

Is competition necessarily beneficial for consumers?

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Firstly, I shall summarise the Neo-Classical Economic interpretation of the maximisation of social welfare through the concept of perfect competition versus monopolies. Secondly, I shall state a range of empirical evidence drawn from various sources negating the Neo-Classical interpretation, from which it shall become clear in what situations the Neo-Classical model fails. Lastly, I shall outline a game theory explanation of the typical case where monopoly invariably outperforms competition.

The Neo-Classical Economic Interpretation

According to this interpretation, social welfare (in the sense of maximising allocative efficiency¹) is maximised only under perfect competition where infinitely tiny (relative to all other competing) firms are price takers². In contrast, monopolies, whom are price setters through their ability to affect their market, create a deadweight loss to society as output is lower than is socially optimal³.

This model is summarised by the top graph in Figure 1 below where P_m and Q_m are aggregate equilibrium price & quantity for monopolies and P_{pc} and Q_{pc} are for perfectly competitive firms. The graph on the bottom is that for a single perfectly competitive firm, with its straight line fixed price.

¹ By 'allocative efficiency' I mean reaching a Pareto Efficient Optimum whereby any further change would make the aggregate of consumers and firms (ie; society) worse off according to the model.

² Where Price = Marginal Cost = Marginal Revenue and thus no economic profit is made in equilibrium.

³ Where Price \geq (Marginal Cost = Marginal Revenue) and thus a sustained economic profit is made.

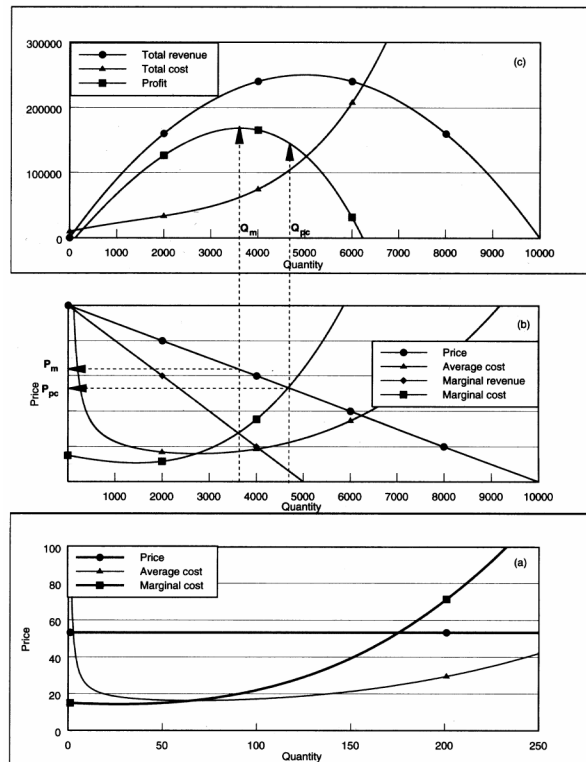


Figure 1: The Neo-Classical interpretation of competitive firms and monopolies

Much of this interpretation requires an upward sloping supply curve, something unusual in certain kinds of industry as we shall shortly see.

Empirical Evidence That Competition Is Not Necessarily Beneficial

Under the Neo-Classical model, a natural monopoly occurs when there are significant returns to scale which cause supply curves to slope downward⁴. The problem is that empirically, a lot of industries **do** have significant returns to scale which explains the prevalence of oligopolies in our society. As Chapter 12 in *Microeconomics And Behaviour* by Robert H. Frank says, “When the LAC curve ... is downward sloping ... the least costly way to serve the market is to concentrate production in the hands of a single firm”:

1. Eiteman and Guthrie’s 1952 *American Economic Review* Paper ‘The shape of the average cost curve’ where 316 versus 18 manufacturing firms (and 1020 versus 62 products) were reported by managers as having *diminishing* rather than rising marginal costs.

⁴ Specifically, this is caused by a downward sloping rather than U-shaped Long-Run Average Cost Curve and/or a pecuniary economy.

2. According to renowned Economist János Kornai, capitalism is a demand-constrained economy⁵ which causes the building of excess supply capacity in order to be able to exploit short-term market opportunities. Excess supply capacity means significant economies of scale⁶.

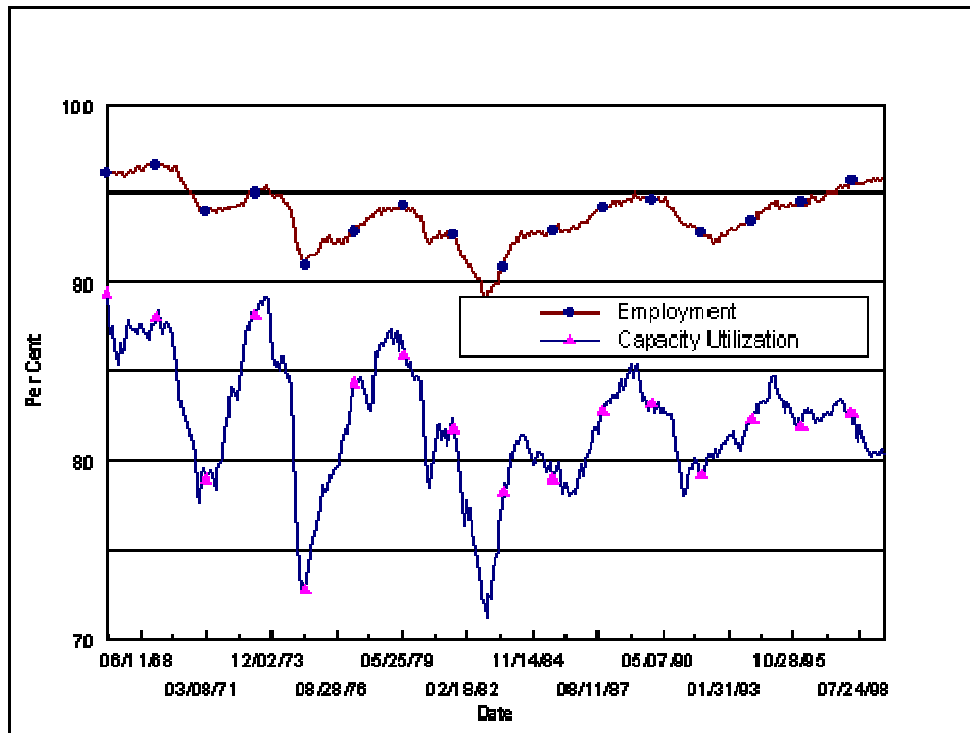


Figure 2: The relationship between capacity utilisation and employment in the USA

Figure 2 above shows the empirical evidence supporting this theory during recent years (with capacity utilisation never exceeding 90%, and falling to 80% during the Internet boom)⁷. One will note that capacity utilisation *falls* during booms as firms build even more excess capacity in anticipation of increasing output.

3. Stefan Felder's 1996 *European Economic Review* Paper 'Fire insurance in Germany: A comparison of price-performance between state monopolies and competitive regions' indicates that there are substantial scale economies in the insurance sector.

⁵ Whereas communism was a resource-constrained economy characterised by shortages. This is explained in depth in his paper 'Economics of Shortage'.

⁶ The work of the critical Economist Piero Sraffa makes extensive use of this behaviour in the building of his alternative form of microeconomics. See Sraffa, P., 1960, *Production of Commodities by Means of Commodities: Prelude to a Critique of Political Economy*, Cambridge University Press, Cambridge.

⁷ According to official US government statistics.

4. The most obvious example of markets with significant returns to scale are information goods such as music, movies and computer software with meta-goods (such as designs for goods) being a major driver of global economic growth for the last twenty years. In *Information Rules: A Strategic Guide to the Network Economy* by Carl Shapiro and Hal Varian, it is explained how information goods have extremely high production costs for the first copy but for the second copy onwards, reproduction costs are almost zero. Therefore, the LAC slopes very definitely downwards, approaching zero with increasing quantity – and unsurprisingly, there exist oligopolies in all of the information economy sectors.
5. One of the most famous anti-trust acts in the USA, the break-up of Ma Bell into seven ‘Baby Bells’, has been made pointless over time by market forces inexorably in favour of monopoly. With reconsolidation of the ‘Baby Bells’ happening at an ever quicker pace through buy-outs by multinational telecommunications corporations (and there was even a direct merger between NYNEX and Bell Atlantic⁸), it will not be long before the status quo has been restored. *Except* of course that the USA has a visibly retrograde telecommunications system which is incompatible with every other country on the planet⁹. With hindsight, all that was achieved by that anti-trust action was a temporary removal of monopoly and decades long damage to US telecommunications quality¹⁰.

Forcing competition into naturally monopolistic markets is socially very costly:

1. Thomas von Ungern-Sternberg’s 1996 *European Economic Review* Paper ‘The limits of competition: Housing insurance in Switzerland’ measured a 70% price increase, with much of this due to introducing hitherto unnecessary costs of competition (which we shall deal with next section).
2. Karl Epple’s 1996 *European Economic Review* Paper ‘The transition from monopoly to competition: The case of housing insurance in Baden-Württemberg’ also shows a large price increase (> 60%), decrease in quality of coverage and the emergence of a number of people who can’t get coverage at all.

⁸ http://www.pbs.org/newshour/bb/business/april96/the_bells_4-22.html

⁹ I speak here of the phones and switching equipment being incompatible, most US mobile phones not using GSM like any other and those that do using an incompatible frequency.

¹⁰ It is well worth reading an interview about the Bell merger at http://www.pbs.org/newshour/bb/business/april96/bell_merger_4-2.html where the answer given for why the merger was “Mainly for efficiencies. There is enormous cost savings to be taken out by having two companies take some of those operations and make it one”.

3. Water deregulation in the UK was a disaster:

Water and sewerage companies, England and Wales. Total all households, measured and unmeasured water and sewerage bills. £ 1998/99

			1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	% rise 89/90-98/99
Anglian	cash		157	178	205	226	244	259	272	279	282	288	84%
	real	terms	217	224	247	264	280	289	294	294	288	288	33%
DwrCymru	cash		149	169	197	218	237	255	263	272	281	294	98%
	real	terms	206	214	237	255	272	285	284	287	287	294	43%
NorthWest	cash		111	125	143	156	170	182	194	208	221	234	111%
	real	terms	153	157	172	182	195	204	210	219	226	234	53%
Northumbrian	cash		108	123	148	160	177	188	197	207	216	229	112%
	real	terms	149	155	178	186	203	210	213	218	221	229	53%
SevernTrent	cash		107	122	139	153	166	181	189	200	208	222	108%
	real	terms	148	153	168	178	190	203	205	211	213	222	50%
SouthWest	cash		147	165	194	231	268	304	318	329	339	354	142%
	real	terms	203	208	234	270	308	340	344	347	347	354	75%
Southern	cash		124	138	161	173	183	197	214	229	244	257	107%
	real	terms	172	174	194	202	210	220	231	241	249	257	49%
Thames	cash		101	114	130	141	153	163	174	182	190	201	99%
	real	terms	140	144	156	164	176	182	188	192	194	201	44%
Wessex	cash		139	155	178	193	210	223	234	243	252	265	91%
	real	terms	192	196	215	225	241	249	253	257	258	265	38%
Yorkshire	cash		123	136	155	166	179	192	204	213	216	226	84%
	real	terms	170	172	187	194	206	215	221	225	221	226	33%
England&Wales	cash		120	135	156	171	186	199	210	221	229	242	102%
	real	terms	166	170	188	199	213	223	228	233	234	242	46%

Real terms = adjusted to 1998/99 prices using RPI deflator . E & W totals include water only companies

Source: OFWAT Memorandum 18 March 1998, in House of Commons Research paper 98/117 December 1998

4. In France where both private and public water services exist in neighbouring regions, privatised water prices are between 10% and 15% higher than public sector water prices according to the DGCCRF¹¹.
5. Deregulation of California's Electricity Industry raised prices by 49%, gave the generating companies massive profits while many of the utilities went into bankruptcy. Only Los Angeles' electricity system remained municipal where prices dropped in real terms during the same time period¹².

¹¹ DGCCRF (Direction générale de la consommation, de la concurrence et de la répression des fraudes); published in "la Réforme de la politique de l'eau" Conseil Economique et Social ; Journal officiel de la République Française 2000 No. 14 ; November 2000

¹² Source is evidence to the Canadian Walkerton Enquiry, <http://www.psiu.org/reports/2001-07-W-walkerton.doc>.

Game Theoretical Illustration of the Advantages of Monopoly over Competition

My main reference for this is Harold Hotelling's 1929 *The Economic Journal* Paper 'Stability in Competition' and 'Monopolistic Competition – A Spatial Interpretation' in chapter 13 of *Microeconomics And Behaviour* by Robert H. Frank. In this, it is imagined that two hot dog vendors working a strip wish to maximise their profits in which one of the cases considered is where they effectively segment off their part of the strip to their exclusive control (this being equivalent to one firm operating both hot dog vending machines ie; a monopoly). In this situation, each vendor's profit function is $\pi_A = \frac{1}{2}c (1 + \frac{1}{3} (a-b))^2$ & $\pi_B = \frac{1}{2}c (1 - \frac{1}{3} (a-b))^2$ where c is the unit cost of transportation of the buyer, a is vendor A's distance from end of market, b is vendor B's distance from end of market and l is the length of the strip. Each vendor apportions himself an equal amount of the strip as customers will go to the nearest vendor – thus, total profits are equally divided between them (for convenience, vendor A shall be on the left and vendor B on the right).

Now suppose that vendor B, knowing vendor A's location, moves his stall rightward such that more of the strip on average is closer to him by sidling right up next to vendor A. He has effectively taken half vendor A's profits as he is capturing trade from his part plus half vendor A's part. Obviously, vendor A also can react this way and thus a "dance" is established with each vendor trying to maximise their catchment area¹³.

But how does this "dance" affect the customers? Hotelling gives the cost to consumers as $\frac{1}{2}c (a^2 + b^2 + x^2 + y^2)$ where x and y are the price differentials. If one also factors in moving costs of the machine to the vendor every time he moves, plus extra advertising costs and perhaps a representative or two to persuade customers to wait for their vendor to arrive instead of going to another closer one, one quickly sees that large *costs of competition* are generated – all of which, by necessity, must be passed on to the consumer as higher prices. If a monopoly presided here, costs to society could be considerably lower and service quality higher – much as the fire insurance deregulation examples above empirically showed¹⁴.

¹³ As Harold Hotelling was writing before the chaotic nature of such iterative equations was fully realised, he simply states "... this value of b cannot be found by differentiation".

¹⁴ Indeed, Hotelling states "If the stores be thought of as movable, the wastefulness of private profit-seeking management becomes even more striking".

Conclusion

It is clear from the empirical evidence that competition is not necessarily beneficial for the consumer. However, this paper does not mean to suggest that monopoly always outperforms competition – rather, that it outperforms competition in certain circumstances:

1. Where the supply curve is downward sloping (there are significant economies of scale).
2. Where the good or service provided is a staple commodity where people prefer homogeneity, stability and reliability over innovation.
3. Where the costs of competition are a significant proportion of operation.

In the empirical evidence shown above, these two or more of these criteria applied to all of them and thus, alternative mechanisms should have been used to deal with them **where they were clearly abusing their position**. As an example of alternative mechanisms, the following have been employed in the past:

1. Force the monopoly to sell older versions of its products at bargain prices. This strongly encourages the monopoly to innovate when it releases new products¹⁵.
2. Force the monopoly to lower barriers to competition by introducing a rising daily fine if certain barriers are not removed (eg; internal documentation about or access to proprietary interfaces¹⁶).
3. Imposition of price increase limits¹⁷.

¹⁵ This solution would be ideal for companies such as Microsoft who have found that releasing poorly tested slightly enhanced versions of their software maximises revenue.

¹⁶ For example, using this method the Spanish government compelled Telefonica to unbundle the local loop in its telephone exchanges to allow in ADSL providers. The result was one of the fastest unbundlings anywhere in Europe.

¹⁷ This can have good and bad benefits such as preventing future investment, but it is already very popular with politicians in all OECD countries.

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