

The text-book myth of the monopoly case

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1.1. Introduction

This paper discusses one of the most commonly accepted results of main-stream economics, namely that monopoly¹ means higher price and lower volume of production. In our opinion this results is a myth, or more precisely, it is only valid in the theoretical framework of static general equilibrium theory, and not in real economic life.

I will argue that a private monopoly is in most cases the reward for having out-competed other firms by offering a better price/quality combination. In most cases such a dominant position (oligopoly/monopoly) is a consequence of creating and utilizing increasing returns to scale, giving (dynamically) exactly the opposite result what most text-books in economics argues: a lower price and a higher volume.

The crucial point is of course the static nature of perfect competition. Consequently the text-books do not have a theory on why and how one gets from a perfect competition state to a monopoly case. In this case comparative statics will not be very appropriate approach since the change from the perfect competition state to the monopoly state is of a qualitative nature. This leaves standard neo-classical theory without a real theory of the relationship between the two cases.

This “high price – low volume” myth has important consequences in many fields of economic policy. To illustrate the consequences the paper will briefly discuss the consequences for competition regulation authorities. In our opinion they have a mistaken focus on the significance of the number of actors in the market. They do not take into consideration the dynamics of competition and the consequently the dynamic variation of the number of actors in the market.

The paper argue that the closer we are to a situation where the conditions for perfect competition are approached, the faster will the (dynamics) of competition lead to monopoly. It is the strategies to avoid (perfect) competition that constitutes real competition, i.e. the all the efforts the firms do in order to get competitive advantages. Competition gravitates towards monopoly – and that is the important mechanism for creating increased welfare - not perfect competition. Perfect competition is a state without technological change and is more correctly called perfect stagnation.

The paper takes as its starting point the monopoly case as it is described in three economic textbooks. Two of them are international best-sellers in the English

¹ In this introduction I use the word monopoly for a catch-all phrase for a dominating market position, basically price-setting behaviour as opposed to the price-taking behaviour of perfect competition. The particular configuration, i.e. pure monopoly, duo/oligopoly, monopolistic competition is not of fundamental importance to the argument.

speaking world, Samuelson&Nordhaus (1992), Stiglitz&Walsh (2003) and Ringstad (2002), a well-known text book in Norway.

1.2. *The monopoly case in the text-books*

Although there are important differences in their treatment of the monopoly case the textbooks all contain the figure comparing perfect competition (PC) with the monopoly case, concluding that monopoly means higher price and less volume produced. What is lacking is a thorough discussion of why imperfect competition is so widespread, oligopolistic or imperfect competition is the standard market structure. Even less discussed is the question whether perfect competition is a stable state. Let us assume that there was perfect competition: why and how do we then end up with a monopoly? The answer in the text-books give is that increasing returns to scale will create a natural monopoly. But then it is far from obvious that the marginal revenue curve and marginal cost curves will be identical in the perfect competition case (PC) and in the monopoly case (MC). Stiglitz and Walsh (2003) and Samuelson and Nordhaus (1992) do not discuss this point explicitly. Ringstad (2002) does so, and he then shows that the monopoly case might result in lower price and more production, i.e. greater welfare than perfect competition. Ringstad (2002, p. 215) writes:

“In the case of increasing returns to scale the monopoly’s adaptation (unregulated monopoly) might imply a welfare gain as compared with the case of perfect competition. This depends on whether the effects on costs of increasing returns to scale are greater than the effect of the monopoly’s adaptation. “

But not even Ringstad (2002) asks the question if *competition itself* creates incentives to create increasing returns to scale. Neither the question of how one did get into a monopoly situation – or the stability of perfect competition. In my opinion it is obvious that profit maximisation encourages, and in many cases or forces, the firm to look for production technologies that have increasing returns to scale. Baumol (2002, p. viii) writes:

“My central contention here is that what differentiates the prototype capitalist economy most sharply from all other economic systems is free-market pressures that force firms into a continuing process of innovation, *because it becomes a matter of life and death for many of them*. The static efficiency properties that are stressed by standard welfare economics are emphatically *not* the most important qualities of capitalist economies.

The key point here is of course the fact that perfect competition has nothing to do with competition at all. The theory of perfect competition describes *static* equilibrium, but does not describe how to get to that equilibrium, or how stable that equilibrium is. My proposition is that perfect competition is not only a non existing state due to the extreme lack of realism of the model, but that it is an *unstable, unsustainable* state. Nobody wants it, neither firms nor society. For the firms it means reduced profits or bankruptcy. For society it means less innovation, less welfare. Whenever markets are having characteristics that one might think of as characteristic

of perfect competition, the firms will – if at all possible - actively take action to change that situation, by technological innovation, product differentiation, by obscuring information, by various forms of cooperation. A lot of what we observe in real life markets is strategies the firms apply to avoid getting in a situation where some of the conditions of perfect competition are being satisfied. The combination of these strategies leads to various outcomes. A discussion of the welfare effects of these strategies is beyond the scope of this paper. The point is that perfect competition – by its unstable nature – *cannot be a benchmark* for the real existing market structures or for the optimal economic policies.

1.3. *The newspeak of perfect competition*

In his novel “1984” George Orwell lets one of the party cadres explain the new party line on war and peace in this way:

A peace that was truly permanent would be the same as a permanent war. This -- although the vast majority of Party members understand it only in a shallower sense -- is the inner meaning of the Party slogan: WAR IS PEACE.

Orwell 1949, p. 164

Regrettably too few are aware of the newspeak meaning of perfect competition. When we say “war” (perfect competition) what we actually describe is “peace”, i.e. no competition at all. This newspeak paradox has been pointed out by many economists - among them - Oscar Morgenstern. In his article “Thirteen Critical Points in Contemporary Economic Theory: An Interpretation” Morgenstern wrote about the meaning of words and concepts in economics:

Consider “competition”: the common sense meaning is one of struggle with others, of fight, of attempting to get ahead, or at least to hold one’s place. It suffices to consult any dictionary of *any* language to find that it describes rivalry, fight, struggle, etc. Why this word should be used in economic theory in a way that contradicts ordinary language is difficult to see. No reasonable case can be made for this absurd usage which may confuse and must repel any intelligent novice. In current equilibrium theory there is nothing of this true kind of competition: there are only individuals, firms or consumers, each firm and consumer *insignificantly* small and having *no influence* whatsoever upon the existing conditions of the market (rather mysteriously formed by *tatônnement*) and therefore solely concerned with maximizing *sure* utility of profit – the latter being exactly zero. The contrast with reality is striking: the time has come for economic theory to turn around and “face the music”.

(Morgenstern (1972, p. 1164).

A lot has happened in the development of main-stream economic theory since Morgenstern wrote this article, but perfect competition still is used as the benchmark, as the “first best” in economic text books. The results that one derives from the perfect competition model still strongly influences the public debate about economic policy. There are certainly many reasons for this, the success of capitalism as a system, the lack of a coherent alternative theoretical alternative, the experience of the

dictatorial, bureaucratic command economies etc. But as Stiglitz points out, also the fact that the theory legitimates economic policies that serves the elites of modern capitalist society². A discussion of why perfect competition still is used as a benchmark is beyond the scope of this paper. I will focus on an aspect that so far has not – to my knowledge been highlighted in the literature: the relation between innovation, real existing, “imperfect” competition and oligo- or monopolistic market structures – and the welfare impact of such structures.

1.4. A rational firm is a monopolist in spe

The starting point is that firms want to maximize profits. Since the firm as a monopolist has greater profits in the monopoly case than in a perfect competition equilibrium a rational firm wants to become a monopolist. Every firm is a monopolist in spe. To the extent that it can change its production function and achieve increasing returns to scale, it will do so. The possibilities are legion due to the ever expanding “knowledge economy” there are always possibilities to combine existing and own developed technologies into new innovations. This means that only when external forces are sufficiently powerful to keep the firm behaving in the way the theory of perfect competition equilibrium prescribes would it do so. But as soon as prices, technology, preferences – that is - everything - is *not* given, and in reality it is not so why on earth should it be a *passive* price taker. Why should it not get itself into the falling part of the U-curve if it has the possibility to change the technology? What is the force or forces to keep it from doing so? I cannot see any such fundamental obstacle for creating increasing returns to scale on the level of the firm. Or as Helpmann and Krugman (1993, p. 32) puts it: “*The easiest form of scale economies to give a real world justification is increasing returns to scale*”. But increasing returns to scale is not only something that – regrettably – exists. It is only with the non-existing, illusory benchmark of perfect competition that scale effects are (or create) imperfection(s). From the firm's point of view – that is an optimum point. If it has underestimated demand – being a little risk averse – then profits will increase per unit as average unit costs fall and volume increases. The firm can also sell large quanta at “reduced” prices. Stiglitz and Walsh (2003, p. 261) see excess capacity as an imperfection, not as rational behaviour given uncertainty about demand.

The important point is that, increasing returns to scale is something that real existing competition *creates* because it is the most rational behaviour seen from a profit maximising perspective. A discussion of this aspect of real competition is lacking in all of the examined textbooks. As usual the discussion of perfect competition is not rigorous, Stiglitz and Walsh (2003, p. 261) write:

²“But one cannot ignore the possibility that the survival of the paradigm was partly because the belief in the paradigm and the policy prescriptions that were derived from it, has served certain interests”. Stiglitz (2002)

“In perfectly competitive markets, competitive behaviour is clear and simple. Firms work to lower their costs of production. They can sell as much as they want at the going market price. They do not have to worry about clever marketing strategies, new products, or advertising.”

In my opinion Stiglitz and Walsh cannot introduce a dynamic element “firms work to lower their costs of production” – since in perfect competition technology is given. But this way of using dynamic arguments to make a totally static model more plausible by using ad hoc dynamic reasoning is very common among main-stream economist, but that does not make it more rigorous.

1.5. Competition destroys the preconditions for perfect competition

As outlined above, the absolute static nature of perfect competition makes this a newspeak notion. When everything is given, when adaptation is only a mechanical movement without any room for choice or for creativeness, the firm is a robot, not a real existing, creative firm. What Debreu (1959) did was to prove the existence of a general equilibrium point, but not at all how to get there and how to stay there, as soon as one introduces real time, real dynamics, i.e. when everything is *not* given. There has been several unsuccessful attempts to model general equilibrium in a dynamic framework, like Fisher (1983) In Currie and Steedman 1990 there is an overview of the (lack of) modelling of time in economic theory.

The lack of realism of perfect competition is well known to economists, but let us look at cases where we with some stretch of the imagination might think that we are approaching a situation that roughly could be classified as perfect competition. That is a situation where firms have similar production techniques; consumers can rationally judge the price/quality of the product in a certain market. In the PC case, raising the price a little would lead to losing all customers, lowering the price would mean gaining the whole market, becoming a monopoly, since we still assume that the firm can sell as much as it wants to that price. Consumers would want to buy *at least* as much to this lower price as to the PC price. This leads to the result that, perfect competition creates perfect monopoly! The more perfect the information is, the less the transaction cost are, the faster we move towards perfect monopoly. This unstable competition situation leads to a search for strategies to avoid products being compared. Product differentiation, advertising, brand building etc. all have the consequences of destroying the consumers' possibility to compare the goods in a rational way. Since these efforts do not add anything substantial to the product they are a waste of resources. This is one reason not to idealize a situation when we have similar products, the millions of USD used for advertising for Coca-Cola and Pepsi-Cola is of course a prime example.

Monopolies everywhere or nowhere?

Product differentiation of course raises the question of what we define as a market. In theory one could use the substitution elasticities, but for practical regulatory purposes this is difficult. What we should regard as a market is of course a common sense question, a question depending on the analytical purpose. But since the text-books regard anything but price-taking, i.e. any type of price setting behaviour as

some variety of monopoly, as an imperfection there are monopolies everywhere, because product differentiation to a certain extent makes the firm the sole supplier of this special product – that is a monopoly. On the other hand, Coke competes with Pepsi, with innumerable local brands. Dell competes with at least a dozen other computer producers. A monopolistic air company competes with trains, with private cars, with long distance busses. Seen this way there are no real monopolies³. The solution to this paradox is of course simple, to give up perfect competition as an ideal, as *the* reference point in main-stream economic theory and develop a real dynamic theory of capitalist competition. Such a theory would focus more on the real, observed efficiency where the contribution of firms and market structures to resource saving innovation (labour, environment) within varying time horizons will be the primary objective. The relevant benchmark for efficiency is the previous stable situation, the price/quality/quantum of the previous “monopolist”, not an imaginary state of perfect competition.

A large market share – the reward for being innovative

Because what we really want to happen, is that the firms innovate, trying as hard as possible to create increasing returns to scale. That will both deter entry, but also be the best weapon of the entrant against predatory prices. That they improve their products and/or their production process so that they can compete with the other (incumbent) firms for greater market shares by offering a better combination of price/quality. If they do so, then increasing returns to scale is of course the best way to compete the others out of the market. The firm gets into a positive feedback-loop. Greater returns increase the possibilities for investing in R&D, in new and more efficient machinery, of rationalizing the distribution, marketing etc. In short there are always some possibilities for creating increasing returns to scale. That this is a wide spread phenomenon is acknowledged by the text-books. Samuelson and Nordhaus (1992) write:

The case of decreasing costs is not an isolated phenomenon. Numerous detailed econometric and engineering studies confirm that a wide range of non-agricultural industries show declining average long-run costs. Given the prevalence of decreasing costs, we cannot be surprised at the existence of imperfect competition in the modern industrial economy. (p. 148)

As we see, this is not a discussion of stylized facts, but of their interpretation. In the text-books, reality is not denied, but the text-books do not confront the perfect competition model with the stylized facts. Nowhere is this clearer than in the treatment of Schumpeter.

³ A very well formulated discussion of this is found in Bernard Guerrien (2002) p. 358

1.6. *Samuelson, Stiglitz and the Schumpeterian challenge*

The arguments put forward above are of course well known. Samuelson and Nordhaus (1992, p. 189) call it the Schumpeterian hypothesis:

Because economists had been taught about the evils of monopoly and the wastes of imperfect competition, the bold *Schumpeterian hypothesis* came as a shock. This hypothesis has been subject to careful scrutiny for over four decades. How well have these views survived in the academic market place?"

The last question is easily answered, now more than ten years later. They have survived, but they are still marginal. But let's turn to the more interesting part of the story, the arguments that Samuelson and Nordhaus put forward against the bold Schumpeterian hypothesis. Samuelson and Nordhaus admit that big firms do a major part of R&D. But at the same time empirical research on the origin of the most important invention shows that "less than half came from the laboratories of large corporations". Apple computer is quoted as one of the examples of this. But instead of any clear counter argument we are told that:

"To summarize, the relationship between innovation and market power is complex. Because large firms have made a major contribution to research and innovation, we should be cautious about claims that bigness is unmitigated badness. At the same time, we must recognize that small business have made some of the most revolutionary technological breakthroughs. To promote rapid innovation a nation must preserve a variety of approaches and organisations".

What is really striking is the static nature of the argument. In my opinion it is fairly obvious that a significant share of the small firms with a really good idea, creating and using increasing returns to scale, will grow big. Microsoft was a small, but due to luck and a courageous business strategy they became a big firm. It could have been Apple⁴. Both firms were monopolists in spe. And finally, if a nation must "preserve a variety of approaches and organisations" why should we then regard these as imperfect, talk about the "deadweight loss of monopoly" etc. To try to refute Schumpeter by arguing that not only big firms do innovate is not at all convincing. Schumpeter did not argue that *only* big firms did innovate. All big firms started out as small and innovative. The population dynamics one should expect is precisely a mix of small and big firms at any point in time.

The same difficulty in handling the Schumpeterian hypothesis we find in Stiglitz and Walsh (2003). Schumpeter is only mentioned once in this text-book. First of all we are reminded about the enormous increases in welfare during the previous century: "We are not producing the same goods the economy produced in 1900. We are producing goods that the people of 1900 never dreamed of." (p 403). The authors emphasize

⁴ In the late eighties Apple charged to high prices, they did not fully understand (as many in the software business) understand the importance of lock-in, i.e. of network effects. Paradoxically, by charging their customers the "real" value of their product, which was clearly superior. But that meant that Apple lost the battle of the operating systems.

that it is innovation that caused this, not more labour or more capital of the 1900 vintage. They also point out that “these inventors reaped a fraction of what society gained”. The creation of these new products conferred benefits well beyond what consumers had to pay for them.” (p. 404). Stiglitz and Walsh have a figure that shows *that price drop and quantity increases* when an invention reduces the marginal costs⁵. The figure illustrates the effect of a patent, but there is no fundamental difference between a patent and a competitive advantage based on temporary technological monopoly, which Stiglitz and Walsh call a “trade secret”. There seems to be some “glass ceiling” preventing the obvious conclusions from being drawn; namely that only “imperfect” competition is competition, perfect competition should would mean only perfect stagnation. Fortunately this “perfect” dismal state of affairs of perfect stagnation is a pure illusion; it cannot ever come into being, because perfect stagnation is incentive incompatible with profit maximization.

1.7. Market concentration – the wrong yardstick for competition

From a theoretical point of view the number of sellers and buyers in a market is *not* a precondition for perfect stagnation (“competition”). The necessary condition is price-taking behaviour; the number of price-takers is not. One, Two or many firms taking the price as a given fact – in theory there is no difference. Text-books try to make this price taking behaviour more plausible by arguing that in a market with many, small actors each producer/buyer is not able to influence the price very much. That might be true. But this does not take away the incentive to innovate. On the contrary. A wheat producer would increase his profits if he could produce more efficiently. If he is really facing a horizontal demand curve – even more so! If nothing else happens in the model, the producer would enjoy eternal pure profits. Free entry does not help, they enter to the same fixed price...*ceteris paribus*. One can of course just assume that all producers are price takers and produce at marginal revenue = marginal costs. But this cannot then be seen as incentive compatible with a real-life situation with a small producer facing a price which he for all practical purposes must see as fixed⁶. The methodological point is of course that you cannot at the same time cling to a certain set of results stemming from a model of perfect stagnation – or “competition” if you prefer newspeak – and at the same time use the extremely dynamic capitalist system to justify them. You cannot sneak some minuscule dynamics – like free entry forcing prices down, and keep the rest of the static results. As soon as you open the Pandora’s Box of dynamics, nothing is left of the old results, only the challenge of making a real dynamic model is left.

⁵ Stiglitz and Walsh (2003, p. 407)

⁶ That the way prices are set in GE is one of the theory’s weakest points is obvious. The “*tatønne*ment” process (groping process, norsk: *famleprosess*), or an auctionarious – and total prohibition of trading at non-equilibrium prices ... Most economist do not like to be reminded about this. Most of them have a more dynamic picture, that prices and quanta “move”. But this is Smiths, Ricardos and Marx’ prices as centres of gravitation – a totally different and dynamic story.

Just as “War is peace”, many small actors in a market in general means less competition than among a smaller group of firms. Massive entry happens when demand for a new product is high (personal computers in the eighties), prices are high and margins are also high. There are “good times” in the industry, a healthy rate of growth – room for everybody. As technology becomes more well-known the firms creates increasing returns to scale. As demand growth slows down in the high-end markets, reducing prices and capturing the mass-market is the best survival strategy. This means out competing the others – reducing the number of firms. So a reduction of the number of firms is in this phase of the market an indicator that competition is getting tougher, so the “we” and in particular the regulation authorities should welcome the reduction in the number of producers. Or as Samuelson and Nordhaus (1992) formulate this:

Note that the existence of imperfect competition does not preclude intense rivalry in the marketplace. Imperfect competitors are often fighting to increase their market shares. Intense rivalry should be distinguished from perfect competition. Rivalry encompasses a wide variety of behaviour, from advertising that attempts to shift out one’s demand curve to inventing better products. Perfect competition says nothing about rivalry, but simply denotes that every firm can sell all it wants at the prevailing market price. (p. 163)

Or the similar description by Stiglitz and Walsh (2003):

While competition in markets in which innovation is important may not live up to the ideal of perfect competition, it still can be intense. Competition focuses on producing new products as much as selling old products at lower prices. This kind of competition is often referred to as Schumpeterian competition... (p. 411)

The essence of this is first of all that all the mechanisms which really produces lowering of prices and increased output is connected with imperfect competition, or “rivalry” or Schumpeterian competition if you like and not with perfect stagnation .

Secondly there is no linear relationship between the intensity of real competition with the number of actors. Few are probably better than many. That fewer actors makes it easier to learn from the others, to take their strategies into consideration, in short a situation closer to perfect information than an large group of heterogeneous, small producers. To discuss this in detail is beyond the scope of this article, and it is discussed at length in Baumol (2002). Baumol is arguing that precisely oligopolistic competition is beneficial for growth:

“Thus it is my contention that one of the primary reasons for the failure of any other economic arrangement [feudalism, command economy] even to approximate the capitalist growth record for any considerable period is the *absence of oligopolistic competition* ” (p. 44, my emph.).

Were there fewer monopolies in the early phases of capitalism?

It is a stylized statistical fact that there is increasing degree of concentration in many industries, but does that actually mean that there was fewer “monopolies” before? Historically the first wave of monopolisation and cartelization came in the late 19th

century and was connected to the diffusion of railways. This brought districts, regions, countries and continents into closer contact and created competition. And as argued above, real competition (and not perfect stagnation) leads to concentration, in the last instance monopoly. The increased concentration in regional, national and international markets are then to a large extent just a statistical artefact. There were many segmented markets that were just as imperfect (monopolised) as the new national-, continental- and international markets. The development of transport and communication technology has integrated and continue to integrate previously separated markets. This integration of markets opens up for new ways to achieve increasing returns to scale – the prime motor of real competition, concentration and consequently welfare⁷.

The Sisyphus labour of the competition authorities

The current understanding of perfect competition is that “many small actors”, are – if not a prerequisite – then at least an important indicator of well-functioning markets. Stiglitz and Walsh (2003) correctly describe the development of the US anti-trust policies as being “founded on the belief that government should push markets toward the model of perfect competition” (p. 415). This is really a Sisyphus effort given the fact that the name of the game of real-life competition is to out compete other firms, thereby reducing the number of firms. The fight against market dominance is fundamentally overlooking that being dominant in most cases is a reward for being really innovative. The examples mentioned in the three textbooks, AT&T, Xerox, Eastman Kodak, Ford, IBM are all examples of very innovative companies. The granting of patents – a publicly sanctioned technological monopoly – is another indicator of the schizophrenic anti-trust policies. We want the benefits from technological competition, but not its logical corollary: market dominance, price setting behaviour. Already the publicly authorized granting of patents is an admission that technological monopoly is socially beneficial. That patenting is not general due – among other causes - to the fact that a patent give rivalling firms a certain type of information about the technology. Why the text-books do not discuss this in more depth, drawing the obvious parallels to the non-patented, innovative competitive advantages can basically only be explained by the ideological consequences it would entail to admit that the – indeed imperfect – way capitalism satisfies societal needs has nothing to do with the *absolute, by definition* (not in reality!) efficient use of resources that perfect competition claims.

Another example of this schizophrenic Sisyphus labour is the work done by for example the Norwegian competition authorities attempt to make the prices for mobile telephony and electricity prices transparent. To show consumers the real prices in order to get closer to the theoretical ideal of perfect competition. Stiglitz and Walsh (2003) also discuss the role of information at length, including search and imperfect information. One example they give is the price of portable CD's. How much search is rational? If we do not know, we likewise do not know how much

⁷ This was pointed out by Adam Smith: “As it is the power of exchanging that gives occasion to the division of labour, so the extent of this division must always be limited by the extent of that power, or, in other words, by the extent of the market.” (The Wealth of Nations, Book I, Chapter II)

information search is rational to do, in order to know if further search will pay off etc. etc. This type of recursive question cannot be solved by Lagrange optimization. On the other hand:

If search were costless, everyone would go to the store selling the CD player at the lowest price, and any store charging more than that would have no sales. Market in which search is costly are, accordingly, better described by the models of imperfect competition. (p. 296)

But what happens when one store gets all sales? The others go bankrupt and we end up with a "perfect" monopoly. Of course we can "assume" that all sell at the same price. That is easy. We can "assume" that those "having no sales" would then lower their prices. But this takes time. If not then the counterfactual would be meaningless, because then we should not observe different prices for the same product – as we do all the time. The fact that with perfect information, no transaction costs etc. we instantaneously move towards perfect monopoly is obvious – as soon as we allow ourselves to alter one of the preconditions. The obvious question is: if we are going to introduce some tiny part of reality – why just this one? The effect that giving the "true" prices – if successful would move us even faster towards monopoly is all the more important in the mobile telephony and electricity markets where there are much more pervasive scale effects than in retail electronics. These scale effects that are the only real source of increased welfare. The reason why there are not "perfect" monopolies in many sectors is of course the possibility for new monopolists in spite of innovating, to grow and to challenge the dominant firm/technology. This means that to support the emergence of new monopolists in spite of is a primary objective of public policy. This is what should be the fundamental rationale for public support to R&D, not any "market failures" as defined by the theory of perfect competition.

It is beyond the scope of this paper to discuss how – given that it was based on a dynamic view of markets – competition regulation should be formulated and implemented. The Journal of Economic Perspectives recently had a symposium on this topic, presenting two different views. Crandall and Winston (2003) in their "Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence" are sceptical to the efficiency of the antitrust policies, arguing that their costs outweigh the benefits, not the least because the "excessive duration of monopolization cases". On the other hand, Baker (2003), "The Case for Antitrust Enforcement" argues against Crandall and Winston that – especially the last three decades – that the individual cases show the efficiency of antitrust activities. It is of course hard to calculate the effect of deterrence, that the threat of prosecution is real. None of the authors discusses the theoretical foundation of these policies, discusses concepts like "market power". Baker for example does not seem to regard as contradictory the fact that Xerox, based on patents gets a very dominating position – just to be forced to license its technology "for a small royalty". Baker regards the settlement as "highly successful" – and it probably was. What is important from a theoretical point of view is first of all that both articles confirm that huge efficiency gains are the basis for mono-/oligopolistic market dominance. Secondly, that a market left to itself does not converge to the most efficient solution imaginable, but that this has nothing to do with market failure, but is an inherent quality of competition, that it is wasteful.

No homage to dominating firms

My aim here is to understand the real, dynamics of capitalism, this process of creative destruction. It is not to say that this process is harmonic, optimal, the most efficient system imaginable. On the contrary, the process is very well described by the Schumpeterian "creative destruction". This is not equivalent to painting any rosy picture of the business practices of capitalist firms, the existing monopolists or the monopolist in spe. Neither the small innovative firms nor the big Microsoft should be elevated in to the ideal archetype for firm size and behaviour. The actual business practices of firms – small or large - clearly leave some room for improvement in many cases. Examples are legion: the eternal efforts to lock users into their own technology, the enormous amounts used on non-informative advertising, the round-about-way to create rational industry standards in order to reap various types of scale effects, the buying up of competing producers with superior products only to bury them afterwards etc.

The point here is that the contra factual reality cannot be the non-stable, non-desirable, illusory world of perfect stagnation. Policies trying to push the economy towards the imaginary fixed point of perfect competition might actually be harmful. One gets a lot of un-intended side effects when deregulating and privatizing. The regulators wanting many, non-dominating firms – and ending up with unregulated monopolies. These are generally more efficient than the armada of small firms – that's why they won the competitive game, but still they might squander resources on advertising, on generous option and deals pension-schemes for top managers, and of course the effects of non-innovative, restrictive business strategies.

The theory of perfect competition/stagnation is also an obstacle for a rational discussion or phenomena like price collusion. Baumol (2002, p. 114 ff.) argues that price collusion can be socially beneficial in the presence of externalities – and innovation is a prime example of such externalities/spill-overs. In addition since the theory do not have a theory of how prices are really determined; it cannot see implicit price collusion as the real world incarnation of the auctioneer, of Walrasian "tatônnement". Maybe price collusion is clearly to be preferred to advertising wars, superficial product differentiation, deliberate development of incompatible technologies. That there is no standardisation of chargers for mobile phones is one example among many. And since the theory does not like increasing returns to scale it see imperfections where there in reality are social gains.

Since the GE-theory is static it is blind to the fact that profit maximization makes the firm a monopolist in spe⁸. For the same reason GE-theory do not have any room for heterogeneity it is not interested in the different strategies and corporate cultures of firms – that is their strategy for profit maximisation. There is a marked difference between the business practice of let's say Microsoft and Apple. Microsoft buys up new ideas/competitors, Apple is much more innovative. The old state monopolists

⁸ At this level of abstraction it can be considered general tendency. In reality a lot of persons and firms are satisfiers. They want to achieve something, and as soon – and as long as they can keep a certain (normal) standard of income they will maximise other things.

in the telecom sector in the Nordic countries created the NMT-standard. They did a lot of ground work for the new GSM standard so any simplified picture of monopoly (state or private) equals stagnation is denied by facts. As Stiglitz and Walsh (2003) write:

Not all monopolists stand pat, of course. Bell Labs, the research division of AT&T, was a fountain of important innovations throughout the period which AT&T was a virtual monopoly. The laser and the transistor are but two of its innovations.
(p. 271)

Some researchers argue that there are mechanisms that induce the big firms to innovate. In "The Economists", 20th of May, in a review of this topic The Economist writes:

... compelling evidence that monopolists stifle innovation is harder to come by than simple theory suggests. Joseph Schumpeter, an Austrian economist, pointed out many years ago that established firms play a big role in innovation. In modern times, it appears that many product innovations, in industries from razor blades to software, are made by companies that have a dominant share of the market. Most mainstream economists, however, have had difficulty explaining why this might be so. Kenneth Arrow, a Nobel prize-winner, once posed the issue as a paradox. Economic theory says that a monopolist should have far less incentive to invest in creating innovations than a firm in a competitive environment: experience suggests otherwise. How can this be so? [...]

A new paper by Federico Etro⁹, of the University of Milan, aims to resolve Mr Arrow's paradox. He sets out a model in which a market leader has a greater incentive than any other firm to keep innovating and thus stay on top. Blessed with scale and market knowledge, it is better placed than potential rivals to commit itself to financing innovations. Oddly – paradoxically, if you like – in fighting to maintain its monopoly it acts more competitively than firms in markets in which there is no obviously dominant player.

But what if there are barriers to entry? These tend to make the dominant firm less aggressive in investing in new technologies – in essence, because its monopoly with the existing technology is less likely to be challenged. Over time, however, other companies can innovate and gradually overcome the barriers – "leapfrogging", as Mr Etro calls it. Meanwhile, the monopolist lives on marked time, burning off the fat of its past innovations.

The essence of this is that – compared to the previous monopolist – not to speak of any situation resembling perfect stagnation – monopolistic competition creates lower prices and more production. The restaurant sector is marked by few possibilities to create increasing returns to scale. But MacDonaldis and other restaurant chains by being innovative in "industrializing" the production of meals

⁹ "Innovation by Leaders". Economic Journal, April 2004.

and services did capture a large share of the market, by lower prices and higher volume. There is no other way to get a larger market share.

1.8. Conclusions

The aim of this paper was to contribute to the un-locking of economic theory from the straight-jacket of static equilibrium using discussing one of it's most well known results: that price setting behaviour leads to higher prices and lower volume.

The text-books examined contain all the necessary stylised facts in order to reach the opposite and correct result: that a dominant, "monopolistic" - price setting behaviour in the market leads to lower price and higher volume due to the innovative efforts of an increasing returns to scale character. The text-books describes the importance of increasing returns to scale, of innovation, but do not draw the conclusions. This is because the text books are not able to escape the static framework. Samuelson and Nordhaus conclude this way under the heading "Balance sheet on Imperfect Competition:

"Exercise of monopoly power leads to economic inefficiency when price rises above marginal costs, and deterioration in quality may also occur. Empirical studies indicate that the deadweight or efficiency losses from imperfect competition are small relative to the national product." (p. 194).

If Samuelson and Nordhaus are correct regarding the size of the inefficiency is not the point here. The main points are that:

- a) That profit-maximising leads to the innovative creation of increasing returns to scale, destroying the possibility of a perfect competition solution.
- b) That the forces of real competition destroys the preconditions for perfect competition, real comparisons of products are obscured by advertising, product differentiation etc. Again this destroys the precondition of perfect competition. When public authorities publish the "true" prices they contribute to monopolisation, or more precisely to fewer actors in the market. The faster the fewer "frictions", "transaction costs" etc. there are.
- c) In order to fit the stylized facts of innovation and market structure, the myth of the monopoly case must no longer be propagated. Increasing returns to scale must be the fundament for any economic theory of industrial capitalism.

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