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Can Current Competition Policy Cope with E-commerce?

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E-commerce markets allow consumers to search more effectively and sellers to know the identity of a consumer surfing and to access her data in real-time. Is this likely to cause difficulties for current competition policy? In this article **Paul Grout** *and* **Nir Vulkan** *suggest that it will.*

Introduction

Discrimination in pricing structures is thought to be a critical emergent issue in E-commerce markets. A recent article in the Washington Post provides a good example.

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It reported that Amazon charged different customers different prices for identical DVDs. The evidence suggested that regular users, who are less likely to shop elsewhere, were charged up to 20% more than new users.

The market size for consumer e-commerce is already estimated at $13 billion, and is growing at a rate of 200% per year. In 1998, 76% of retailers already reported selling on-line. On-line revenues account for 9% of total retail sales in the US, and 7% of manufacturers' revenues. However, the volume of e-commerce is likely to rise further with the increased use of new Web-based technologies, such as 'agents'. Agents allow consumers to search, match goods to requirements and compare prices, and for sellers to know the identity of the consumer surfing and access her data in real-time. An obvious question is whether the effect new technologies will have on prices is likely to cause difficulties for current competition policy. Here we suggest it will and give a flavour of some of the problems that will arise.

Focussing on the discrimination issue we identify two types of problems that are likely to emerge. One is the difficulty of defining markets for competition policy and the other arises from the broader strategies available to e-commerce companies.

UK and EU competition policy

the benefit received depends on how many others use it

In April 2000 the UK's 1998 Competition Act came into force bringing competition law in the UK into line with European policy. The core notions, and even the precise wording, are consistent with EU law and for the first time there is now scope to fine offenders significant sums (up to 10% of UK turnover).

The core of the policy rests on two themes - one to police agreements (Article 81 of the Treaty of Amsterdam and Chapter I of the Competition Act) and one to prevent companies abusing a dominant position in a market (Article 82 and Chapter II). Because of the difficulty of providing a precise definition of price discrimination this wording is typically avoided in legal formalisations. The way the Treaty and Act limit discrimination is through a concept of 'dissimilar conditions'. Specifically, agreements or dominant firms must not 'apply dissimilar conditions to equivalent transactions with other trading parties, thereby placing them at a disadvantage'. The question we consider here is whether e-commerce markets are so distinctive that difficulties are likely to emerge in the application of the standard approach.

separating a definition of the market from the question of dominance may not make sense

Definition of e-commerce markets

The current legal position employs a three-stage process to investigate and prevent companies from abusing a dominant position. First a market is defined, then it is considered whether the company holds a position of dominance on that market and finally, if the firm is found to be dominant, it can be fined if it has abused that position.

Defining the product and market is critical. For example, if consumers buy a seat on a train then there appears to be clear discrimination between second and first class tickets. But if people are buying space on a train then discrimination is less obvious and indeed may be reversed in some instances, given the difference in the number of seats in first and second class carriages.

In e-commerce markets there are particular problems in defining the product and market. In many of these markets there are network externalities - where the benefit I receive from a product depends on how many other people use it. This is a feature that has been critical in software markets where compatibility between users' packages is a central issue. Similar issues will arise with on-line auctions. Markets displaying network externalities can have a tendency to converge to one or two players and for this reason they are sometimes called 'tippy' markets since they tip in favour of particular firms once they get sufficiently large. In a tippy market consumers are at least as interested in buying market share of their supplier, as they are in the core product itself. That is, it is dominance itself that is the product. Separating a definition of the market from the question of dominance may not make sense for many e-commerce markets.

Furthermore, the core approach to defining a market, as used in the EU and the US, is the 'hypothetical monopolist' test. The question is asked - if this product was being sold at a competitive price and suddenly a firm became a complete monopolist of the product, would it be able to raise price by 5% -10% and increase profit? If yes then this product forms a distinct market. If not then the market as postulated must exclude closely related competing products. The postulated market cannot be considered a distinct market and a broader definition is needed.

But if a particular market is tippy then having significantly less than 100% of the market will still allow the company to raise price significantly. That is, the hypothetical monopoly test may be passed at lower market shares creating a false view that the market is smaller than it really is. This may be a particular issue where the market consists of several products with different characteristics. Lines may get drawn too tightly. It could be appropriate that tippyness does indeed require competition authorities to get involved more quickly than in normal markets, but this should not happen through an incorrect notion of the relevant market.

This suggests that some of the standard tools may need adjustment to deal with e-commerce and is particularly a problem once one adds in the fact that these markets are likely to be unusually dynamic with a market structure changing more rapidly than in traditional markets.

Further problems with e-commerce markets arise from the distinctive nature of the interaction between consumer and supplier. To consider companies' strategies and their impact on discrimination it is necessary to expand a little on e-commerce markets.

Search agents

Search agents are software programs that can make decisions on our behalf, significantly increasing our ability to use the internet for business and comparison-shopping. For example, an agent searching for airline tickets from online travel agencies can match preferred dates, price-range, class of travel and other features of the journey, without having to go back to the user on whose authority it is operating. Agents equipped with some negotiating skills can be used to schedule meetings, participate in online auctions and trade in financial markets.

So what effect will these search agents have on prices? Most popular discussion of e-commerce seems to think that the new technology makes markets more competitive, enabling consumers to find bargains more easily and hence enjoy lower prices. But recent research[1] suggests that this is a rather optimistic view. While consumers have lower search costs, which should reduce prices, so too have firms wanting to find out what prices their rivals are charging. This makes it easier for them to operate 'trigger-price strategies', which may enable them to sustain high prices. It also makes it difficult for sellers to undercut each other secretly. In addition, no search agents reviewed in the study charged customers. In fact they charged the *sellers* for being listed. Some even go further and have 'preferred merchandise' agreements with one seller (e.g. Travelocity.co.uk and British Airways). In either case, sellers who *chose* to participate are unlikely to cut prices. Initial results suggest that prices will not fall significantly.

Knowing customers

In recent years an enormous amount of consumer-specific data has been collected by retailers and marketing companies. For example, loyalty cards and air mileage programmes are used to collect data on the shopping patterns of individual consumers. With the growth of consumer e-commerce sellers have tremendous opportunities to use this data. In the UK, companies like British Telecom (BT) and the Post Office have launched campaigns that offer companies the technology to target potential customers and tailor their marketing message to each individual. The same technology can then be used to develop customer profiles and relationships that are appropriate to each individual client. The data agency Experian has just launched a software package that enables websites to recognise customers instantly. It can send their profile to retailers, including details of their wealth and the products they are most likely to buy.

These technologies can in principle be used by sellers to undertake first-degree price discrimination by offering consumers the product they want at a price which they are likely to be willing to pay. However, until recently, such discrimination has been too costly. A physical catalogue that is individually tailored is hardly likely to be cost effective. With the advent of consumer e-commerce this needs no longer be the case. In particular, personalisation technologies significantly increase the ability of firms to undertake first-degree price discrimination. Using agents an on-line catalogue can be individually customised, for the agent can identify the

it is easier to operate trigger-price strategies and harder to undercut other sellers secretly

[1] Ulph D and Vulkan N, 2000, E-Commerce, Mass Customisation and Price Discrimination, University of Bristol, Department of Economics Discussion Paper 00/489

only the most loyal customers will face higher prices

firms will choose not to use the technology because of extra competition

shopper and automatically redesign the company's website to match the user's likely requirements. In particular the technology can be used to offer different prices to different consumers. Since on-line menu costs are practically zero, on-line retailers can easily change their prices to match what they expect the individual to be willing to pay and there is some data to suggest that they do so. In a recent study[2] internet retailers' price adjustments over time were found to be up to 100 times smaller than conventional retailers' price adjustments.

If a technology is available that allows firms to undertake perfect first-degree price discrimination, will firms necessarily choose to use it? At first sight this may seem an odd question, since conventional theory tells us that the ability of a firm to employ first-degree price discrimination always raises its profits, since it can extract greater surplus from consumers. Call this the *enhanced surplus extraction effect*. However, like virtually all the analysis of price discrimination, this conclusion is drawn in the context of price discrimination by a monopolist. A key feature of the e-commerce environment is that it is highly competitive. Intuitively one suspects that this will introduce a second important consequence of the decision by firms to use first-degree price discrimination – namely that it will intensify competition between firms, since they will now be competing consumer-by-consumer. Call this the *intensified competition effect*. This will naturally lower firms' profits.

Thus whether or not firms will choose to use this new technology will depend on whether or not the *enhanced surplus extraction effect* dominates the *intensified competition effect.*

[2] Brynjolfsson E and Smith M, 2000, Frictionless Commerce? A Comparison of Internet and Conventional Retailers, Management Science, Vol. 46, No. 4.

The common view is that e-commerce will encourage firms to use information collected about consumers to offer individually tailored goods and services at individually tailored prices – the twin phenomena of 'mass customisation' and 'price discrimination'. But the results of analysis suggest a less clear-cut outcome.

It turns out that firms will only find it profitable to price discriminate if customer loyalty is very strong and, even in those circumstances, only the most loyal customers will face higher prices. What is more, the greater the degree of customisation, the more likely it is that firms will price discriminate, which without strong loyalty will reduce profits. It is possible that all firms in a market could be driven to mass customise their products even though they would all be worse off as a result.

To summarise, even though electronic commerce may provide firms with the opportunity to engage in first degree price discrimination, in a wide class of cases the firms will choose not to use this technology because of the extra competition that such discrimination will induce. That is, it is the failure to discriminate that restricts competition. This is in marked contrast to the traditional belief that it is the ability to discriminate that chills competitive forces.

Conclusion

This article provides a flavour of the some of the difficulties that are likely to emerge when applying current competition law to e-commerce markets. Conventional legal approaches for defining markets may not be well equipped to deal with e-commerce markets. Furthermore, e-commerce markets feature dominant companies chilling competition by failing to discriminate. Above all, careful analysis of the market in question is likely to be essential when applying competition policy to e-commerce markets.

What Should Government Contract Out?
The Role of the Public Sector Ethos

Recent decades have seen a large-scale shift towards the provision of public services by the private sector. **Patrick François** *asks if there is a limit to the facility of the profit motive to improve efficiency and if, by harnessing the goodwill of public sector employees, some services are not better provided by the state.*

Over the last 20-30 years, most Western countries have moved the provision of a large number of services out of the public sector and into the private. In these cases, government's role has been re-cast from that of service provider to that of service purchaser. Even if we take as given that there are some services that would be under-provided in a free market, and that therefore should be subsidised by the government, it does not follow that these services should be *provided* by a government agency.

The most powerful argument in favour of private, as opposed to public, provision of a service is that of efficiency gains stemming from the private profit motive. The argument is that, simply, someone who owns private firms stands to gain from doing things more efficiently. This may vary from an owner-manager with very direct control over production, to a body of dispersed shareholders with only minimal control. In either case, the argument is that these owners have incentives to do things well (or to hire individuals who will do so for them). They will cut costs, increase quality, improve services, create or implement new technologies, manage more efficiently, etc. in order to gain an advantage over their competitors. In short, it is the spur of profits that motivates owners to do these things, and without that spur, individuals in public organizations have little incentive to search for improvements.

Contracting problems

This argument certainly has huge currency amongst economists, and is the natural 'first brush' an economist would take to the problem. But economists are not too naive to admit the limitations of profit motive. These limits are especially well recognized when contracts over service provision are incomplete. Take the case of care for the aged. It is extremely difficult to write a complete contract describing the type of transaction that is being undertaken. For instance, one could commit on paper to delivering three meals a day, with medical care close at hand. But then, consider the multitude of details that couldn't feasibly be written into a service contract, or equivalently that, even if written in, could never be verified in a court of law. For instance, the helpfulness of the staff or the concern for special needs unknown at the time of the contracting. Consider further the difficulty of writing into the contract dynamic components, a commitment to keeping up with developments in the technology of service provision which, though costly, may raise quality dramatically. There are inherently unimaginable parts of the relationship which cannot be known at the time of the initial agreement. Contractors spurred by profit motive have incentives to write deals promising these things and then skimp on them, since it would be almost impossible to punish them through the courts.

This is the basis of perhaps the most influential argument currently being made by economists in favour of public provision[1]. The argument is that organisations devoid of profit incentives, and run by individuals unable to retain

[1] Hart O, Shleifer A and Vishny R, 1997, The Proper Scope of Government: Theory and an Application to Prisons, Quarterly Journal of Economics, 112(4), 1127-61

governments should provide in sectors where output is non-contractible

operating surpluses for their own use, have little desire to skimp on quality. True, incentives for innovation may be lower, but even this may be a good thing where innovations lower non-observable quality dimensions in order to lower costs. According to this explanation, governments should take on the task of provision in sectors where the output is inherently non-contractible. These authors give as an example the case of prisons, which are services where such non-contractibility problems are severe, and which should therefore remain in the public realm.

This explanation is certainly part of the story as to why governments continue to 'do' rather than just 'buy', but it has its weaknesses. Perhaps the most well known criticism is based on government inefficiency. The argument is simply the flip side of the privatization argument. Sure, the private sector has incentives to lower cost and compromise on quality to make money, but the public sector has a similar incentive to lower quality, though not in pursuit of profit. Public employees will actively pursue effort-reducing strategies that allow them to enjoy more leisure, that is, to have cushy jobs. This too will lead to an erosion of service standards since the same problem of non-contractability of service provision plaguing agreements with private firms will also make it impossible to punish public sector employees. The ultimate importance of this 'government failure' story is an empirical one since it pits two distinct sets of costs against each other. On the one hand the costs of low incentives leading to low effort and low quality of service in the public firm, versus on the other, the costs of high incentives and deliberate quality reduction to make profit in the private firm. Much interesting empirical work is being done on this, and it will surely serve a valuable role in guiding future privatizations.

the private sector is much more able to solve problems of contractual difficulty than usually assumed

The role of reputation

However, if we take a more sophisticated view of markets, the counter-argument based on government inefficiency is not even needed, and actually only serves to make the argument for privatization stronger than it is. The biggest weakness of the non-contractability explanation rehearsed above is that it underestimates the ingenuity of private sector solutions to problems of non-contractabilty. Such problems plague many services that are supplied successfully by the private sector every day. For example consider management consultancy. This is a service that must be at least as difficult to contract as a prison. Management consultants usually enter firms that are performing poorly in order to provide advice on structural and organizational changes that will improve that performance. They are thus selling knowledge that the buyers have no way of assessing, since if the buyer knew what a good solution was they would implement it themselves. It is impossible to write out, beforehand, what the management consultants will deliver, since this will depend on the problems they find when analysing the firm's particulars. Of course, one could contractually commit them to delivering a proposal, or holding a briefing (or perhaps a number of them), but nothing could be written down concerning content, and content is all that matters here. Another solution would be to tie the rewards of the consultants to the future performance of the company. In a sense this is what happens when a firm takes over another. But then this creates the problem of diluting incentives of the company itself for good performance, and also leaves the management consultants exposed to risks stemming from the operation of the company that are beyond their control. This is a solution that is almost never used. Interestingly, these severe contracting problems over service provision never lead to calls for management consultancy to be publicly provided. However, if we take the non-contractability argument seriously, we should see this happening. We should at least observe the emergence of firms that are not concerned with profit (non-profit organizations) or government departments, moving into the field of management consultancy. This also never happens.

The reason is that the private sector is much more able to solve problems of contractual difficulty than the non-contractability argument usually assumes. In the case of management consultancy this problem is solved by reputations. Well known management consultancy firms ask high fees but in return commit to doing a good job, i.e. to providing non-contractible content. They do this because they value their reputations. They value their reputations because these allow them to charge a premium over competitors. The single buyer has no guarantee of receiving good service other than the reputation of the provider, but the provider, spurred on only by profit, has every incentive to leave the customer happy. If they continually fail to do this, they will lose money.

If we take the prime example of needed government provision, according to the non-contractability approach, that of prisons, we see that this too should be able to be solved by reputations. True, the service quality is hard to estimate, but governments are in the business of buying services, and they should buy these on a competitive market. Firms that continually promise to do one thing but don't deliver, because it saves them money, will not be re-contracted in future. In the end, the market will punish them, and such punishment is all that is needed to see that the job gets done. The large trade in managerial consultancy, and other such business services, is testimony to the market's ability to solve these non-contractability problems through reputations.

Public service ethos

But what if people, other than the purchaser of the service, care about the service that is being provided? By 'care' I mean place a value on the quality of service provided even though they directly do not receive a personal benefit. Take again the example of prisons. I, as a private citizen, care that prisoners are not badly treated when incarcerated. I know that it would be cheaper to keep them locked in their cells all day and fed poorly, but I value them having access to recreation facilities and some variety and interest in their food. Even assuming incarceration is a just punishment for their crimes, I do not want to see them subjected to cruelty, or lack of medical care, or unnecessary confinement etc.. Now let's suppose that these sentiments are shared by not only other members of the community but also by the individuals who work in the prisons for a salary. That is, the guards, wardens, counsellors, bureaucrats etc.; let us suppose that all of them care about prisoners more or less as I do. The argument that I have made elsewhere[2] is that such care can be used to motivate workers in public institutions even when it would not be able to do so in traditional private firms.

To most economists, at first sight this argument seems wrong. If individuals are motivated to donate some of their labour effort to achieving ends they care about, then this motivation should be equally present whether they are working for a public firm or a profit maximising private entity. This is because such care is outcome oriented. I am concerned with the welfare of the prisoners, and such concern will exist whether I am working for an individual whose only (or primary) motivation is own wealth, or whether I am subordinate to a state employee who has no claim on operating surpluses and therefore no personal wealth at stake. However, there are subtle differences between the two organisations that make this not true, and they stem precisely from the factors previously postulated to lend advantages to private organisations.

The power of privatization arguments stems from the motivating force of residual claimancy (profit motive) in providing incentives for efficient organisation. However consider my incentive to donate some of my effort to the running of an organisation like a prison. True, I care that the prisoners are well treated, but now suppose I am working for a private firm. Will I contribute extra effort (above that which I am being paid to contribute by my employer) to making the prison a better place for the prisoners? The answer

firms that continually promise but don't deliver will not be re-contracted

[2] Francois P, 2000 Public Service Motivation as an Argument for Government Provision, Journal of Public Economics, 78(3), 275-99
Francois P, 2001 Employee 'Care' and the Role of Nonprofit Organizations, Journal of Institutional and Theoretical Economics, forthcoming

the lack of profit motive provides a credible commitment that workers' actions can matter

profit-motivated firms have an incentive to convert donated labour effort into profit

employees have no incentive to provide labour effort for free

depends on my weighing of the costs and benefits; if the benefit is a substantial improvement in their welfare, and if I care about it enough, and the extra effort is not too arduous, I'll do it. However, a private firm is trying to make money for its shareholders. The managers of the firm should take into account that I am willing to provide some of my tasks for free, just because I care. How should management respond? They should respond by reducing the money they spend on some other element of the service provision, save on costs, and increase profits. Why should they do this? Recall they are being disciplined to provide a good service by the reputation of their firm. Thus, suppose the service they are providing includes an agreement to make the climate for prisoners 'reasonably' satisfying. If I and my co-workers are willing to donate some effort for free, the aim of which is to improve the service beyond the level that the firm has actually contracted to provide, the private prison has the opportunity to reduce some other expenditure (such as, for example, the quality of the ingredients spent on meals) to just meet the overall quality commitment. They certainly have no incentive to provide extra services for free. In short, a private prison with extremely committed staff who are willing to go beyond the call of duty, can afford to cut back expenditures elsewhere and still maintain a reasonable level of service provision and hence their reputation.

In other words the argument made here is that private, profit motivated firms have an incentive to convert donated labour effort into extra profit. In fact, not only do the managers of these firms have an incentive to do so, it is their obligation to their shareholders to do so. The problem is that, knowing this, employees of the private prison, even though they are just as motivated by care for the welfare of prisoners as their public sector counterparts, will have no incentive to provide labour effort for free. They know that if they were to do this, that effort would just end up being converted into extra profit for their employer (something they don't care about), and won't ultimately improve the climate of the prison (the thing they do care about). In a sense, this valuable social resource - the motivation to provide acts for free simply out of one's concern for the outcome - is lost.

Compare this to the same situation in a public organisation. Here the very lack of residual claimancy or profit motive, which is usually argued to be such a problem for government firms, provides a valuable commitment to the worker. It tells him/her that there is no individual or group standing to gain from converting donated effort into extra profit for themselves. The worker then knows that when undertaking an action aimed to improve the quality of some cared for service, it will have that effect. Nobody higher in the organisation has an incentive to cut back on other elements of service provision because nobody in the organisation will gain by doing so. The lack of profit motive actually provides a credible commitment that workers' actions can matter. These actions will affect the final level of service provided, and hence workers' 'care' for the level of service provision is a potentially powerful motivating factor.

Conclusion

Here then is a dimension along which the government as provider can do strictly better than a private, profit motivated firm. The government will be able to hire individuals willing to provide some effort towards the goal of service provision for free. The private firm, in contrast, even though hiring from the same pool of potential employees, with the same amount of care, will only get the effort that they explicitly pay for. In short, governments should provide services where there is a substantial amount of 'care' or 'public service motivation' inherent to the service being provided. By doing so, the government have the potential to obtain motivated employees driven by these concerns to do their job well. A private firm, in contrast, certainly has the undeniable motivating benefits of residual claimancy for its owners. This, however, comes at the cost of diminishing the public service motivation, or care, of its employees.

What Should Auditors Pay?
Changes in Auditor Liability in the UK

Recent large-scale business collapses have led to questions about the extent to which auditors can be held liable for shareholder and creditor losses. **Jen Ireland** *examines alternatives to the current system and argues that introducing proportional liability and holding auditors accountable for a wider class of investor losses would increase the utility and effectiveness of audit reports.*

Introduction

High profile corporate scandals are big news. The losses suffered by investors and creditors can be huge - the auditors concerned paid £75 million to the liquidators of BCCI and nearly £68 million to the receivers of Maxwell Communication Corporation, without admitting liability for professional negligence. It is no surprise that such cases are often associated with alleged auditor negligence - litigation against auditors is significant as it may be the only means by which plaintiffs can seek to recover their losses.

litigation against auditors may be the only means to recover losses

Audits are important monitors of financial information produced by self-interested economic agents - namely the financial statements prepared by company directors for their shareholders. Under British law, statutory auditors share 'joint and several' liability with the directors for the contents of financial statements which they audit. This means they may be sued for the whole of any claim, even if they are not wholly responsible for the losses. At the extreme, the directors themselves may fail to prevent internal frauds, then bring actions against the auditors in the name of the company.

Auditors potentially face 'a liability in an indeterminate amount for an indeterminate time to an indeterminate class', as noted in *Ultramares Corporation v Touche & Co* (1931). Furthermore, most audit firms are partnerships, so auditors' personal assets as well as those of the firm may be at risk from litigation suits. If these risks are too great, audits will be too expensive, or cease to be provided. If the risks are too low, there will be insufficient incentives to provide audit quality. Therefore both the profession, and society at large, has an interest in the level of auditors' liability exposure.

Following an increase in litigation in the 1980s, auditors have seen their exposure limited by legal judgements which place heavy restrictions on the class of potential litigants owed a duty of care. This looks set to change, with proposals set out in the Company Law Review that would impose wider statutory duties of care. This may lead more audit firms to take individual measures to limit their liability which, unless carefully thought out, may not be in the best interests of society.

The current extent of an auditor's duty of care

External financial audits are a statutory requirement for many UK companies[1]. The purpose of a statutory audit, under the current Companies Act, has been interpreted most famously in *Caparo Industries v Dickman and Others* (1990). In this case it was held that statutory audits are performed only for stewardship purposes, to enable shareholders as a class to exercise their rights of stewardship. This confined the class of potential litigants to existing

[1]Audits are mandatory for all public companies in the UK, and for private companies with turnover greater than £1million and total assets greater than £1.4 million. In addition, certain types of company where there is deemed to be a public interest are not eligible for exemption. Even if a company is eligible for exemption, ten percent of shareholders may nevertheless require it to undergo an audit.

shareholders, as a body, suffering loss as a result of stewardship decisions. In particular, it was held that an auditor did not owe a duty of care to investors acting on the annual financial statements for investment purposes, including existing shareholders wishing to purchase more shares.

But if an audit exists only to protect existing shareholders in governance matters a statutory requirement seems unnecessary – shareholders can always choose to have an audit even when it is not required. The statutory requirement makes more sense if it is there to protect third parties, such as creditors or potential investors, who may wish to rely on the financial statements.

Deep pockets

Auditors' liability can be viewed as providing insurance for third parties. This may encourage them to contract with or invest in promising but risky companies they would not otherwise consider, knowing that the liability of the company shareholders is limited to the amount paid or promised for their shares. One reason auditors are sued so often when companies fail is their relative 'deep pockets' – they alone are required to hold professional indemnity insurance, and often have considerable assets independent of any individual client if that client enters bankruptcy. In contrast, a company's, or its directors', assets may be insufficient to meet a plaintiff's claim.

The tripartite test for a duty of care

A finding of negligence relies on the auditors owing a duty of care to the plaintiff. A contract between the auditor and the plaintiff imposes such a duty of care. Hence auditors may be sued for negligence in contract by the other party to the audit contract, namely the company itself (which may be regarded as the body of shareholders, or a separate entity controlled by the directors, depending on your viewpoint). Alternately, they may be sued for negligence by third parties in 'tort'. Third parties have no contract with the auditors, so any finding of duty of care relies on the findings of previous legal cases and the individual circumstances of the case at hand.

The current legal position is that an auditor holds a duty of care to a third party if, and only if, the following three conditions are satisfied: the auditor must be aware of the nature of the transaction that the third party is contemplating, must know that the audit report will be communicated to that party, and finally know that the third party is likely to rely on the report in deciding whether or not to engage in the transaction. These conditions are likely to make it extremely difficult for third parties to sue successfully.

Current methods to limit or reduce auditor liability

Limited liability

auditors are liable for the actions of other parties, reducing incentives for auditor effort

Limited liability reduces both the controllable and uncontrollable liability risk faced by auditors under joint and several liability. To the extent that auditors are liable for the actions of directors and other parties over which they have no influence (uncontrollable liability risk), incentives for auditor effort are reduced. Hence a reduction in uncontrollable liability risk may increase auditor effort. Conversely however, the related reduction in liability for auditors' own actions (controllable liability risk) will act to decrease auditor effort and may lower quality incentives even further.

Auditors may choose to limit the amount of potential liability they face by incorporating their businesses as limited companies or, from 6 April 2001, to take advantage of a new business form by incorporating as a limited liability partnership (LLP).

To date, few audit firms have taken advantage of incorporation as a company in the UK (KPMG is the only notable firm to have done so). There are several possible reasons for this, including the requirement to publish financial statements in Companies Act format and undergo audits (allowing rival firms to scrutinise their business), potential tax disadvantages, and the perceived risk of reputation (and hence business) loss from no longer being seen to 'put themselves on the line'.

The LLP form may prove more popular as the internal structure and taxation of the business will remain similar to that of a partnership and indeed Ernst & Young announced their intention to register as a LLP last December. However many respondents to a Companies House survey felt that adoption of the new LLP form is unlikely to be taken up by most established organisations. LLPs will also have to file annual accounts at Companies House and reputation concerns may still apply.

Client screening and conservative reporting

Other measures auditors may take to limit liability exposure include client screening by refusing to take on risky clients. Many in the accounting profession fear that smaller accounting firms may cease to provide audit services altogether. This would reduce competition, and may deny audit services (and hence access to capital markets) to new or otherwise risky enterprises.

smaller accounting firms may cease to provide audits

Auditors may also become more likely to modify their audit reports (auditors are primarily sued for failing to modify rather than for modifying when a modification is not required). Audit modifications, particularly those relating to going concern, may have unfavourable consequences for companies that do not deserve them. For example, share prices may fall, credit may be restricted, or the business may fail (the so-called 'self-fulfilling prophecy' effect) Increased rates of modification may also reduce the informativeness of individual modifications.

The Company Law Review proposals

In March 1998, the Department of Trade and Industry launched a review of core company law with the aim of developing a simple, modern, efficient and cost-effective framework for carrying out business activity in the UK. The final consultation document was published in November 2000. This document states concern that auditors hold no liability under the Companies Act to existing shareholders who rely on audit reports to buy or sell shares, nor to creditors who may make similar decisions about offering, maintaining or withdrawing credit, nor to potential investors who may rely on the audit report for reaching a view on the financial position of the company. The position is described as 'unduly restricted and inconsistent with commercial expectations' and the Review therefore proposes that auditors' duty of care should be widened to include these groups.

The Review also proposes that auditors should have a right to limit (cap) their liability to the company and others by agreement[2]. This is expected to be welcome to the profession, although it may be difficult to set such limits fairly and effectively; in particular in such a way that the limited fund does not represent a single 'pot' for which all claimants compete - running the risk that the fund is exhausted by early claimants at the expense of later claimants. The economic effects of liability caps are similar to those of limiting liability through incorporation.

Contributory negligence and the duties of directors

The Review also wishes to clarify the right of auditors to claim contributory negligence against client companies where the company's own directors or employees contribute to a plaintiff company's loss, and to extend this to similar cases brought by third party plaintiffs. However, the company may lack sufficient funds to pay contribution, particularly in the case of bankruptcy.

The Review also proposes to widen the duties of care of companies and their directors in line with those proposed of auditors, although this is likely to be unsatisfactory to auditors as individual directors' assets are unlikely to be able to meet litigants' claims unless they are also required to hold indemnity insurance.

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[2]Agreed caps on auditors' liability were first made illegal in the Companies Act 1929.

audits should be for those who are not able to arrange one themselves

under limited liability auditors may adopt riskier strategies towards audit effort

Joint and several or proportional liability?

Limiting liability, either by incorporation or capping, while reducing uncontrollable liability risk, also reduces controllable liability risk.

One solution would be to replace joint and several liability with a system of proportional liability, whereby instead of the auditors being sued for the full amount of any loss suffered by the plaintiff, the auditors may only be sued for that proportion for which they are held responsible. Unlike limiting auditor liability replacing joint and several with proportional liability would not reduce controllable liability risk and is advocated by an International Federation of Accountants (IFAC) report. However, it has been rejected by the Company Law Review as being 'hard to defend in principle'.

The IFAC report provides three economic arguments in favour of proportional liability. Firstly, that incentives to provide high quality audits may be stronger under proportional liability, as concerns over the liquidity of co-defendants are removed and uncontrollable liability risk is reduced, so that auditors' own actions become relatively more important influences on their expected liabilities. Secondly, in reducing the burden of uncontrollable liability risk, proportional liability would reduce incentives for auditors to undertake client screening by rejecting high-risk companies. Finally, proportional liability would increase shareholders' own incentives to exercise corporate control over management.

The view that proportional liability is preferred to joint and several liability is supported by theoretical studies comparing audit effort and audit failure rates (both measures of audit quality) under the alternative regimes. A system of proportional liability was introduced to the US in 1995 and other systems operate in Canada, Bermuda and the Netherlands. If proportional liability systems are deemed workable in other countries it is questionable whether the Review has adequately defended its stance.

Conclusion

If audits are mandatory, then they should be performed for the benefit of those users who are not in a position to arrange an audit themselves. These will be third parties such as actual and potential creditors, and potential investors, precisely those not presently accorded a duty of care. Any move to widen auditors' duties of care to include these users must therefore be welcomed. However, it must also be recognised that auditors will seek to limit their subsequent exposure and that current and proposed methods of limiting auditor liability are unsatisfactory.

Limiting liability through capping or incorporation reduces the uncontrollable liability risks faced by auditors, thus reducing client screening incentives and improving shareholder governance incentives. These benefits must however be weighed against possible reputation losses for the auditors, and reduced incentives for audit quality arising from reductions in controllable liability risk. Limited liability reduces downside risk (that of paying very high litigation damages after failing to modify) while retaining upside risk (that of escaping litigation when no modification is required). Thus auditors may adopt more risky strategies towards audit effort and reporting under limited liability.

Audits must be of sufficient quality, reporting reliable opinions on the financial statements, otherwise they have no value. To this end, auditor liability regimes should not penalise auditors for the actions of others over which they have no control, but equally they should not fail to sufficiently penalise auditors for their own shortcomings. Limited liability schemes will involve trade-offs between achieving these two aims. Replacing limited liability with a system of proportional liability such as in place in the US and elsewhere is economically preferable.

The Company Law Review is a missed opportunity for the UK to introduce a system of proportional liability for auditors with its associated benefits.

Incentives in Public Sector and Other Complex Organisations

Instituting financial and other incentives in public sector employment is the focus of much current government policy. This is based on the assumption that, as in the private sector, incentives will drive up efficiency and productivity. But what is the economic evidence that this is the case and how should these schemes be designed? The CMPO recently hosted the first annual PIPPS conference (Pay, Incentives and Performance in the Public Sector) to address this question. Here **Ian Jewitt** *reports on work presented at the conference.*

'Incentives in Public Sector and other Complex Organisations' was the first of a series of PIPPS meetings, which are organised by CMPO in collaboration with researchers at Essex, Nottingham and the London Business School and funded by the ESRC through their research seminar program.

Details of future PIPPS meetings will be announced on CMPO's website where the papers from the first conference can also be downloaded. If you would like to be added to the mailing list for this series, or for further information about future PIPPS conferences please email the CMPO administrator at cmpo-office@bris.ac.uk.

The academic program was organised around keynote lectures by Avinash Dixit (Princeton) and Canice Prendergast (Chicago) together with nine contributed papers. Over 50 delegates attended the conference on 22nd and 23rd March from the UK, Europe and the US. The worldwide interest in the topic augurs well for future meetings in the PIPPS series.

The conference

Avinash Dixit of Princeton University presented 'Incentives and Organisations in the Public Sector: An Interpretive Review.' This paper provided an overview of many of the issues that were explored in more detail by other papers in the conference. There is already a vast academic literature on incentives but it is not usually specifically aimed at the public sector. Avinash began by reviewing the implications of classical models (including moral hazard, adverse selection and costly verification) for the nature of incentive schemes. Extensions to the theory were then discussed including: inter-temporal aspects, career concerns, multiple tasks, teams, multiple tiers and multiple principals. In each case Avinash showed how the implications for the classical models were affected for optimal incentives. Having drawn together and structured the existing literature Avinash turned to discussing case studies and empirical evidence including: education, JTPA (see below), Clinton's 1993 National Performance Review, and competition and privatisation. He devoted special attention to issues that are important in the public sector and examined how they relate to the theory, in particular for the approach to reform and design of organisations. He stressed the importance of the complex interactions between multiple tasks and multiple principals. Although it will often be optimal to expose employees or organisations to competition when they have clear tasks and easily measurable outputs, doing so in the absence of these conditions may degrade unmeasured quality. Reforms must take account of the organisation as a whole to avoid piecemeal changes that may have counterproductive

in the absence of clear tasks and measurable outputs competition may degrade quality effects caused by manipulation of the system.

Canice Prendergast (Chicago) discussed 'The Limits of Bureaucratic Efficiency.' He persuasively argued that many public sector products and services are characterised by a particular type of asymmetry in 'customer' responses. Contrast the services supplied by, for instance, the Los Angeles Police Department with, say, a high street optician. Whereas short-sighted and long-sighted customers for spectacles can both be relied on to complain if given the wrong prescription, this is not true for the customers of the LAPD. The innocent can be relied upon to complain if wrongfully arrested, but the guilty are hardly likely to complain if they are allowed to go about their illicit business unchallenged. Canice developed a model to capture this distinction, which lead to a number of interesting predictions which certainly fit some standard preconceptions of bureaucratic behaviour. Bureaucrats ignore legitimate consumer complaints - especially those aimed at incompetent bureaucrats; they monitor more than appears necessary in situations where it is not needed; they correct fewer errors than in non-bureaucratic situations; and they delay decision-making for too long. All of these responses are however optimal given the contracting environment. Canice provided recent evidence from the LAPD that is consistent with the predictions of the model. Increased scrutiny of complaints against the police had lead to an increase in 'drive and wave' policing. Canice also considers why bureaucrats are needed to allocate resources. He describes how the need for bureaucrats depends on the pricing of assets to consumers, and argues that bureaucrats should only be expected to be found in situations where they appear to behave inefficiently.

bureaucrats should only be expected in situations where they appear to behave inefficiently

James Fairburn (Sussex) presented a paper written with *Roberto Burguet* (Institut d'Anàlisi Econòmica CSIC) 'Market Incentives and Mobility'. He took up one of the themes covered in Dixit's overview to explore the effect of mobility when concern for career development provides the primary incentive for current performance. His paper examined the quality of the match between the worker and sector of employment rather than traditional studies on worker talent per se. This allowed attention to be focussed on the effects of mobility on incentives. He argued that inter-industry sector mobility can reduce initial incentives because workers have a positive probability (if they discover they are currently in a bad match) of moving to a sector where their current experience will have little impact on their pay. On the other hand, workers who move to new jobs have increased incentives because they have to prove themselves anew in their new career. Since workers will face higher incentives in their new jobs and since the demand for workers is competitive, workers will benefit through higher wages. Workers therefore sometimes give up their old jobs because they benefit from the challenge provided to establish themselves in their new ones.

Simon Burgess (Bristol) presented joint work with *Paul Metcalfe* (York) 'The Use of Incentive Schemes in the Public and Private Sectors: Evidence from British Establishments.' This paper investigates the pattern of use of incentive schemes in the public and private sectors in Britain. The data is drawn from a large representative cross-sectional survey: the 1990 Workplace Industrial Relations Survey. The data confirms the common preconception that incentive schemes are significantly less widespread in the public than the private sector. Looking across sector, occupation and type of scheme the authors cast light on which is the most likely explanation for this difference. The findings are consistent with the importance of measurability and issues of multi-task jobs as important determinants of the lack of incentives in the public sector. The authors suggest, however, that it is difficult to argue on the basis of this data that the low incentivisation of the public sector is optimal.

Juan D Carillo (Brussels) presented 'On Job Assignments as a Screening Device'. He discussed the assignment of tasks to workers when the outcome of the tasks is used in a promotion decision. In particular, he considered how an organisation should optimally assign such tasks between senior and junior employees and also how these tasks would be assigned if that decision were delegated. First, it is shown that delegating assignment decisions to senior workers is inefficient since they have an incentive to suppress information if they are already in a strong position within the organisation. Second, he argues that when workers have career concerns, firms should favour junior employees over senior ones in order to harness the greater career concern incentives of the former.

Pascal Courty (LBS) presented 'Performance Incentives with Award Constraints' written with *Gerald Marschke* (SUNY, Albany). This paper studies the provision of incentives in the US JTPA (Job Training Partnership Act) training agencies. Each pool of agencies distributes performance incentive awards to the training agencies it supervises, subject to the constraint that the awards cannot exceed a fixed award budget. This is a novel feature of incentive schemes, which, although natural in this context, has received little theoretical investigation to date. The paper discusses and models the JTPA award system and derives testable predictions. For instance, it is shown that a small agency should receive disproportionately large awards and perform better on average than larger ones. The empirical results bear out the predictions and also indicate that the constraints on the award distribution strictly bind and therefore reduce the overall efficiency of the incentive system. The authors discuss policy proposals such as the benefit of allowing agencies to transfer some of the award pot from one year to another.

Guido Friebel (IDEI and SITE) presented 'Should I Stay or Can I Go? Worker Attachment in Russia' written with Sergei *Guriev* (Moscow). Reallocation of workers from obsolete sectors to more profitable ones is a very important challenge, especially for former centrally planned economies but for other organisations also. The authors construct a model in which firms have an incentive to 'attach' their workers, i.e. to restrict their ability to migrate thereby increasing returns. The main conclusion of the model is that attachment only operates effectively when there are relatively few firms in the local labour market. Data of the Russian Longitudinal Monitoring Survey (RLMS) are used to test the theory and show that workers' propensity to leave a region does indeed decrease with the degree of concentration of the local labour market.

Marco Ottaviani (UCL) gave a talk based on two papers written with *Peter Sørensen* (Copenhagen) 'Professional Advice' and 'The Strategy of Professional Forecasting.' Professional experts are motivated by career concerns to appear well informed. They offer advice, in Ottaviani's model, with this sole objective. Future employers assess their ability on the basis of the advice given and the eventual outcome, which is observed after the event. One might expect that the best way to convince employers of decision making quality is to give the best advice i.e. transmit all relevant information. However, it is shown that this is not the equilibrium of the model. The only equilibrium has 'imperfect information transmission', in which the expert at most transmits only the direction but not the intensity of the information possessed.

in equilibrium the expert transmits only the direction but not the intensity of information

Margaret Meyer (Oxford) presented joint work with *Alessandro Lizzeri* (New York), and *Nicola Persico* (Pennsylvania) entitled 'The Incentive and Sorting Effects of Interim Performance Evaluations.' Should workers be given feedback on how well they are doing? Telling a worker they are doing badly may de-motivate them, telling them they are doing well may make them complacent, but telling them they are 'getting close' may provide strong incentives. The paper models dynamic settings where individuals are rewarded according to a non-linear function of their cumulative performance such as up-or-out promotion schemes, rank-order promotion contests, and bonuses for exceeding targets. Interim Performance Evaluations (IPE's) inform individuals how their *workers respond to larger variations in pay but will not work so hard if the promotion system is unpredictable*

performance to date is perceived by the organisation before the final outcomes on which rewards are based are determined. IPEs affect subsequent effort choices whenever rewards vary non-linearly with cumulative performance. Also, the anticipation of an IPE affects effort choices prior to the interim evaluation. Because IPEs alter individual effort profiles, they affect the likelihood that the intrinsically more able workers will end up being promoted. The analysis thus sheds light on the costs and benefits of providing individuals with early feedback about how their performance is perceived by the organisation.

Peter Dolton in joint work with Ada Ma (Newcastle) presented 'CEO Pay in UK Universities'. Peter referred to the vast amount of work on CEO pay in the private sector and contrasted it to the relative paucity of work on public sector CEO pay. Executive pay in the public sector is potentially different from the private sector. Typically, measures of performance are harder to observe. The paper investigates public sector CEO pay by considering the remuneration of university CEOs. The data consists of a panel dataset of the pay of university vice-chancellors and principals in the UK from 1993-1999. The data contain measures of academic performance, financial performance, hierarchical effects, and VC personal characteristics as determinants of the pay of university vice-chancellors. In particular it allows a distinction to be drawn between internal promotions, and hires from outside academia. The distinction between the effect of institution and individual are identified since for most universities we observe at least one change of VC.

This panel dataset is unique in terms of scope and the length of time the characteristics of UK universities are observed. In particular it includes: the results of the Research Assessment Exercise in 1992 and 1996 as measures of academic performance of the university, and the financial position of the university as a measure of its sound executive management.

Tim Barmby (Newcastle) presented 'Luck Effort and Reward in a Organisational Hierarchy' written with *Rick Audas* (New Brunswick), and *John Treble* (Bangor). The paper uses the administrative personnel records of a large British financial sector employer in order to investigate how workers' behaviour responds to both remuneration differences and chance events. The authors use the early part of a panel dataset to construct an individual specific measure of 'luck' in the promotion process, which is used to analyse workers' behaviour in the later part of the panel. Workers are found to respond to larger variations in pay by working harder but are not prepared to work so hard if the promotion system works in an unpredictable fashion. The evidence also bears on behavioural differences between men and women. The authors were unable to detect any difference between men and women's reactions to the incentives provided by pay and promotion. The large and robust gender differences displayed in the raw data are therefore not due to incentives but must be found elsewhere. Similarly, large and robust differences in absenteeism between different levels of the hierarchy are actually reversed when the effect of incentives is factored out.

The Leverhulme Centre for Market and Public Organisation was founded in 1998 with the objective of furthering our understanding of an appropriate design for the reform of a wide range of activities on the 'boundaries of the state'. The Centre aims to develop research, further debate and inform policy relating to the public sector and the recently privatised entities. Further information can be obtained from:

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