



NEW ZEALAND INSTITUTE FOR THE STUDY  
OF COMPETITION AND REGULATION INC.

## Politics and the Pursuit of Efficiency in New Zealand's Telecommunications Sector 1987-2008

June 2009

Bronwyn Howell

This paper has been accepted for publication in the *Journal of Competition Law and Economics*. <http://jcle.oxfordjournals.org/>

New Zealand Institute for the Study of Competition and Regulation Inc. and  
Victoria Management School, Victoria University of Wellington, PO Box 600,  
Wellington, New Zealand. Email [bronwyn.howell@vuw.ac.nz](mailto:bronwyn.howell@vuw.ac.nz)

**Acknowledgement:** *The author acknowledges the helpful comments of Glenn Boyle and Lewis Evans in the preparation of this paper. The views expressed are solely those of the authors, and do not necessarily represent those of any ISCR member institutions. Any errors or omissions remain the responsibility of the author.*

## **Abstract**

Economic analysis takes as its defining performance benchmark the pursuit of increases in efficiency. Competition law and industry-specific regulation provide two competing means of intervention whereby the pursuit of efficiency can be enhanced. Ultimately, legislators decide how governance of industry interaction will be allocated between these two institutional forms. Whilst competition law can govern interaction in most industries, where the underlying economic conditions are sufficiently different, industry-specific regulation offers advantages. However, its weakness is the risk of capture, leading to the subjugation of the efficiency end to the pursuit of other objectives. But if the regulatory institution could be bound in some way to pursue an efficiency objective, could the risk of capture be averted? New Zealand's 'light-handed' regulation, instituted in 1987, attempted to enshrine the pursuit of efficiency into statute, firstly by relying solely upon competition law and contractual undertakings, and subsequently creating a regulatory body with an explicit legislated efficiency directive. In practice, however, the inability of a government prioritising efficiency to bind its successors to pursue the same objective renders sector strategy, and hence the efficiency objective, subject to political capture. Consequently, inherent systemic instability attends the pursuit of the efficiency objective and the institutions overseeing its enforcement.

## **1. Competition or Regulation?**

Economic analysis takes, as its defining performance benchmark, the pursuit of increases in efficiency (welfare), measured as the sum of consumer and producer (i.e. total) surplus. In this paradigm, an increase in total surplus is strictly preferable to the status quo or a decrease in total surplus. An action that brings about a greater efficiency increase is therefore strictly preferable to one leading to a lesser increase, maintains the status quo, or leads to a decrease. In this context, the primary normative objective of law- and policy-making is the promotion of economic efficiency via the elimination of market inefficiencies (Schmalansee, 1979; Kahn, 1970; 1975).

Whilst a minority of economists, and many consumer advocates, propose the use of law- and policy-making powers principally as a means of achieving distributional objectives independent of their effects upon total efficiency (e.g. Feldstein, 1972a; 1972b), their use for this purpose is extremely difficult to achieve in practice (Schmalansee, 1979), and possibly counter-productive (Kahn, 1975; Peltzman, 1976). Furthermore, as distributional objectives are highly subjective, it is very difficult to adjudge the ‘success’ of any distribution-motivated intervention. By contrast, efficiency is an objective measure that provides a useful benchmark for the economic assessment of law- and policy-making performance, even if redistribution is a primary consideration. The Kaldor-Hicks criterion holds that if total welfare (efficiency) is greater as a consequence of a law or policy change, then the gains to the winners will be greater than the losses incurred by the losers, and the change economically justified, irrespective of whether the gains are actually shared (i.e. redistribution occurs) (Connolly & Munro, 1999).

Consequently, the pursuit of increased efficiency is broadly accepted as the principal economic justification for the enactment of both competition (antitrust) law overseen by courts and judges and industry-specific regulation, overseen by regulators and regulatory agencies (Carlton & Perloff, 2005). In the United States context, since the passing of the Interstate Commerce Act (1897) and the Sherman Act (1890), “regulation and antitrust have operated as competing mechanisms to control competition” (Carlton & Picker, 2007:1). The challenge for law- and policy-makers is in determining a balance in the allocation of responsibilities between the courts enforcing the generic antitrust obligations of firms and regulatory authorities overseeing efficient operation within specific industries where underlying economic characteristics predispose them to efficiency limitations, in a manner that best promotes the pursuit of increased efficiency.

## **1.1 Courts or Regulators?**

It is far from clear that either the courts or industry-specific regulatory bodies have embedded in their legislative underpinnings or operational capacities the ability to take full account of all relevant issues of economic efficiency.

Carlton & Picker (2007) suggest that the development of an independent United States jurisprudence has enabled economic principles to be increasingly included in judicial decision-making, in a manner that is not possible in less-independent industry-specific regulation. However, whilst court-governed processes can give weight to promoting increases in economic efficiency, they are constrained in their ability to promote its maximisation under the prevailing constraints. Courts are reactive, responding only to those cases and those points of law brought before them. Judges have no mandate to address potentially efficiency-raising issues that industry participants choose not to pursue in litigation. Their decisions thus lead to incremental changes over a small range of issues, which are not necessarily the most important from a broader total welfare perspective.

Moreover, even when cases are brought, they are adjudicated by generalist antitrust judges who in many cases lack the industry-specific economic knowledge upon which efficiency decisions may turn. Judgement quality is conditional upon the quality of advice available (e.g. access of the panel to expert lay members) and the range of issues and accompanying analysis presented by the litigants. The precedents set in jurisprudence also hinge upon the economics underpinning the test cases. Precedents formed upon the basis of underlying economic characteristics in one industry may not transfer neatly into industries where different underlying economic characteristics prevail. For example, high fixed and sunk costs induce a different form of competitive interaction between industry participants, and different efficiency outcomes, than where these costs are low or non-existent. Whereas competitive behaviour favouring a large number of market participants driving price towards marginal cost raises efficiency in most industries, where sunk costs are large, injudicious entry and pursuit of marginal cost pricing creates, rather than ameliorates, market failure leading to associated loss of efficiency (Carlton and Perloff, 2005).

The risks of judicial economic error associated with economically ‘different’ industries – predominantly the network industries such as telecommunications, electricity, railways, airlines and other transport – suggest that the creation of industry-specific regulators to govern industry interaction has the potential to improve decision-making and is indeed a rational, efficiency-raising institutional response to the limitations of jurisprudence.

Industry-specific regulators in most cases have the requisite economic knowledge to give due weight to efficiency considerations. They can also be given a much broader mandate to investigate issues which in their judgement warrant attention. Rather than being reactive, they can be proactive – a power that when applied appropriately can lead to increases in efficiency. Proactive power thus tends towards more radical industry change in regulator-governed regimes than is observed in antitrust-governed ones, theoretically enabling the capture of efficiency gains in a more timely manner than is possible under court-governed processes.

However, unlike judges who in most jurisdictions are independent of political processes, regulators' comparative lack of independence exposes them to greater risk of capture, either by either the politicians who grant them authority in the first place, or industry participants, with whom they are most closely associated in their daily activities, and whose livelihoods depend upon the regulator's decisions (Stigler, 1971; Posner, 1974; Peltzman, 1976; Becker, 1983). This predisposes regulatory decisions towards a greater emphasis upon redistributive rather than economic efficiency issues. The measure of a regulatory regime's effectiveness and ability to deliver upon the efficiency objective therefore turns upon firstly the extent to which it is charged with the pursuit of economic efficiency, and secondly the regulator's ability to adhere to the efficiency objective in the face of pressures which will inevitably come to bear upon it to deviate towards favouring specific redistributive desires.

## **1.2 Regulation to Increase Competition or Welfare?**

In deciding the optimal allocation of industry governance responsibilities between competition law and industry-specific regulation in industries where the underlying economic circumstances are sufficiently different, the pertinent question facing policy-makers is whether the pursuit of competition is a sufficiently good proxy for the pursuit of increased efficiency in those industries for competition law to be sufficient. If it is not, then industry-specific regulation charged with the pursuit of increased efficiency would appear to be the appropriate institutional form of governance.

Yet in practice, it is common to see regulatory institutions charged principally with increasing competition (rather than efficiency) in their relevant industries. For example, the Telecommunications sector of the European Commission Directorate General for Competition is charged with ensuring that “national regulators correctly apply the regulatory framework so as to promote effective competition” and applying “the general competition

rules of the EU Treaty”<sup>1</sup>. That is, pursuit of the “means” (competition) of increasing the desired “end” (efficiency) has itself become the “end” objective of the regulatory institution established to address the inability of competition law to increase efficiency.

If competition law is so inherently ill-suited to adjudicating issues in industries with sufficiently different underlying economic circumstances that pursuit of increased efficiency can only reasonably be expected to occur under the aegis of an industry-specific regulatory body with the freedom to deviate from competition law methods and benchmarks to pursue that objective, then why would that regulatory body itself be charged with encouraging and enforcing competitive behaviour – the (apparently) identical mandate with which the courts are charged? The seemingly tautological contradiction is resolvable only if it can be presumed that the form of competitive interaction in the regulated industry differs so substantially from the form of competitive interaction occurring in other industries that generic competition law is unable to deliver the desired outcomes.

Specifically, the form of competition pursued in regulated industries cannot be static ‘perfect competition’ where it is presumed that the number of participants producing an homogenous good is infinite and price is driven down to marginal cost. Yet few real-world markets, even those apparently quite satisfactorily governed by competition law, satisfy the requirements for a textbook-style perfectly competitive market. The general antitrust view is that all markets are special, and therefore competition law principles governing industry interaction should take these distinctive characteristics into account (Gaynor & Vogt, 2000). Separate governance will be more efficient, however, if the pattern of competition is sufficiently different, consistent and frequently occurring to justify a net economic benefit of specialisation over generalisation (Williamson, 1986). This is likely to occur in industries where specific characteristics (e.g. high fixed and sunk costs) result in the emergence of distinctively different patterns of competitive interaction (e.g. oligopoly, monopolistic competition, dominant firm-competitive fringe) where participants face quite different incentives from those associated with perfectly competitive markets (e.g. the dynamic incentives associated with a small number of large firms investing very large sums in differentiated technologies across time) (Alleman & Rappoport, 2005).

In the longer-run, regardless of the form of the governing institution, the effects upon dynamic efficiency from prioritising the ‘wrong’ form of competition may be profoundly detrimental. Short-run entry pursued for or static efficiency purposes without due

---

<sup>1</sup> [http://ec.europa.eu/competition/sectors/telecommunications/overview\\_en.html](http://ec.europa.eu/competition/sectors/telecommunications/overview_en.html) site accessed 9 June 2009.

consideration of long-run dynamic investment and efficiency incentives is counter-productive (Hausman, 1999; Crandall, Ingraham & Singer, 2004; Pindyck, 2004; 2005; Guthrie, 2007). Greater dynamic efficiency gains may be achieved by preventing, rather than encouraging, competitive entry (e.g. regulatory holidays – Gans & King, 2004). Likewise, entry induced by the imposition of asymmetric obligations upon the incumbent (e.g. universal service obligations distorting price signals and inducing entry by participants with higher costs than the incumbent; service-level entry on the basis of arbitrage on regulated access tariffs) is unlikely to be either efficiency-raising (Quigley, 2004) or sustainable long-term (e.g. as evidenced by the ‘price squeeze literature – Sidak, 2008).

However, introducing industry-specific regulatory bodies to oversee pursuit of competition in ‘economically different’ industries presupposes that the competitive differences are sufficiently well-understood to be translated accurately into the regulatory institution’s objectives, its performance is measured against them, and that the ensuing regulatory institution will achieve those objectives more efficiently in total than under competition law institutions. Any competition-based regulatory objective therefore must at the very least be constrained by an explicit efficiency-based criterion – i.e. at worst, total welfare is at least as large as under the counterfactual. If not, there is little economic justification for having a separate governance body in the first place – from first principles, competition law governance would suffice.

Furthermore, any regulatory obligations imposed on firms, (whether imposed by an industry-specific regulator or via legislated obligations or even contractual deeds with government agents) necessarily alter the patterns of competitive interaction observed such that standard textbook models of interaction likely provide poor guidance in respect of expectations and likely outcomes. Regulatory-induced competitive interaction will most likely differ quite substantially from competitive interaction arising in non-regulated industries. Likewise, the form of regulated competition induced following privatisation of a formerly government-owned monopoly and concomitant industry deregulation will likely differ substantially from that induced when an industry formerly governed under competition law becomes subject to industry-specific regulation. Institutional history will inevitably lead to a path-dependent and likely unique pattern of competitive interaction (Howell & Sangekar, 2009).

Moreover, it cannot be simply assumed that it is sufficient to stipulate a regulatory agenda pursuing any one nominated form of competition. Competitive interactions are dynamic processes that will necessarily alter over time, as a consequence of both changing strategies amongst industry participants as they respond to each others’ actions, and changes in the

underlying economic circumstances that give rise to different forms of interaction in the first place (e.g. technological innovation altering cost structures).

The efficacy of competition law as a means of governing ‘economically different’ industries must therefore be tested against its ability to adjudicate in favour of increased efficiency given the distinctions in competitive interaction occurring over time. The record suggests that courts as a generic institution may be ill-equipped overall to take account of such distinctions. Sidak (2008) illustrates conflicting decisions arising in different jurisdictions regarding the legality of ‘price squeezes’ induced by regulatory duties to deal that would not occur normally in an unregulated market. Economic analysis incorporating the upstream origin of the ‘squeeze’ arrives at a different efficiency finding than analysis taking as its starting point only the action in the downstream retail product market. Whilst a sufficiently well-informed court may be able to make an efficiency-raising decision, Sidak’s comparison of the range of different judgements arrived at by courts in different circuits in the United States and in the European Union on essentially the same facts suggests that it is not at all clear that courts in all jurisdictions are capable at the current point in time of acting consistently in a manner that promotes efficiency given the economic complexities attendant to the different forms of competition induced by regulatory intervention.

### **1.3 An Institutional Solution?**

Whilst court-based governance is problematic, can governance undertaken by a separate regulatory institution in practice achieve a more efficient outcome? Clearly, it is inconsistent to establish such an agency and charge it with promoting and/or enforcing the identical forms of competitive interaction that competition law has already been charged with, and shown to be inadequate in, addressing. One of the principal benefits of industry-specific regulation is that the regulatory body can be granted discretionary powers not available to the courts (for example, to alter the performance benchmarks as the form of competition in the industry evolves over time). Yet it is this very discretion that makes regulation vulnerable to capture by vested interests seeking to ensure unduly favourable treatment. This begs the question of whether the risk of capture can be meaningfully reduced by specifying ex ante an explicit regulatory objective to take account of efficiency consequences in regulatory actions.

From an economic perspective, if a regulatory agency was charged with an efficiency-based objective, and required to report transparently against it, then it might be assumed that the risk of regulatory capture by vested interests within the industry would be substantially reduced. However, without some further clarification as to the relative weights to be given to the



pursuit of dynamic as opposed to static efficiency gains, a risk remains that regulatory capture efforts may be exerted towards capturing any regulatory discretion in this regard. The most marked risk in industries with high fixed and sunk costs would be capture resulting in a higher weight than optimal being given to static efficiency gains (e.g. arising from price regulation or entry occurring in a market being inappropriately encouraged to replicate perfect competition when such an objective is unattainable) over dynamic efficiency gains (e.g. failing to prevent entry, thereby precluding sufficient incentives being provided to encourage investment in additional capacity or new technologies). Such an outcome would seem most likely to occur when a regulator charged with ‘increasing competition’ is insufficiently constrained by a concomitant objective to take account of the dynamic efficiency consequences of increased competition – for example when priorities for regulatory ‘success’ give greater weight to either the number of competitive entrants or their (individual or combined) market share (static considerations) than investment-related metrics (dynamic considerations).

If, however, it was feasible to construct an efficiency-based regulatory objective that was sufficiently clearly articulated and measurable so as to eliminate these sources of capture, could industry-specific regulation offer a stable institutional solution to the dilemma of governance allocation? Such a concept has immediate appeal. In practice, however, unlike competition law where the judiciary retains constitutional independence from political direction, a regulatory agency is usually a direct agent of political principals, and is subject to carrying out its duties only as prescribed in the politically-enacted legislation that gives it force. Whilst politicians can once set the regulator’s objective to pursue increased total efficiency with a given set of weights favouring dynamic over static gains, as the economic literature suggests should result in greatest long-term total efficiency, they also hold the power to subsequently alter the objective. The risk of capture is simply shifted up the institutional hierarchy from the regulator to politicians (Williamson, 1996).

Whereas judges and regulators can be held to account by well-informed individuals (who are presumably experts in the issues under consideration) on a tightly-defined and transparent set of criteria for each and every decision made, generalist politicians are held to account infrequently on a plethora of decisions over a vast array of policy areas by the individuals least-well informed on the efficiency-based issues on which the industry-specific decisions turn – the voting public. Not only is the focus of capture altered, but the likelihood of it occurring and going unchecked is greater. The greater risk of political capture by vested interest groups is precisely why policy agencies such as the OECD advocate strongly for the removal of industry-specific regulatory decisions from the ambit of day-to-day generalist

political activity. Yet so long as politicians hold the power to alter the legislated terms under which an industry-specific regulatory agency is established, the objective it will pursue and the terms under which its performance is monitored and assessed, the agency's activities are subject to deviation from any previously-articulated objectives by its present political principals.

By way of illustration, suppose a well-intentioned government did resist the risks of political capture sufficiently to use its legislative powers to establish a regulatory agency charged with the pursuit of clearly-articulated, weighted and transparent increases in total welfare. In principle, such a regulatory agency should deliver the desired outcome uninhibited. However, as such a government is unable to bind its' successors, it is quite feasible that its opposition may be captured by vested interests opposed to the efficiency-raising objective. Upon obtaining an electoral majority, the new government (former opposition) can simply pass into law an alternative regulatory objective. Even without the need to change the law, the weights applied to any discretion given to the regulator (e.g. the balance between static and dynamic efficiency) may become subject to political actions (for example, via the appointment of a regulator sympathetic to the capturing interests, or the provision of funding becoming contingent upon the delivery of alternative (non efficiency-based) outcomes).

Moreover, capture of the regulatory process (such that it deviates from the pursuit of increased efficiency to the exclusion of other ends) can occur even without an explicit intention being present, simply because multiple objectives become conflated in the regulator's assigned duties. For example, in the telecommunications industry, regulators have frequently been charged with overseeing simultaneous processes of privatisation of former government-owned firms and regulating competition amongst the private owner and new market participants. In order to secure an electoral mandate for privatisation, politicians typically undertake to require regulators to bind the privatised incumbent with social obligations underpinned by redistributive imperatives (e.g. universal service). The incumbent may also be subject to price restraints (e.g. mandatory below-cost prices) designed to transfer surpluses presumed to be accumulated by the producer to consumers. Different treatment of the incumbent and its competitors via other instruments (e.g. caps, cost-based pricing) that constrain profits and alter incentives unequally is also strictly a redistributive imperative as it prioritises gains to competitors over gains to the incumbent even when there is no change in total welfare (Howell, 2008). Such imperatives effectively relegate pursuit of efficiency to a secondary role in the regulatory agenda, at least in the short-term.

Pursuit of redistribution is further elevated in importance if competitive entry arises as a consequence of arbitrage based upon politically-mandated regulatory restrictions on the incumbent rather than as a consequence of more efficient production processes or welfare-enhancing product differentiation. Inappropriate measures of regulatory performance conflating pursuit of competition measured solely as competitive entry with pursuit of efficiency are therefore more likely to be prioritised by ill-informed politicians who, as agents of voters favour the pursuit of competition as an objective simply because ‘evidence’ in the form of decreased incumbent market share is very visible in the short-run political (voting) horizon, whereas efficiency improvements are less tangible, broadly spread and take time to accrue.

#### **1.4 Courts as a Second-Best?**

A feasible institutional solution to the political capture problem might be to place the regulatory agency outside the realms of political control – that is, in effect to create a body that replicates the constitutional independence of the courts. However, it is difficult to conceive that such a body could be either politically or socially acceptable if it retained the same degree of discretion required by, and granted to, regulators without first having established a sufficient body of precedents to guide decision-making. The circularity of the argument would appear to suggest that in practice, the new body would simply be a special court adjudicating industry-specific matters (for example, the akin to the labour court).

But whilst addressing the limitations inherent in non-specialist judges, specialist courts by their very institutional imperatives invoke the same efficiency-limiting criticisms levelled at competition law courts – namely the reactive nature of decision-making and judicial inability to address potential welfare-enhancing issues unless specifically called upon to do so via a case. If the only substantive difference between the two types of court is specialist judicial knowledge and a body of jurisprudence, it begs the question of why such distinctions could not in principle be equally well catered for under an expanded competition law mandate overseen by the general courts.

In sum, therefore, it would appear that it may be impossible to create a regulatory institution where the pursuit of efficiency can be retained as a stable, long-term objective. Whilst court-based competition law may have shortcomings, unless there is some alternative means of restraining politicians from deviating regulatory objectives from the pursuit of increased efficiency, it would appear that it offers the best chance of stable, long-term economically consistent industry governance.

## **2. Case Study: The New Zealand Telecommunications Sector**

The lack of stability and robustness of an industry-specific regulatory body charged with pursuing increased efficiency in the face of risk of political capture is illustrated by the case study of New Zealand's telecommunications industry governance arrangements from 1984 to the present.

### **2.1 'Light-Handed' Regulation and Efficiency**

New Zealand led the world in 'light-handed' regulation when from 1984, the government embarked upon a comprehensive restructuring of the country's economy under the aegis of a clearly articulated objective of increasing economic efficiency and creating "wherever possible, a competitive environment in which markets can operate relatively free from subsequent intervention by government" (Evans, Grimes, Wilkinson & Teece, 1996:1863). As part of this process, the Commerce Act 1986 was enacted with the objective of promoting competition for the long-term benefit of consumers and the Telecommunications Act 1987 eschewed industry-specific regulation in favour of generic competition law under the provisions of the Commerce Act.

Efficiency considerations were paramount in the choice of institutional mechanisms for industry governance. As a small economy with only a little over 4 million people, New Zealand could access economies of scale in the regulatory process itself if a single institution governed all commercial activity. The costs, inflexibility and bureaucratic capture weaknesses were explicitly identified as avoidable under a competition law-governed regime (MoC/Treasury, 1995; Blanchard, 1995). Whilst the limitations attendant with non-specialist judges existed, it was also clear that New Zealand's specific economic circumstances – small population, low population density, geographical isolation, challenging terrain, thin capital markets and historically highly-concentrated industries – posed challenges to the enactment of competition law not faced in other jurisdictions (Arnold, Boles de Boer & Evans, 2003). On balance, the establishment of a single institution to capture scale economies as well as ensure consistency in application was favoured. However, Part IV of the Commerce Act explicitly provided for the government to impose price controls in industries where market power existed, should this be deemed necessary.

Although 'lightly-regulated, the telecommunications sector was far from unregulated. When the state-owned monopoly incumbent was privatised in 1990, contractual obligations known as the 'Kiwi Share' (subsequently the 'Telecommunications Service Obligation' or 'TSO')

imposed rural-urban and free local calling universal service obligations and a price cap on residential line rentals that could be broken only with the express permission of the Minister, and even then only where it could be demonstrated that the incumbent was under financial duress. The paramount principle was that contractual agreement, rather than overt regulation, offered the most cost-effective means of advancing the pursuit of increased efficiency.

The New Zealand arrangements thus constituted an action of a government endeavouring to create a set of principally competition law- and contractually-based governance arrangements that to some extent insulated the sector from the risks of diluting the pursuit of efficiency inherent in industry specific regulatory bodies and the risk of their political capture (albeit recognising that some redistributive imperatives remained in the universal service obligations). It is far from clear that the 'light-handed' New Zealand regime performed any worse over the 1990s than industry-specific regimes using efficiency gains as a benchmark. The New Zealand residential telephony price index fell by more than the OECD average over this period, and free residential dial-up internet telephony access led to the country becoming a world leader in internet connection and use (Howell, 2007). Dynamic efficiency did not appear to be impaired, as the incumbent was one of the OECD's earliest DSL adopters (January, 1999), using a high-speed (2Mbps) service widely available (85% of the population had access by 2003) priced very low taking speed into account (Howell, 2003).

During the period of light-handed regulation, only two Commerce Act actions alleging exertion of a dominant position were brought against the incumbent – one by new entrant Clear Communications in 1991 (Clear case), and one by the Commerce Commission in 1999 (0867 case). In neither case was the incumbent found under competition law to be acting anti-competitively. After hearings in the High Court<sup>2</sup>, Court of Appeal<sup>3</sup> and Privy Council<sup>4</sup>, it was ultimately found in the Clear case that the incumbent's adoption of the Baumol-Willig Efficient Component Pricing Rule (ECPR) was legitimate as it enabled recovery of universal service costs. In the 0867 case, the incumbent's action in charging for internet traffic previously provided free of charge under the 'Kiwi Share' free residential local calling obligation when the receiving party was an ISP connected to a rival telephone network (previously approved by the Minister under the terms of the 'Kiwi Share') was a legitimate competitive action (Howell, 2007).

---

<sup>2</sup> Clear Communications v Telecom Corporation (1993) 5 TCLR 166 (HC)

<sup>3</sup> Clear Communications v Telecom Corporation (1993) 5 TCLR413 (CA)

<sup>4</sup> Telecom Corporation v Clear Communications [1994] 5 NZBLC 103, 552 (PC); [1995] 1 NZLR 385 (PC) passim

## **2.2 ‘Light-Handed’, Politically-Mandated Industry-Specific Regulation**

The ‘light-handed’ competition law-governed regime prevailed until 2001, when following a change in government and a further Ministerial inquiry, it was replaced under the Telecommunications Act 2001 by an industry-specific regulatory body – the Office of the Telecommunications Commissioner.

Concerns had been raised following the Clear case (1994) that, although competition law had favoured the pursuit of increased efficiency in enabling recovery of universal service costs, the enshrining of ECPR pricing as a precedent risked, under certain circumstances, less than efficient entry and hence lower product variety in downstream markets (Economides & White, 1995; Blanchard, 1994a; 1994b, 1995). That is, pursuing competition (the means) under competition law compromised efficiency (the end). A proposed solution that avoided adoption of full industry-specific regulation was to introduce a ‘light-handed’ process that sat under the Commerce Act and the courts (e.g. an arbitration process) enabling swifter resolution of disputes and with a wider mandate to consider efficiency issues not directly part of court pleadings (Blanchard, 1995). The proposal was rejected in favour of the status quo by a 1995 inquiry led by the New Zealand Treasury and the Ministry of Commerce (MoC/Treasury, 1995).

However, ongoing discontent with ‘light-handed’ regulation provided a galvanising point for the political opposition of the time. In part as an electoral response to entrants’ dissatisfaction with the outcomes of the 1991-4 court decisions and popular politicized perceptions of the ‘failure’ of the ‘light-handed’ regime to result in reductions in the (predominantly foreign-owned) incumbent’s market share (and hence its degree of dominance), and in part to differentiate its approach from both the previous Labour government that had introduced ‘light-handed’ regulation from 1984, and the subsequent National Party and National-led coalition governments that had endorsed it, the Labour Party manifesto for the 1999 election promised reforms to the Commerce Act to tighten controls on firms with a dominant position, and an inquiry into the conduct of both the telecommunications and electricity industries.

Following the election of a Labour-led coalition government in November 1999, the telecommunications inquiry was duly established in February 2000. The articulated government policy objective was “to ensure that the regulatory environment delivers cost efficient, timely, and innovative telecommunications services on an ongoing, fair and

equitable basis to all existing and potential users”<sup>5</sup>, which appeared to be interpreted by the Inquiry panel in efficiency-related terms. ‘Cost-efficient’ was presumed to mean that services are produced “at the lowest cost and delivered to consumers at the lowest sustainable price” (p 11) (i.e. perfect productive and allocative efficiency), ‘timely’ to mean “the absence of barriers that would impede the implementation and uptake of innovative services” (dynamic efficiency) and ‘ongoing’ to mean “that regulation should be forward-looking, robust, durable and consistent over time, and not sacrifice long term gains for short-term considerations” (the trade-off between dynamic and static efficiency).

However, the policy imposed multiple and conflicting objectives. Both static and dynamic efficiency objectives were to be addressed simultaneously, with no guidance given to which should take priority. Moreover, the policy required both efficiency and distributional objectives to also be simultaneously satisfied. ‘Fair and equitable’ was taken to mean “the way in which services are provided, the conduct of the industry players and their interactions”, suggesting weight would be given to competitor equity as well as consumer welfare. The policy was clearly unable to be delivered fully, and without clear prioritisation criteria, left open considerable scope for the Inquiry itself to be captured by vested interests.

Not surprisingly, therefore, the recommendations emerging reflected only partial satisfaction of multiple conflicting agendas. The new industry-specific regulator would be charged with overseeing implementation of cost-based (TSLRIC) pricing of a variety of fixed line voice telephony services, but stopped short of providing regulated open access to nascent broadband services. Full local loop unbundling was also rejected, but a further inquiry into its feasibility was required to be undertaken by the end of 2003. Whilst the inquiry recommended that the incumbent should bear all of the costs of universal service uncompensated, the legislation finally enacted facilitated the recovery of universal service costs from all industry participants, via a new ‘Telecommunications Service Order’ (‘TSO’) which replaced the ‘Kiwi Share’.

Importantly, however, in respect of the discretion afforded the regulator in undertaking inquiries into industry activity, the Act included a section 18(2) specifically mandating that efficiency be taken into account when making decisions and recommendations: “in determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of

---

<sup>5</sup> [http://www.med.govt.nz/templates/Page\\_16432.aspx#tor](http://www.med.govt.nz/templates/Page_16432.aspx#tor)

end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered”.

Despite the other provisions of the Act, it would appear from Section 18(2) that in the view of parliament, the efficiency objective remained important. As the Commission was constituted within the Commerce Commission, an Independent Crown Entity required to take account of political directives only when specifically required to do so as part of its legislated duties, it might be considered that it satisfied the requirements for the hypothetical regulatory body identified in Section One above, charged with pursuing efficiency independent from risk of capture by vested (and especially political) interests. Indeed, at the time it was seen as encompassing an ‘enlightened’ form of industry-specific regulation that “would still see New Zealand at very much the light-handed end of the regulatory spectrum, arguably the lightest within the OECD” (p 30). However, the weakness of the arrangements lay in the fact that as an agent of political principals, the Commissioner could only recommend efficiency-based resolutions to matters investigated. The power to accept or reject ultimately lay with the Minister, and hence the Commission’s activities were ultimately subject to political capture.

### **2.3 The Efficiency Objective in Practice**

The enforceability and political acceptability of decisions made using the legislated efficiency mandate were explicitly tested when the Commission undertook its statutory (Section 64) review into local loop unbundling in 2003.

#### **2.3.1 LLU: Total Welfare Prevails**

The investigation was noteworthy internationally for the fact that it employed a cost-benefit analysis based upon a total welfare decision criterion (the sum of consumer and producer surplus as opposed to consumer welfare alone (Hausman & Sidak, 2005) – albeit subject to criticisms regarding the exclusion of investment in the model). Dynamic efficiency principles were explicitly prioritised in making the recommendation ultimately not to proceed with unbundling. The inquiry found that “the overall benefits from unbundling are not sufficiently persuasive to satisfy the Commission that a regulated solution is warranted”<sup>6</sup>. Platform competition (e.g. from wireless networks) was considered likely to evolve and reduce the extent of the incumbent’s control of the bottleneck to access (para 788). The experience of LLU internationally had been mixed in respect of increasing broadband penetration (para

---

<sup>6</sup> Executive Summary, (v).

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/LocalLoopUnbundling/ContentFiles/Documents/Finalreportexecutivesummary.PDF>



792). The high costs of mandatory unbundling were also cited, including the critical point that the incentives for the incumbent to invest would be substantially reduced under LLU, and that this would have very significant effects upon the potential welfare gains for consumers (para 794).

Instead, the Commission recommended accepting the incumbent's offer of open access to a limited bitstream service. Given the incumbent's imminent investment in a Next Generation Network (NGN), a lesser form of unbundled access would enable a limited amount of service-differentiated entry, whilst preserving the incumbent's investment incentives and limiting entrants' exposure to stranded assets in the event of the NGN resulting in the bypass of exchanges containing entrants' equipment (Gans & King, 2004; Covec, 2004; Howell, 2007).

The Minister accepted the Commission's recommendations, apparently endorsing both the methodology used and the conclusions reached. For this decision, at least, industry-specific regulation constrained by an explicit efficiency obligation had resulted in an economically rational regulatory recommendation, and there appeared to be insufficient political will to override it. The decision was, however, received with considerable dismay by the incumbent's competitors and other interested parties, who would undoubtedly have preferred a different outcome<sup>7</sup>. The recommendation confirmed the apparent ability of vested interests to deviate the regulator from efficiency-based decision-making. The nature of submissions to the Minister on the subject by disaffected industry participants signalled an intention that in future lobbying would be concentrated in the political arena, thereby increasing the pressure on a less well-informed decision-maker substantially more susceptible to acting opportunistically to resile from the efficiency criterion in future decisions.

### **2.2.2 Mobile Termination #1: Consumer Welfare Trumps Total Welfare**

The second test came with the Commission's inquiry into mobile termination between 2004 and 2006. In the initial inquiry, dynamic efficiency considerations underpinned the cost-benefit analysis which led to a recommendation in June 2005 that mobile termination charges for voice calls on 2G networks, but not 3G networks, be regulated. The recommendation stated: "the Act does not direct the Commission as to the weight that it should give to efficiencies, as opposed to other considerations. This is a matter for the Commission to consider. Where there are tensions between short-term allocative efficiency and long-term dynamic efficiency, the Commission takes the view that giving greater weight to the latter will generally better promote competition for the long-term benefit of end-users" (para 28).

---

<sup>7</sup> See, for example, TelstraClear's submission to the Minister on the matter <http://www.med.govt.nz/upload/5898/tcl-rsp-to-comcom-llu-rpt-submission040209.pdf>

Nonetheless, greater weight was given to distributional considerations in this recommendation than in the LLU case, with consumer welfare, rather than total welfare, providing the decisive criterion.

In August 2005, the Minister rejected Commission's recommendation and ordered a second review reconsidering "definitional and implementation issues concerning 2G and 3G" and take into consideration "commercial offers made by Telecom and Vodafone following the Commission's final report"<sup>8</sup>. The Ministerial redirection appears to confirm that lobbying of politicians (rather than the regulator) by vested interests was now the preferred method of influencing sector outcomes.

### **2.2.3 Mobile Termination #2: Competition Trumps Efficiency**

The second report in April 2006 this time recommended that all fixed-to-mobile voice calls on all technology types be subject to regulation<sup>9</sup> as "substantial net benefits to end users were likely to arise from making mobile termination a designated access service" (para 32)<sup>10</sup>. The redistributive consumer welfare decision criterion was defended: "where wealth transfers which are sustainable and not themselves conducive to inefficiency are likely to result from a measure promoting competition, the Commission ought to give weight to such transfers in the cost-benefit analysis" (para 34). The inclusion of 3G technologies was justified as deployment had advanced between the first and second decisions to the extent that the Commission considered existing 3G investments to be irreversible.

More surprising, though, was the explicit rejection of the supremacy of efficiency in the Commission's primary decision-making criterion in favour of competition considerations – a substantial change from the dynamic efficiency criterion prioritised in the first report. The Commission argued that its statutory authority actually prioritised the pursuit of competition as the prevailing sector objective over all other considerations.

Specifically, the Commission claimed that the Telecommunications Act created a distinction between the Commerce Act seeking to promote competition by restricting the aggregation of market power and controlling its use (sections 36 and 47), and the regulation of existing market power, as provided for in Part IV. Part IV was deemed to focus upon the net benefit to acquirers – that is, it must take into account "the wealth transfer that occurs in reducing the

---

<sup>8</sup><http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/ContentFiles/Documents/Ministers%20letter%20to%20commission.pdf>

<sup>9</sup><http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/reportsandsubmissions.aspx>

<sup>10</sup>Paragraph references relate to the final, revised report, which summarises the material in all of the preceding draft and final reports.

excessive profits of the regulated party” (para 46) – an apparent acknowledgement of redistribution as the primary purpose of this specific regulatory intervention, as opposed to the pursuit of increased efficiency. As the Telecommunications Act was deemed to derive as a consequence of Part IV-type dominance, the Commission was in no doubt that in addressing the tension between the promotion of competition (the means) and the pursuit of efficiency (the end), the Telecommunications Act gave primacy to competition: “where there is a tension between the net public benefits and promotion of competition, the statutory context indicates that the primary consideration is the promotion of competition” (para 47). A paragraph later: “the Telecommunications Act is focused on regulating access to promote competition. It does not provide a mechanism that specifically allows for efficiency considerations to take precedence over the promotion of competition. Nor is there anything in the statutory scheme to suggest that this should be the case”.

The implication of this decision is the surprising conclusion that in New Zealand, telecommunications regulation is not an alternative to competition law as presumed by the theory of section one above, but is in fact and in practice subservient to it. If this was truly the intention when the Telecommunications Act was passed in 2001, it begs the question of why the efficiency mandate in section 18(2) was included at all. Indeed, it would have been more consistent to instead have a clause prioritising the pursuit of competition alone. Moreover, the further implication is that all of the previous Commission decisions prioritising efficiency were based upon an erroneous interpretation of the government’s intentions when passing the Act, and that Ministerial acceptance of the 2003 unbundling decision made on this basis was therefore an error of process. In the historical context, this view is perplexing given that the Act derived so directly from an Inquiry which gave explicit voice to (if not fully implementing) efficiency considerations in making its recommendations. Moreover, the interpretation is also highly questionable in historical fact – if the legal position was so clear, why at the time of the 2003 unbundling decision was judicial review of the minister’s (apparently legally erroneous) decision to accept the Commissioner’s recommendation not sought by any of the dissatisfied industry parties?

#### **2.2.4 Politicians Trump Regulators**

The most plausible alternative explanation for the radical departure from previous decision-making precedents is that the prevailing political objectives changed between the passing of the Act in 2001 and the 2006 mobile termination decision. As an agent of the political principals, the Commission appears to have become subject to pressures to resile from its previous prioritisation of efficiency in favour of a set of more politically acceptable competition-based criteria. An acknowledgement of subservience to the Minister is contained

in the second report: “the role of the Commission is to recommend and it is for the Minister to determine” (para 53). Ultimately, even the second recommendation was rejected in 2007<sup>11</sup>, in favour of a set of undertakings by the potentially-regulated firms brokered by the Minister of Economic Development<sup>12</sup> (the Minister of Communications having declared a conflict of interest as a consequence of a legal dispute with one of the companies facing regulation).

## **2.4 Completion of the Transfer to Political Control**

The prioritisation of competition over efficiency as it has occurred in New Zealand is consistent with the hypothesis that indiscriminate prioritisation of competition (and especially its short-term static elements) over efficiency is likely when poorly-informed politician principals ‘captured’ by vested interests themselves capture and override the efficiency-charged regulatory process for electoral purposes. Competition metrics offer more tangible evidence to electoral stakeholders that actions have been undertaken than the less-tangible efficiency metrics. Such reasoning leads to the hypothesis that lobbying by vested interests (either industry-based or electoral) has succeeded in reducing both the exercise of informed regulatory discretion and the power of the efficiency directive in New Zealand telecommunications markets..

The available New Zealand evidence supports the contention that political overriding of the efficiency objectives for electoral ends has occurred. The Labour Party manifesto for the September 2005 general election proclaimed “this Labour-led government has ended the destructive period of ultra-light handed regulation that stifled competition, growth and consumer choice in ICT markets” and promised to “closely monitor and enforce commitments made by Telecom New Zealand<sup>13</sup> under the local loop unbundling decisions and ensure targets for broadband uptake for the next three years as outlined in the Digital Strategy are met”<sup>14</sup>. The election resulted in a minority Labour-led government with a one-member majority. The primacy of competition as the prevailing political objective for the sector was reinforced by the November speech from the throne outlining the new government’s agenda: “with respect to ICT, my government will be advancing policies to ensure that the telecommunications sector becomes more competitive and that we achieve faster broadband uptake in line with our competitors”<sup>15</sup>. ‘Efficiency’ appears to have

---

<sup>11</sup> <http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=29126>

<sup>12</sup> <http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=28525>

<sup>13</sup> The incumbent

<sup>14</sup> [http://www.labour.org.nz/policy/jobs\\_and\\_economy/2005policy/Pol05-Comms/index.html](http://www.labour.org.nz/policy/jobs_and_economy/2005policy/Pol05-Comms/index.html)

<sup>15</sup> <http://www.scoop.co.nz/stories/PA0511/S00104.htm> (Despite successive attempts in June 2007 to retrieve the official version from [http://www.dia.govt.nz/Pubforms.nsf/NZGZT/Speech187Nov05.pdf/\\$file/Speech187Nov05.pdf](http://www.dia.govt.nz/Pubforms.nsf/NZGZT/Speech187Nov05.pdf/$file/Speech187Nov05.pdf), it could not be retrieved.). This source appears to have reproduced the text complete, but this fact cannot be verified.

disappeared entirely from both the government's telecommunications policy lexicon and the implementation of the policy itself.

In December 2005, the Ministry of Economic Development began a 'Stocktake' of the telecommunications industry, with its primary focus "the broadband market and our broadband performance as a factor in economic performance" (MED, 2006). Given that the expertise to undertake the investigation lay principally in the Telecommunications Commission, the use of policy ministry to undertake an assessment of industry performance implies a lack of political confidence in the Commission and its processes. It also suggests a lack of confidence in the ability of a Commission-led analysis "taking account of" efficiency to deliver a set of recommendations consistent with the government's explicit competition agenda to which it was already committed. It also cannot be discounted that the Ministry was preferred for conducting the review specifically because, unlike the Commission, it is not explicitly bound by a requirement even to take account of efficiency in its analyses. Moreover, the Ministry, as distinct from an Independent Crown Entity, is directly accountable to the Minister for implementing government policy.

In sharp contrast to the Commission reports, the Stocktake report (MED, 2006), released in May 2006, is notable for its lack of principled economic analysis (Howell, 2006). Full local loop unbundling and functional separation of the incumbent were justified primarily on the basis of the broadband market failing to meet an arbitrary level of competitiveness defined by the share of connections sold by competitors to the incumbent<sup>16</sup> and investment by the incumbent being deemed insufficient on the basis of slippage from an investment schedule proposed in 2003. Submissions on the proposals were heard by a Select Committee comprised of generalist politicians rather than a panel of expert Commerce Commissioners, and were not subject to the three-stage Telecommunications Commission processes of a draft report, a quasi-court conference where the recommendations and written submissions on the draft report by all interested parties can be tested in a contestable manner, and a final report. The process was not subject to appeal or review on either process or substance.

The recommendations were enacted in December 2006. Along with the provisions for full LLU and separation, a new section (19A) was added requiring the Commission to take account of any economic policies of the government that are communicated by the Minister in

---

<sup>16</sup> On February 2 2006, the Commissioner notified the Minister of Communications that at the end of 2005, whilst the number of ADSL broadband connections sold exceeded the target set in the 2005 agreement with Telecom by 11.6%, only 24.5%, rather than 33.3% had been sold by competitors to Telecom.  
<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/MonitoringandReporting/ContentFiles/Documents/Telco%20Key%20Stats%20-%20Quarterly%20Monitoring%20Report%20-%2031%20March%202007.pdf>

writing. Any veneer of independence of the New Zealand telecommunications regulatory function from political direction has thus been explicitly removed. There is now considerable role confusion between the Ministry and the Commission as to where the responsibility for each of regulatory decision-making and policy delivery actually lies. As the efficiency mandate was not removed, the new policy delivery obligation compounds the problem of the Commission's multiple, conflicting priorities rather than clarifying its objectives. Moreover, the policy directive creates a further tension if, in the future, government economic policies change again in a manner that brings them into conflict even with the competition imperative (e.g. nationalization of assets). Indeed, it begs the question of what purpose now exists for a regulatory body separate from the Ministry, if the very motivations for separation – independence and the ability of the Commissioner to exercise discretion – can be so explicitly suborned to political direction.

Political capture of the regulatory function was reinforced in 2007. In April, the Minister of Communications released proposals for the functional separation of the incumbent. In May, at the same time as he announced the appointment of a new Commissioner, he revealed that he, and not the Commissioner, would lead the separation process. This was deemed by the Cabinet to “the urgency attached by the government to the need to secure a clear outcome on this matter in the shortest possible timeframe. Because this is a major structural issue and not a matter of micro regulation, this was felt and is still felt to be the appropriate way forward”<sup>17</sup>.

### **3. Conclusion**

The New Zealand case supports the hypothesis that, although it is theoretically possible to construct a regulatory body charged with pursuing an efficiency-based agenda, in practice the such a regulatory body will prevail only so long as the pursuit of efficiency is aligned with the interests of the prevailing political principals.

The unique New Zealand institutional structure appears to have evolved because the explicit attempts by governments in the past to create arrangements that prioritised the pursuit of efficiency above other considerations, first by the reliance upon competition law alone, and subsequently by explicitly including efficiency objectives in the mandate given to the industry-specific regulator, have ultimately failed to withstand the test of subsequent governments to firstly dilute the force of the efficiency mandate, and ultimately to capture the

---

<sup>17</sup> <http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=29595>

regulatory process as a means of furthering their own agendas. The erosion of the efficiency mandate began gradually, but has accelerated since 2005. Nonetheless, a complete transformation has been achieved within a comparatively short (in institutional terms – Williamson, 1996) twenty year time frame.

The chronology of the erosion illustrates the thesis that, despite the best of intentions, ultimately the governance arrangements are determined by those with the political power to make the laws allocating responsibility for various tasks. Whilst pursuit of efficiency is rationally justifiable from an economic perspective, and it has been demonstrated to be the objective of, if not perfectly achievable via, competition law, explicit inclusion of efficiency in a regulatory objective is not sustainable on the long-run, as the inability of an objective regulator to satisfy the petitions of those seeking to capture the process for their own purposes creates pressure for the law-maker politicians. The supremacy of the efficiency criterion will persist only as long as it is congruent with the political objectives of the government of the day. Governments change, and their objectives change with them. Inevitably and eventually, in the absence of the ability to exercise control informally to capture the process, a successor government which cannot be bound by its predecessors will reverse earlier decisions, using its powers to either change the rules or to take over the regulatory task itself. The only reason that the courts administering competition law can avoid such capture is because their constitutional origins afford them a degree of independence not available to agencies that derive their mandate from political processes.

Given the lack of ability to enforce an efficiency objective in the long-run via industry-specific regulation, the only sustainable means of doing so would appear to be via competition law. Imperfect though its process may be, the New Zealand experiment suggests that, in the absence of constitutional protections for a regulatory agency also charged with the pursuit of efficiency, it may be the only sustainable institutional compromise.

## References

- Alleman, J. & Rappoport, P. (2005). Regulatory failure: time for a new paradigm. *Communications and Strategies* 60 pp105-121.
- Arnold, T., Boles de Boer, D., & Evans, L. (2003). The structure of industry in New Zealand: its implications for competition law. In Berry, M. & Evans, L. (Eds) *Competition law at the turn of the century*. Wellington, New Zealand: Victoria University Press.
- Becker, G. (1983). A Theory of Competition Among Pressure Groups for Political Influence. *Quarterly Journal of Economics* 98, 371-400.
- Blanchard, C. (1995). Telecommunications regulation in New Zealand: light-handed regulation and the Privy Council's judgement. *Telecommunications Policy* 19(6), 456-75.
- Blanchard, C. (1994a). Telecommunications regulation in New Zealand: the Court of Appeal's decision in *Clear Communications v Telecom Corporation*. *Telecommunications Policy* 18(9), 725-33.
- Blanchard, C. (1994b). Telecommunications regulation in New Zealand: how effective is 'light-handed' regulation? *Telecommunications Policy* 18(2), 154-64.
- Boles de Boer, D., & Evans, L. (1996). The Economic Efficiency of Telecommunications in a Deregulated Market: the Case of New Zealand. *Economic Record*, 72(216), 24-39.
- Carlton, D., & Perloff, J. (2005). *Modern industrial organization* (4<sup>th</sup> ed.). Boston: Pearson/Addison Wesley.
- Carlton, D., & Picker, R. (2007). Antitrust and Regulation. National Bureau of Economic Research Working Paper 12902. Available on <http://www.nber.org/papers/w12902>.
- Commerce Commission. (2003). Telecommunications Act 2001 Section 64 review and schedule 3 investigation into unbundling the local loop network and the fixed public data network Final Report. Wellington, New Zealand. Available on <http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/LocalLoopUnbundling/ContentFiles/Documents/finalreport.PDF>.
- Connolly, S., & Munro, A. (1999). *Economics of the public sector*. Harlow, Essex: Pearson Education.
- Covec (2004). Benchmarking Telecom's UPC service. Available on [http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/Unbundling-PartialCircuits/ContentFiles/Documents/Final%20Draft%20Report%20\(August%204%202004\)%20-%20UPC%20Benchmarking.pdf](http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/Unbundling-PartialCircuits/ContentFiles/Documents/Final%20Draft%20Report%20(August%204%202004)%20-%20UPC%20Benchmarking.pdf).
- Crandall, R., Ingraham, A., & Singer, H. (2004). Do unbundling policies discourage facilities-based investment? *The B.E. Journal in Economic Analysis and Policy*.
- Crandall, R., & Sidak, G. (2007). Is mandatory unbundling the key to increasing broadband penetration in Mexico? A survey of the international evidence. *Criterion Economics*. Available on <http://ssrn.com/abstract=996065>.
- Economides, N., & White, L. (1995). Access and interconnection pricing? How efficient is the "efficient component pricing rule"? *Antitrust Bulletin* 40(3), 557-79.
- Evans, L., Grimes, A., Wilkinson, B., & Teece, D. (1996). Economic reforms in New Zealand 1984-1995: the pursuit of efficiency. *Journal of Economic Literature* 34 (December 1996), 1856-1902.
- Feldstein, M. (1972a). Distributional equity and the optimal structure of public pricing. *American Economic Review* 62: 32-36.
- Feldstein, M. (1972b). Equity and efficiency in public pricing. *Quarterly Journal of Economics* 86: 175-87.
- Gans, J., & King, S. (2004). Access holidays and the timing of infrastructure investment. *Economic Record* 80(248), 89-100.
- Gaynor, M. & Vogt, W. (2000). Antitrust and competition in health care markets. Chapter 27 in Culyer, A. & Newhouse, J. (eds). *Handbook of Health Economics*. Amsterdam: Elsevier.



- Guthrie, G. (2006). Regulating infrastructure: the impact on risk and investment. *Journal of Economic Literature* 44(4), 925-972.
- Hausman, J., & Sidak, G. (2005). Did mandatory unbundling achieve its purpose? Empirical evidence from five countries. *Journal of Competition Law and Economics* 1(1), 173-245.
- Howell, B. (2007). A Pendulous Progression: New Zealand's Telecommunications Regulation 1987-2007. Available from <http://www.iscr.org.nz>.
- Howell, B. (2006). Submission: Telecommunications Amendment Bill. Available from <http://www.iscr.org.nz>.
- Kahn, A. (1975). *The Economics of Regulation Vol II*. New York: Wiley and Sons Inc.
- Kahn, A. (1970). *The Economics of Regulation Vol I*. New York: Wiley and Sons Inc.
- Ministry of Commerce & The Treasury. (1995). Regulation of access to vertically-integrated natural monopolies. Wellington, New Zealand: Ministry of Commerce; The Treasury. [http://www.med.govt.nz/templates/MultipageDocumentPage\\_4560.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_4560.aspx)
- Ministry of Economic Development. (2006). Promoting competition in the market for broadband services. Wellington, New Zealand: Ministry of Economic Development. Available on <http://www.med.govt.nz/upload/36537/promoting-competition.pdf>.
- Ministry of Commerce & The Treasury. (1995). Regulation of access to vertically-integrated natural monopolies. Wellington, New Zealand: Ministry of Commerce; The Treasury. [http://www.med.govt.nz/templates/MultipageDocumentPage\\_4560.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_4560.aspx)
- Ministry of Economic Development. (2006). Promoting competition in the market for broadband services. Wellington, New Zealand: Ministry of Economic Development. Available on <http://www.med.govt.nz/upload/36537/promoting-competition.pdf>.
- Peltzman, S. (1976). Toward a more general theory of regulation. *Journal of Law and Economics* 19. 211-40.
- Pindyck, R. (2004). Mandatory Unbundling and Irreversible Investment in Telecom Networks. National Bureau of Economic Research Working Paper 10287. Available on <http://www.nber.org/papers/w10287>.
- Pindyck, R. (2005). Pricing Capital Under Mandatory Unbundling and Facilities Sharing National Bureau of Economic Research Working Paper 11225. Available on <http://www.nber.org/papers/w11225>.
- Posner, R. (1974). Theories of Economic Regulation. *Bell Journal of Economics* 5, 335-58.
- Quigley, N. (2004). Dynamic Competition in Telecommunication: Implications for Regulatory Policy. Toronto: C.D. Howe Institute Commentary, February.
- Schmalansee, R. (1981). *The Control of Natural Monopolies*. Lexington, MA: Lexington Books.
- Sidak, G. (2008). Abolishing the Price Squeeze as a Theory of Antitrust Liability. *Criterion Economics*.
- Stigler, G. (1971). The Theory of Economic Regulation. *Bell Journal of Economics* 2, 3-21.