP/dQ < 0$, this term is negative. In fact it is the (per additional unit sold) foregone revenue the seller incurs because he had to lower price in order to sell the additional units. It makes no difference with respect to the profit maximizing quantity and price which formulation is used, as Q is determined as the solution to the equation: $P + QdP/dQ - dC/dQ = 0$, and P by inserting the solution value of Q into $P = P(Q)$. Moreover, although it makes no difference to the seller whether he regards the foregone revenue as a deduction from revenue or an addition to cost, it makes a great deal of difference to the economic analyst. From the latter's point of view, foregone revenue must necessarily be a cost, a sacrificed alternative, to be added to other costs. There is simply no reason to treat *this* cost in a manner different than all others¹²¹. Looked at in that way,

¹¹⁸ Note every time that "CMC" appears the first "C" is underlined, in bold and italics typeface; i.e., it appears as "CMC." This is our attempt to underscore the importance of *complete* marginal cost.

¹¹⁹ It is difficult to square this with ordinary common sense, let alone "perfect" information.

¹²⁰ Of course, the forces in the market are but the actions of normal human beings going about their business of trying to satisfy their wants. That is, frustrated buyers bid up the price in cases of shortages and frustrated sellers offer to sell at lower prices in cases of surpluses.

¹²¹ A similar mistake occurs with regard to the treatment of "transactions" costs in the Chicago Law and Economics literature. Transactions costs, too, are undeserving of any particular special treatment, not enjoyed by other, more run of the mill or garden variety costs. For a critique of such authors as Coase (1960) and Posner (1992) who elevate the status of transactions costs above and beyond their due, see Block (1977, 1995, 1996), Cordato (1989, 1992a, 1992b), Krecke (1996), North (1990, 1992, 2002), Stringham (2001), and Rothbard (1990). There is, however, an important difference between this debate and the one discussed in the text. Transactions cost is, at least, treated as a cost by its particular adherents. In the issue discussed in the

i.e., from the point of view that foregone revenue is a cost, the term, $-QdP/dP$ must be added to dC/dQ to get what we have called complete marginal cost ($\underline{C}MC$). Furthermore, the sale of each additional unit brings in an amount equal to its price, therefore, $MR = P$. Profit maximization, then, requires that $MR = \underline{C}MC$, or, because, $P = MR$, that $P = \underline{C}MC$. Consequently, the optimal allocation of resources that occurs when $P = \underline{C}MC$ coincides with the profit maximizing allocation of resources that occurs at $MR = \underline{C}MC$. Thus there is no divergence between the social and private optima.

IV. Antitrust implications¹²²

Neoclassicals argue¹²³ that under "monopoly" (i.e., other than perfectly competitive) conditions, production takes place at point M, whereas if social welfare is to be maximized, it must occur at point C. Therefore, there is a dead weight loss equal to AMC (the area with the vertical lines) in figure 1. In order to rescue the market from this deviation from maximum social welfare, they argue, at least theoretically, that the government must either break up the industry into numerous smaller constituent elements, socialize and run it at point C, or regulate the industry to the same end. We maintain, in sharp contrast, that the *real* dead weight loss is not a function of "monopoly"; rather, it emanates from "perfect competition." We take the position that M is the optimal point, from the social welfare point of view¹²⁴ as defended by neoclassical economics, and that the dead weight loss should be depicted not by AMC, but rather by MBC (the area with the horizontal lines). That is, perfect competitors, who occupy point C, produce *too much*, since they locate to the right of the optimal point, M, where $\underline{C}MC$ crosses the demand curve. The MR curve drops out of our analysis as shown by an MR curve illustrated by dots, not a line. The perfect competitors, in dastardly fashion, utilize *too many* of societies' resources, leaving too few for the production of other goods.

text, however, that which is really a cost is instead dealt with in a very different manner: it is calculated as a subtraction from revenue, instead.

¹²² There are other good and sufficient reasons to oppose antitrust legislation. See on this Anderson, et. al. (2001), Armentano (1991), Block (1977, 1994), Block and Barnett (unpublished), Boudreaux and DiLorenzo (1992), DiLorenzo (1997), DiLorenzo and High (1988), High (1984-1985), McChesney (1991), Rothbard (1970), Shugart (1987), and Smith (1983).

¹²³ See Bork, 1978, Brozen, 1982, Posner, 1976, Stigler, 1968, Telser, 1987.

¹²⁴ For the Austrian argument in which we entirely concur that there is no such thing as social welfare, or, rather, that there is but that it obtains solely under *laissez faire* conditions of pure markets based on private property rights with no government interference, see Rothbard (1997).

Now, if the civil penalty for monopolizing is triple damages, what should be the punishment for perfect "competitionizing"? Surely, it should be more severe, for it cannot be denied that it is more of an offense against the common good produce *too much*, to in effect *waste* society's resources, than to more modestly use too few of these precious means.¹²⁵ This being so, we suggest that damages in excess of treble, say quad-, quin-, or sex-, tuple, should be assessed against all those who act as if they face a perfectly elastic demand curve.

And what is the source of such anti-social activity? It is yet another "market failure:" externalities.¹²⁶ Even though each "perfect competitor" knows he has innumerable competitors trying to sell goods identical to his, he acts as if they do not exist. Whenever the market price is above his (neoclassical, i.e., *incomplete*) marginal cost, in mechanical fashion he produces additional units. This atomistic firm acts as if it does not realize that its counterparts will *also* engage in such activities, with the consequence that when they all do, the price must inevitably fall.

That is, there is no such thing as a perfectly elastic demand curve. *Overproduction* is the inevitable result of such "head in the sand" behavior.

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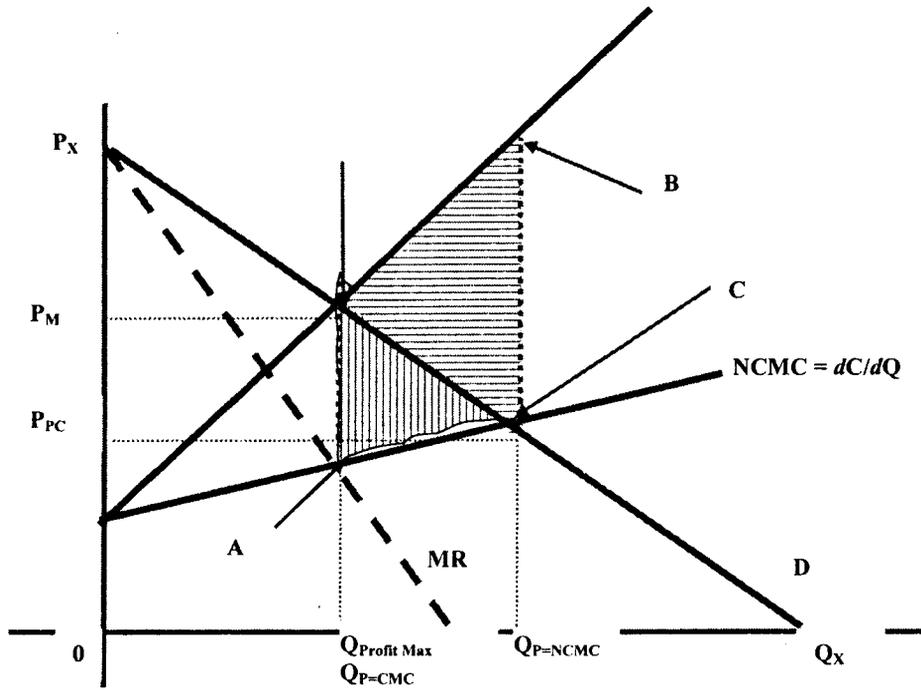
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¹²⁵ On this point, see: Barnett and Dauterive (1985, 2003), and Barnett, Dauterive, and White (1985).

¹²⁶ In order to clarify our own position, we engage in a *reductio ad absurdum* argument. We do not for a moment countenance the market failure of externalities (any more than we do *any* market failure). Upon analysis, these *all* turn out to be instances of incomplete, or contradictory, or totally lacking specifications of private property rights, or the inadequate enforcement thereof. See on this (Rothbard, 1977; Block, 1983; Cordato 1992,).

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Appendix



NCMC = neoclassical marginal cost CMC = complete marginal cost
 $Q_{Profit Max}$ = profit maximizing quantity $Q_{P=CMC}$ = subjectivist socially optimal quantity
 $Q_{P=NCMC}$ = neoclassical socially optimal quantity
 P_M = "monopoly" price P_{PC} = "perfect competition" price
 M = profit maximizing price-quantity point in both neoclassical analysis & subjectivist analysis,
 and the socially optimal point for subjectivist analysis
 C = socially-optimal point in neoclassical analysis, and a socially-suboptimal point in subjectivist
 analysis