

'Protecting Consumers by Protecting Competition': Does Behavioural Economics Support this Contention?

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1. Introduction

It is well established that competition tends to bring consumer and welfare benefits when consumers are fully rational and possess the requisite information to exercise choice. A natural question to ask, therefore, is whether our predisposition towards the benefits of competition extends to situations where consumers are boundedly rational or perhaps not rational at all? This is an open question in economics, precisely because, until recently, economists have not turned their attention to implications of findings from psychological studies of actual consumer behaviour for industrial organisation issues.

In this paper, I am not going to consider the impact of bounded rationality or imperfect information. There, industrial organisation economics has a lot to say.¹ The prescription of that literature is that competition may sometimes and sometimes not overcome the problems associated with imperfect information but generally more competition does not make matters worse. The policy solution is to reduce information gaps and 'educate' consumers as to appropriate options available.

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¹ This has impacted upon competition regulators. For instance, the regulation of mobile termination charges is driven primarily by the problems faced by consumers in actually distinguishing amongst mobile carriers they may be calling (Gans and King, 2000).

What I will consider is the new literature in behavioural economics.² This literature considers what happens when consumers have systemic biases in their decisions and, in particular, when their decisions are heavily influenced by local or situational influences and less by their regard to their long-run well being. While consumer judgments regarding probabilities and risk certainly fall into this category, what I will concentrate on is 'short-termism.' This arises when consumers place too much weight on the present and too little weight on the future in their decision making. Moreover, not only does this happen, but discounting appears to accelerate as the time before payoffs are realised becomes nearer. Psychologists generally model this as a situation where consumers are hyperbolic discounters and, recently, economists have used an amended version of this to study market interactions when consumers face problems of 'short-termism' and a lack of self-control.

O'Donoghue and Rabin (1999) provide a representative example. People are offered a choice between doing a painful 7 hour task on the 1st April and a painful 8 hour task on 15th April. Most opt for the earlier date but as the 1st April loom, people take advantage of opportunities to put off the task until the 15th. As time grows short, we appear to discount later pain.

Practically, what this means is that hyperbolic discounters will take out gym memberships but end up not using the gym as much as they would have had they committed to their consumption upfront. Hyperbolic discounters will also incur more debt when they don't have to commit to a repayment schedule than when they do. Finally, hyperbolic discounters may consume more of a product than they should have had they investigated the availability and pricing of complementary products.

In effect, there are two related consumer problems that may come in to play. The first is *self-control*. Consumers would like to commit up front to certain aspects of their own future behaviour but cannot. The second is '*naivety*' or 'non-rational expectations' where consumers do not realise they would like to commit up front to those things. The distinction is important as we study the response of firms to real consumer behaviour. Put simply, when consumers know they lack self-control they will value and demand products that give them such controls. However, when consumers do not realise this, there is no demand for ways of overcoming it and exploitation may occur. Firms will adjust their own pricing strategies to take advantage of consumer misperceptions about the value of their own consumption.

² This literature is associated with the work of Richard Thaler, Matthew Rabin, Ted O'Donoghue, David Laibson, Roland Benabou and Jean Tirole. It has even found its way into standard textbooks; e.g., the 3rd (forthcoming) Edition of Gans, King and Mankiw (2005).

The format of this paper is as follows. In section 2, I will argue that the main consequence of a lack of self-control and naivety is that consumers will purchase *too much* of a product at a given price. Taking this and amending supply and demand analysis accordingly, I will demonstrate that this gives rise to welfare reductions even in competitive markets and that, in a very simple framework, these things are exacerbated by the strength of competition. In sections 3 and 4, I will turn to consider what this means for two competition policy issues that have surfaced in recent years: the regulation of credit card associations and the concern with bundling. A final section concludes.

2. A Simple Framework

The contention that is often proffered is that when consumers face difficulties in making rational choices, a competitive market may assist in bringing them better outcomes as firms will have an incentive to provide products that make consumers better-off; whether they are rational or not. Consider, for example, concern about pricing in after-markets (e.g., for ink for ink jet printers). Shapiro (1995) articulates the standard economic response to such concerns, namely, that there will be an incentive for firms to commit and be transparent about prices in those after-markets so as to attract more customers to their overall product line.

If consumers are fully rational, then more competition assists in this process. However, what happens if consumers are not fully rational? In this case, consumers may pay insufficient attention to information about after-markets and firms may not derive an earlier advantage from providing it. In this situation, competition may not assist. I will argue here that, in fact, it may detract from goals of improving welfare.³ This is precisely because departures from rationality mean that consumers demand products they would not otherwise want. Competition is good at providing what consumers demand and not what they would otherwise want, so welfare may be harmed.

³ This also impacts on our notions of market definition. What Shapiro (1995) was arguing was that in the ink jet case, the market should include the complementary ink product. However, when actual consumer behaviour is taken into account that may not be a reasonable approach and the after-market may be considered separately. Put simply, if consumers do not consider the price of the complement when buying the initial product, that price does not impact upon their demand and so would normally be considered a separate market. On the other hand, the prices in both markets do impact on firm pricing strategies. This suggests that market definition will be a subtler issue in these cases.

Representative Model from Behavioural Economics

To illustrate this, I first consider a standard set of results from behavioural economics and illustrate how these might interact with firm pricing behaviour. In so doing, I follow the work of DellaVigna and Mulmendier (2004).

Consider a simple representation of a consumer choice problem over complementary products. In period 1, consumers have a choice of purchasing one product or not. If they purchase this product and only if they do so, they have a separate option of purchasing a product in period 2. In period 3, they receive the benefits or consequences of joint consumption. Some examples of this include:

- Gym membership: (1) take out gym membership; (2) actually go to the gym; (3) get healthier.
- Credit cards: (1) make a purchase on a credit card; (2) revolve the balance over in the next month; (3) face interest payments.
- Mobile Phones: (1) go on a mobile phone plan; (2) exercise option not to renew the plan; (3) costs of new plan.
- Hotels: (1) book a hotel; (2) learn call costs; (3) make calls from that hotel.
- Ink Jet Printers: (1) buy an ink jet printer; (2) learn ink costs; (3) buy ink for the printer.
- Movies: (1) purchase movie tickets; (2) learn pop-corn price; (3) purchase pop-corn.

My contention here is that when consumers both lack self-control and are naïve about it, they will over-consume at least the first product they choose.

To see this, consider gym membership. In this situation, a typical consumer will anticipate the frequency with which they will go to the gym, x , and work out whether a membership fee, F , and on-going gym visit price, p , makes it worthwhile to take out that membership. A fully rational consumer will anticipate their expected visit frequency based on p and choose whether to accept F accordingly. Specifically, if the benefit of a gym visit is b , then a consumer will get surplus of $b - p$ for each visit. Over the course of a year, their expected surplus is $52(b - p)$ and so would accept a membership fee F that is less than this amount but not one that is higher.

However, consumers may not be fully rational. For instance, on the day they would have intended to go to the gym they may face additional – let's call them procrastination – costs, c . In that case, it may be the case that $b - p < c$. In this situation, the consumer won't go to the gym on that day. A *sophisticated* consumer will anticipate this type of lack of self control and will only take out a

gym membership that offered a sufficiently low p that $b - p > c$. Note, however, that because of the procrastination costs their total surplus over a year will be $52(b - p - c)$ for p sufficiently low. Anticipating this, gyms will lower p (perhaps to 0) and raise F .

A problem arises when consumers are *naïve* and do not anticipate that they will face procrastination costs. In this case, it may appear that those consumers will not value a lower p as much and so will not accept as high an F . However, because they anticipate receiving higher surplus for actual gym visits than they actually will, they overvalue a drop in p relative to any increase in F . The gym gains, however, as the consumer effectively pays for usage they do not use. Thus, F is higher and p lower than in the sophisticated consumer case.

In the end, for the same given gym membership fee, naïve consumers over-consume relative to what they would do if they were sophisticated. Regardless of the degree of competition, this weighing of price towards upfront fees and away from on-going usage costs will be increasingly used by firms if there is a larger proportion of a naïve consumer out there. Competition will affect, however, the levels of these prices.

The credit card case is distinct from the gym membership case in that the benefits come first and costs later. Again, fully rational consumers will optimally be charged p (the credit card interest rate) on the basis of marginal costs while sophisticated consumers who lack self-control will happily accept a higher p to commit themselves not to borrow too much. But naïve consumers will be somewhat indifferent between a lower upfront fee and higher interest rate even though firms will realise that higher interest rates will give them more profits. Thus, firms will exploit this by tilting prices towards very low or zero upfront fees and higher interest rates.

Ultimately, naïve consumers end up accepting too many credit cards and also consuming too many credit card loans. Competition will not affect this qualitative fact but will impact upon overall pricing levels.

It is worth noting here that the existence of switching costs only makes matters worse for naïve consumers. Those consumers now underestimate their renewal rate (thinking they would be more willing to switch suppliers than they actually will be at the time). Firms will anticipate this and be able to raise usage fees further without losing customers. If firms can choose cancellation costs, they will choose to make this high to naïve customers who underestimate their renewal rate and so, at the time of renewal, the firm will be able to actually secure a

higher renewal fee. (For gym membership, they anticipate being able to get renewals more easily if they automate the renewal process).⁴

What all this means is the naïve consumers tend to over-consume. That is, based on the prices they actually pay, they end up purchasing too much. This is either because they over-estimate valuable usage or because they under-estimate the costs they will later incur. When there are switching costs involved, they under-estimate those costs and hence, overvalue future competition. This means they will be willing to accept less upfront compensation to overcome those costs. In this respect, they end up paying too much for the goods and services they ultimately receive.

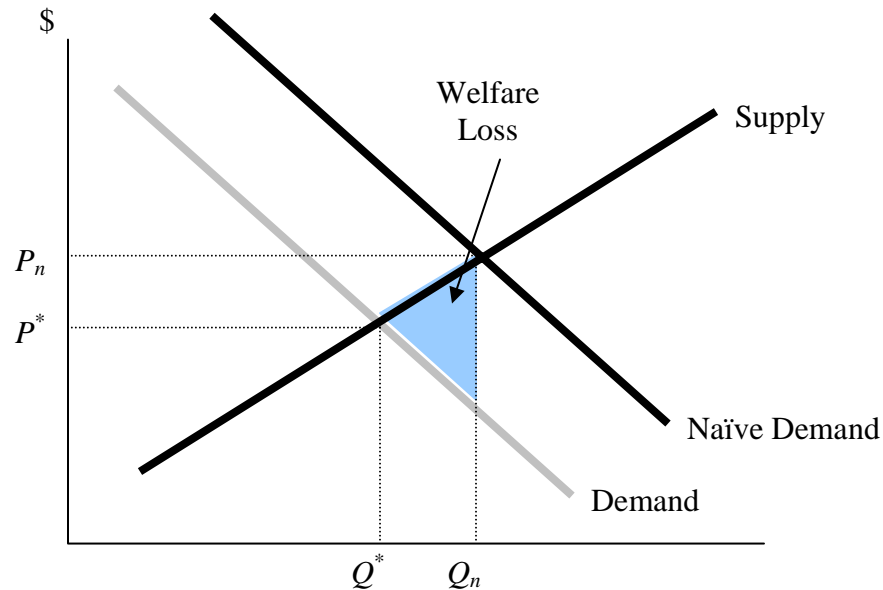
It is worth noting here that over-consumption as a result of naivety can also occur when consumers simply fail to anticipate the price of complementary goods and to invest in options to substitute away from those goods if possible. In this case, naïve consumers will fail to make those investments and end up consuming more of the complementary good than they need to. Indeed, given what they have to pay for both goods, they may have preferred not to purchase either good if they had been more sophisticated. Thus, they will end up making more calls from hotels, consuming more pop-corn at the movies and may even up with an unwanted ink jet printer than their sophisticated counterparts who would bring a mobile or treats or find alternative ink options.

An Amended Demand and Supply Analysis

It is very easy to represent the consequences of this behaviour in economics. Figure 1 shows a demand and supply diagram for a market. Q^* is the equilibrium level of consumption that would occur if consumers were sophisticated and P^* is the resulting price. Naïve consumers have a demand that is 'too high.' This is what they base their consumption on, so in equilibrium, consumption, Q_n is higher and P_n is higher than the level that would otherwise result.

⁴ In effect, this leads to a bargaining and 'really ripped off' conclusion only reinforcing the negative impact of switching costs surveyed by Farrell and Shapiro (2004).

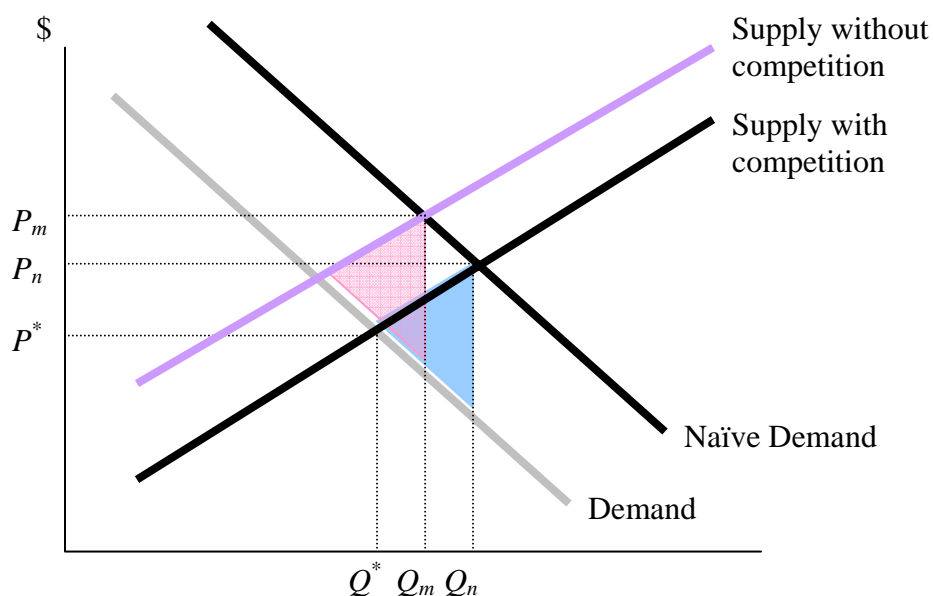
Figure 1: Equilibrium With Naïve Consumers



The shaded area represents the welfare loss from such over-consumption. Notice that the loss to consumers is larger than this while firms' losses are partially offset by higher producer surplus. Put simply, each consumer ends up paying a price higher than the actual marginal utility they receive from consumption. In this sense, they regret their purchases.

What is the impact of a reduction in competition in this environment? This can be most easily represented by a decrease in supply (i.e., as a firm with more monopoly power will supply less and charge a higher price relative to a more competitive one). The new equilibrium is at a price of P_m and quantity, Q_m . This is illustrated in Figure 2. Notice that this results in a reduction in consumption and over-consumption and hence, a potential gain in welfare. The idea here is that with monopoly power, fixed fees will be higher as firms attempt to earn higher overall margins from fewer customers.

Figure 2: Effect of Reduced Competition



This shows a gain in total welfare from a reduction in competition. Whether there is a gain in consumer welfare is another matter. In either case, consumers are over-consuming given the prices they are paying. A formal analysis would probably identify when consumers might gain. However, I have not attempted this for the present paper.

This highlights a basic tension between policies to promote competition and policies to protect consumers. Competition policy is about curing under-consumption due to market power. Consumer policy is about curing over-consumption due to naivety and firm practices. In any situation where both issues arise the usual focus of the regulator on prices and quantities will lead to a conflict. Reducing prices may exacerbate consumer protection issues. Protecting consumers may itself raise competition issues.

3. Credit Card Regulation

I now turn to consider the impact of taking into account actual consumer behaviour on the analysis of competition policy issues. This section will discuss credit card regulation and I will turn to consider bundling in Section 4.

The RBA and ACCC set out to reform the credit card system in 2001. Their joint study began with a discussion of rising usage of credit cards (rather than debit) and rising outstanding balances on credit card loans. All this appeared to point

to Australia heading down a path similar to the US where credit card debt was at record highs, credit card interest rates were several 100 percent mark-ups over market rates and solicitations exceeded the billion mark.⁵

However, the RBA based its reforms on competition concerns alone. They got rid of prohibitions on surcharges at the point of sale, reduced the interchange fee and opened up access; particularly to card issuing. In the end, however, growth in credit card balances in 2004 was as high as it was in 2002 and interest rates were still above 16%. Credit card application fees remained low or non-existent, loyalty points schemes continued and the 'float' remained. This all suggests that little has changed in the structure of pricing and behaviour in this industry.

The RBA approach was governed by economics and economics based on the assumptions that consumers were rational. To them, this meant that the likely culprit for any concern lay in competition issues. But surcharging had been permitted elsewhere but few had taken it up. In the US, interchange fees had risen steadily for years while in Australia they had not moved in two decades. Finally, there was plenty of competition in card issuing with the main pressure for entry coming from non-bank entities such as large retailers. The idea that competition was really the heart of any problem in Australia was very weak.

My work during the reform time tended to find some support for the RBA reforms (Gans and King, 2003b). Opening up access and allowing surcharging would at best do no harm and may help. The interchange fee was for all intents and purposes likely to be neutral economic instrument and so changing it would also not likely do harm. But this analysis generally also relied on the assumption of rational consumer behaviour.⁶

Seen through the lens of behavioural economics, a more appropriate logic for the need for reform emerges. The peculiar structure of credit card fees with inducements to hold cards but higher usage changes in the form of high interest rates mimics problems of self-control but also problems of naivety. It is not so much the pricing structure (which could be a commitment device) but the practices – especially in the US – that are indicative of this. The reduction in minimum payments leading to more borrowing as well as very low introductory rates and options to increase rates ex post are all practices that make little sense without an assumption that significant numbers of consumers are naïve.

But what does this mean for regulation of the credit card industry in Australia? On this score, permitting surcharging would be desirable – mandating it better

⁵ See Ausubel (1991, 1999).

⁶ Actually, the neutrality of interchange fees did not rely on this and we showed that it held even when consumers were hyperbolic and somewhat naïve (Gans and King, 2003a).

still. After all, if consumers underweight future costs raising current costs of using credit cards would be useful. The regulation of the interchange fee may be seen as a means of increasing the costs of the credit functionality of credit cards but even with naïve consumers is still likely to be neutral; so there are no changes there.

What this points to is real concern about opening up access to credit card issuing. In effect, this was to allow closer integration between the provision of credit and retailing. However, to the extent that such integration aligns those interests, with naïve consumers that alignment is unlikely to be for the better. It allows targeted inducements to hold credit card balances at the point of sale and may even provide a means of creating switching costs amongst retailers. Add to that the possibility that increased competition may lead to increased over-consumption and it is unclear whether the RBA reforms will have an impact on levels of consumer debt in the way they wanted.

This highlights to me, and hopefully regulators, the real problems in relying purely on the assumptions of rational consumers when reforming an industry that primarily deals with retail customers. Unlike other avenues of competition reform that concern practices of firms in competition with one another, here the issues are about the practices in the industry and relationship between any firm and consumers. In this case, it appears that neglecting some of the lessons of behavioural economics could, indeed, lead to an exacerbation of undesirable trends rather than their elimination.

4. Bundling

The competition policy concern over bundling arises when a firm has market power in some base product and uses bundled prices to extend that market power into a complementary or add-on product. For complementary products, leverage comes from the fact that competitors cannot match the bundled discount as this would result in a return below their marginal cost. This issue has emerged in petrol-grocery alliances. For add-ons, the issue is that having bought the base product, customers are locked-in and must purchase complementary products from the supplier of the base product. This issue has emerged in the supply of set-top boxes for cable television.

Gabaix and Laibson (2004) study the impact of consumer naivety on add-on pricing. They demonstrate the following:

- *Competition does not help*: when some consumers are sophisticated and realise add-on pricing issues while some consumers are naïve and don't,

add-on prices are set either to extract surplus from the sophisticates or to exclude them and to extract surplus from the naïve consumers. Interestingly, when add-on prices are so high that sophisticates substitute away from add-on products, the price of the base good reflects this and sophisticates are cross-subsidised by the naïve customers. That is, competition drives that price down and recognises that additional surplus will be captured by the firm from naïves. If firms can't tell who is sophisticated and who is naïve this surplus gets competed away but the naïves return it ex post.

- *Education does not help*: firms have no incentive to educate the naïve customers. By doing this, they create consumers who prefer to go to firms who offer high add-on pricing because they then receive the cross-subsidy through initial prices. Thus, education causes firms to lose market share.

Notice that, if it were the case, that overall market demand for both products was not inelastic, then it may be that a monopolist would have more incentive to educate naïve customers. So long as it does not want to actually charge sophisticates lower prices (as a means of price discrimination) it pay increase its overall demand by having consumers understand the full value of their products. Under competition, neither the sophisticates nor naïve customers expect to get much surplus from consumption of the complementary product and, by definition, this must decrease their overall demand for the products. In this sense, there is a free rider effect under competition that diminishes incentives to educate consumers or commit to add-on prices.

What this suggests is that if competition is encouraged then it will also be worthwhile to take an active regulatory role in educating consumers as such education will be underprovided by the market. Of course, if customer lock-in can be minimised, then the tying effect of add-ons will not arise. Naïve consumers will face more options when they come to consider add-ons that they will not have to invest in ex ante. This will constrain add-on pricing and reduce the distortion on initial pricing.

How does this extend to the situation of bundling? In the case of shopper dockets, naïve consumers overestimate their ability and willingness to obtain petrol discounts when choosing their supermarket. In this case, the supermarket gets the benefit of increased consumers but without having to pay for the discount later on (especially if these are resulting in prices below marginal cost). Sophisticates are still attracted by the bundled discount but, if there are competitive bundles being offered, appropriate part of the returns that would be received by the aligned chains. While some economic forces have been

appreciated in the debate over shopper docketing,⁷ there has been an underweighting of costs that might arise when consumers are not fully rational.

5. Conclusion

This all means that we cannot rely on competition to protect naïve consumers from pricing and other practices that would induce them to over-consume. That over-consumption is coming because the market is providing them what they perceive they want and distorts things even further in delivering it to them. While I would hesitate to say that a move away from competition would be similarly desirable, there is at least a case to be made here.

But what does this suggest about other regulations that might protect consumers. Consider price regulation. This could involve setting usage charges but on what basis would these be set. Recall that such charges may optimally be above or below marginal costs if agents have problems of self-control. Thus, at this stage, we have no benchmark upon which to set them. We could alternatively regulate fixed fees but this would result in changes to usage prices that may be undesirable (e.g., a zero gym fee would lead to above marginal cost pricing for usage).

This does not mean, however, that we are left with ‘education’ of consumers as the only feasible solution; not that it is ever a bad thing. Behavioural economics paired with a careful analysis of firm incentives can yield an insight into undesirable practices. For example, disconnection fees are worse than connection fees;⁸ contract renewal should not be automatic; and switching costs should be made as low as possible. These practices rarely have an obvious efficiency rationale and a skeptical eye can safely be cast upon them.⁹ In the end, a careful examination of an industry, its pricing and consumer behaviour can lead us to identify problematic practices. By eliminating those perhaps competition can serve more useful ends.

⁷ See the discussions in Gans and King (2004, 2005).

⁸ Gans (2000) studies these and concludes that rational consumers will be, in general, indifferent between the two while market power may give rise to some distortions. With hyperbolic consumers, these conclusions are reinforced.

⁹ Indeed, this suggests the usefulness of economics in weeding out practices that may not be in the interests of consumers. A weak rule would be to eliminate practices where that elimination will not harm rational consumers but may benefit others. An even weaker rule would be to eliminate practices for which there exists no theoretical, profit-maximising justification when consumers are rational. See Camerer et.al. (2003) for a comprehensive discussion of these possible rules.

The main conclusion here is that when approaching many competition matters, actual consumer behaviour does have a role to play. This will certainly be the case when competition authorities come to evaluate such things as changes in cross-ownership media laws¹⁰ and the incentives to engage in misleading advertising.¹¹ This does not mean we should abandon economics. Indeed, it is the interplay between real consumers and firms who understand this that is important. Economics can tell us a lot about the behaviour of firms in this context (Glaeser, 2004).

¹⁰ Mullainathan and Shleifer (2003) study how competition can impact on the market for news. Diversity can play an important role – not for most consumers – but for more sophisticated ones who can use multiple biased sources to build a more truthful representation of the facts. Thus, access for a diverse set of consumers may be critical in terms of generating a healthy market for news.

¹¹ To see this, suppose that there is a competitive market and consumers only marginally care about a product brand. In this situation, there is not much return to consumers in gathering information themselves but lots of return to misleading advertising that can lead to a large gain in market share. If consumers forced to learn the truth ex post; cognitive dissonance may still prevent this being proliferated. Word of mouth may not work to unwind the effects of misleading advertising.

References

- Ausubel, L. (1991), "The Failure of Competition in the Credit Card Market," *American Economic Review*, 81 (1), pp.50-81.
- Ausubel, L. (1999), "Adverse Selection in the Credit Card Market," *Working Paper*, Maryland.
- Camerer, C., S. Issacharoff, G. Lowenstein, T. O'Donoghue and M Rabin (2003), "Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism'," *University of Pennsylvania Law Review*, 151 (3), pp.1211-1254
- DellaVigna, S. and U. Mulmendier (2004), "Contract Design and Self-Control: Theory and Evidence," *Quarterly Journal of Economics*, 119 (2), pp.353-402.
- Farrell, J. and P. Klemperer (2004), "Competition and Lock-In: Competition with Switching Costs and Network Effects," *Handbook of Industrial Organization*, Vol.III, North Holland, forthcoming.
- Gabaix, X. and D. Laibson (2004), "Shrouded Attributes and Information Suppression in Competitive Markets," *mimeo.*, Harvard.
- Gans, J.S. (2000), "Network Competition and Consumer Churn," *Information Economics and Policy*, Vol.12, No.2, pp.97-110.
- Gans, J.S. and S.P. King (2000), "Mobile Network Competition, Customer Ignorance and Fixed-to-Mobile Call Prices," *Information Economics and Policy*, Vol.12, No.4, 2000, pp.301-328.
- Gans, J.S. and S.P. King (2003a), "The Neutrality of Interchange Fees in Payment Systems," *Topics in Economic Analysis and Policy*, Vol.3, No.1, Article 1.
- Gans, J.S. and S.P. King (2003b), "Approaches to Regulating Interchange Fees in Payment Systems," *Review of Network Economics*, Vol.2, No.2, June, pp.125-145.
- Gans, J.S. and S.P. King (2004) "Supermarkets and Shopper Dockets: The Australian Experience," *Australian Economic Review*, Vol.37, No.3, pp.311-316.
- Gans, J.S. and S.P. King (2005) "Paying for Loyalty: Product Bundling in Oligopoly," *Journal of Industrial Economics*, (forthcoming).

Gans, J.S., S.P. King and N.G. Mankiw (2005), *Principles of Microeconomics*, 3rd Asia Pacific Edition, Thomson, forthcoming.

Glaeser, E.L. (2004), "Psychology and the Market," *American Economic Review*, 94 (2), pp.408-413.

Mullainathan, S. and A. Shleifer (2003), "The Market for News," *mimeo.*, Harvard.

O'Donoghue, T.D. and M. Rabin (1999), "Doing It Now or Later," *American Economic Review*, 89, pp.103-124.

Shapiro, C. (1995), "Aftermarkets and Consumer Welfare: Making Sense of Kodak," *Antitrust Law Journal*, 63, pp.483-511.