Submission to the Productivity Commission Inquiry into the National Access Regime

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Executive summary

The National Access Regime (regime) has been an enduring part of Australia's microeconomic reform agenda since the mid-1990s, drawing heavily on the recommendations of the Hilmer Committee inquiry into competition policy (Independent Committee of Inquiry into Competition Policy in Australia, 'Hilmer Report' 1993). Its economy-wide application is intended to encourage a consistent approach to access regulation across industries and, ultimately, to facilitate greater economic efficiency through competition.

The regime entails a significant encroachment on property rights, substantial regulatory judgements in its application and potentially large economic impacts. Indeed, these factors are reflected in the considerable public debate concerning the regime, the level of administrative and judicial review when it has been formally applied, and the number of policy inquiries into its ongoing existence and operation (including this one).

Context to the review: shifting emphasis and interpretation

A major aspect of the National Access Regime is that it has evolved over time from that originally envisaged by the Hilmer Report. The regime has been subject to reforms over the past decade designed to improve its operation, principally as part of the Australian Government's response to the 2001 review by the Productivity Commission. Courts have also been required to interpret aspects of the legislation, including most recently in the High Court's Pilbara railways decision. In this context, and as recognised in the Productivity Commission issues paper, a core focus of the review is to examine whether the National Access Regime is meeting its policy objectives and remains appropriate in current and future circumstances.

Given that the regime has now been operating for close to two decades, the Productivity Commission is well-placed to assess its efficacy and appropriateness (especially compared to the 2001 review when the regime had only been in operation for half a decade).

The efficient provision and use of essential infrastructure contributes to economic growth and rising living standards. The regulation of Australia's infrastructure has a major effect on the efficiency and performance of the Australian economy. Certainly, the outcomes of the review, and any attendant legislative reform, could have very significant implications for future infrastructure investment, as well as for facility owners and access seekers.

Balancing the costs and benefits of access regulation

Access regulation has the potential to radically alter market structures, constrain monopolistic market behaviour and in many cases establish (or, where it operates as a threat, influence) the terms and conditions on which business is done in regulated and potentially regulated markets. Regulation can alter the ability of firms to invest in an industry and the returns they can expect from doing so. Regulations determining the price at which services must be traded are particularly relevant to the

investment decisions of both access providers and access seekers, and can have a potentially significant impact on the level and mix of investment in affected industries.

Access regulation involves complex, industry-specific technical issues in a dispute-prone context where the parties have misaligned incentives. The limited information available to regulators raises the risk of costly regulatory error. In addition to compliance and administration costs, regulation can encourage wasteful strategic behaviour as parties attempt to manipulate the processes and rules to their advantage.

Even the risk of having an asset declared can discourage investment by potential access providers, while the option of securing declaration may induce potential access seekers not to invest when they otherwise might. Mandatory access can impose extensive costs, such as disruption of vertically integrated operations, increased transaction costs and a loss of flexibility. It may be impossible for a pricing scheme to support efficient, decentralised, decisions by the access provider and the access seeker about use of the shared facility.

Moreover, the wide applicability of Australia's regime increases the potential 'investment-chilling' effects (as any potential infrastructure investor may be subject to a declaration), and increases the potential for regulatory error, as regulators may have to regulate access in unfamiliar industries for which they lack expertise, international precedent and information.

The challenge, therefore, is to establish a regime that maximises expected benefits less expected costs. In doing so, it should take account of all expected benefits and costs — including the large potential costs of regulatory error, forgone investment and administrative and litigation costs.

Although the initial years of the National Access Regime delivered economic benefits, such as increased competition, lower prices, improved service quality and greater consumer choice, the regime was exclusively applied to government owned (or recently privatised and heavily regulated) firms, which are regulated in almost every advanced economy and where the expected net benefits of regulation are relatively high. Those are industries where the 'technology' of regulation, though inevitably imperfect, is relatively well-known and where regulatory issues have been extensively documented and receive considerable ongoing attention from policy-makers, regulators and scholars.

It can be argued that those areas represented the 'low hanging fruit' and that the application of the access regime to industries where government has traditionally had a smaller role will involve additional regulatory complexities and a less favourable balance of costs and benefits.

Drifting interpretations

While the final form of the National Access Regime differed in important respects from the Hilmer Report's recommendations, it retained the emphasis on imposing substantive hurdles before a facility can be declared.

However, as the regime has been successively interpreted by the National Competition Commission (NCC), the Australian Competition Tribunal (ACT) and the courts, the test for declaration has been

substantially diluted over time. The hurdles to intervention have been effectively lowered, placing greater weight on the desirability of allowing access to occur than on the importance — stressed by the Hilmer Report — of strictly confining any mandatory rights of third party access. This gives regulatory agencies a wide discretion and increases uncertainty for investors, raising the potential costs of the regime. This trend has now been somewhat reversed by the recent High Court (2012) decision, although that decision only touches on some elements in the declaration process.

There is a legitimate role for an access regime, but given the large potential costs and less clear-cut welfare gains from having low hurdles to the granting of access, that role should be carefully limited, as was stressed in the Hilmer Report. In particular, the regime must be structured such that the large costs from over-riding property rights are only borne if there is a substantial prospect of large net benefits to the broader economy.

Moving forward: retaining the balance in the National Access Regime

For a broad access regime that applies to the whole economy, the conditions for access should account for the risk of regulatory error and recognise that the costs of regulators being unduly generous to access seekers (setting a low hurdle for access) can be far greater than the costs of being unduly stringent (setting a high hurdle for access). This insight was central to the access regime that was proposed in the Hilmer Report, which granted third party access only for essential or bottleneck facilities and within the confines of tightly defined criteria.

After several years of 'loosening', the High Court decision in the 2012 Pilbara railways case has tightened regulatory interpretation of the declaration test in some respects, restricting declaration to cases where the asset is not privately profitable to duplicate (and so essential for entry) and stressing that it is generally not the role of the Australian Competition Tribunal to overturn a Ministerial determination on whether access would be contrary to the public interest.

Both interpretations bring the regime somewhat more into line with the Hilmer Report's original recommendations. The 'privately profitable' test makes it less likely that the regime would apply to industries where the costs are likely to outweigh the potential benefits. And if the Tribunal is restricted in its consideration of whether access is in the public interest, it has a greater incentive to focus on the other criteria, instead of making the public interest test (which is inevitably somewhat open-ended) do all the work in determining access decisions.

Establishing clear declaration 'rules'

It is very expensive to conduct an inquiry into the costs and benefits of declaration for each individual case. Instead, there is a strong case for a set of rules, or filters, which limit application of the regime to instances where it is likely to do the most good — that is, where expected benefits are high and expected costs low — and exempt areas where the chances of regulatory error are too high. A framework is needed in which regulators are encouraged to intervene only when significant improvements in efficiency are in prospect.

Rules economise on the costs of individualised assessment of particular cases and provide greater up-front certainty and specificity in the decision situation, which fosters investment. They also reduce potential litigation costs and rent-seeking incentives. However, these advantages of clear rules (sometimes referred to as 'bright line tests') should be balanced against the cost of both likely greater outlays required for their up-front formulation and of potential under- or over-inclusiveness in particular instances.

The more permissive the criteria for declaration, the greater the costs from *ex ante* uncertainty and *ex post* enforcement. These costs are higher if, as with an access regime, case-by-case assessment of consequences will involve inherently contentious judgements that ultimately may need to be taken by decision-makers with limited information and expertise. This can induce (essentially unproductive) expenditure in seeking to establish a case one way or another, and can result in high error costs and unnecessary uncertainty.

Appeals

For the reasons set out above, the possibility of error in access regulation decisions is clearly very high. Applying the National Access Regime (and declaration decisions in particular) involves regulatory decisions of quite exceptional complexity that require lengthy economic, technical and commercial analysis and considerable information. The process is complicated and time-consuming and entails a significant degree of discretion by regulators. The overwhelming impact that access regulation has on the property rights and commercial prospects of regulated businesses, the economic significance of the infrastructure at issue (indeed the legislation applies only to facilities of 'national significance'), and the long-term detriment and distortions which might arise from uncorrected regulatory errors, are all strong indications that an appeals process is valuable.

An appeals process provides a relatively low cost method of correcting errors. Seen in an efficiency perspective, it is cheaper to focus resources on the sub-set of cases where errors were probably made than to invest in improving the accuracy of the initial determination (which requires extra expenditure in every case).

Further, the knowledge that every decision is potentially subject to Tribunal review is a powerful incentive to provide fair, reasoned and transparent decision-making. The possibility of Tribunal review mandates attention to detail, focusing attention on the need to ensure that every interested party is afforded a full and frank assessment of their position and hence increasing accountability.

Moreover, appeals can "nip errors in the bud". While they may (and likely will) add to the length of time required for decisions, those delays must be viewed in the context of decisions that can be for twenty years or more. It may be that even without appeals, incorrect decisions would ultimately be corrected, for instance, through specific legislation. But that is likely to be even more costly than the appeals process and is in any case uncertain.

In all of these ways, effective appeals mechanisms contribute to improving the quality of, and giving greater legitimacy to, the inevitably contentious decision to over-ride private property rights. But

additionally and importantly, the experience of the competition (trade practices) provisions highlights the role of appeals in clarifying the interpretation of complex economic legislation: indeed, in the competition laws, much of the progress in interpreting the provisions has come from the work of the Tribunal (in areas such as market definition) and the courts (for instance, in clarifying the meaning of 'taking advantage of market power'). In this way, individual appeals confer a vital positive externality on all parties actually or potentially affected by the legal process, improving that process' efficiency.

Merits review

Merits review plays a critical role in improving the quality, transparency and accountability of regulatory decision making.

The possibility of error is the public policy basis of merits review. It plays a fundamentally different role from judicial review, which is where a court determines whether an administrative decision was lawful, rather than factually correct.

The availability of merits review should be retained. It provides a way for errors to be reviewed by those with appropriate expertise. The High Court's recent decision prohibits a full *de novo* review. The decision focuses merits review on error correction, avoiding a more time-consuming and costly review process and, potentially, preventing a shift of primary decision-making responsibilities to the review body.

1. Introduction

Following the recommendations of the Hilmer Report, Part IIIA of the Trade Practices Act (now Part IIIA of the *Competition and Consumer Act 2010*) mandated competitors' access to a firm's facilities, where that access meets a number of conditions and promotes competition in a relevant market. In broad terms, where competition in a market is dependent upon access to a 'bottleneck' or 'essential facility', Part IIIA allows for 'declaration' of the service provided by the facility, imposing a right of third-party access (or at least, of regulated resolution of access disputes, where that resolution may or may not give rise to actual access).

Mandated access was a fundamental element of the competition law reform program and the main mechanism to achieve market liberalisation in areas dominated by traditional, vertically integrated, monopolies. It was intended to allow competition to develop in the potentially competitive segments of previously vertically integrated monopolies while providing for regulation of their natural monopoly component. Access regulation has become one of the central, but also the most complex and controversial, tasks of regulatory authorities.

As an umbrella framework, the National Access Regime is intended to: promote more efficient use of existing nationally significant infrastructure; encourage new firms to compete in upstream and downstream markets and encourage efficient investment in those markets; and contribute to lower prices and greater choice for consumers. Its economy-wide application is intended to encourage a consistent approach to access regulation across industries.

While there are a number of different pathways by which access to an infrastructure service can be obtained under Part IIIA (namely declaration, access through an effective access regime and certified undertakings), this submission focuses on provisions for having a service declared under the regime.

The regulator faces a number of challenges in making decisions that produce net benefits for the community. It must decide whether to declare the asset, be the ultimate arbiter of the terms and conditions of access and set the price of access. In each case, the task of weighing costs and benefits is difficult and involves complex and difficult to measure trade-offs. Not only are the direct costs and benefits difficult to determine, the regulator must account for indirect costs – including the effects on the incentive to invest and the costs of inevitable regulator errors. The unique nature of the National Access Regime, applying across the whole economy rather than to selected industries − to public utilities and to private firms, to regulated domestic monopolies and to exporters − increases these indirect costs. In the sections that follow, I identify each of the major elements involved in the regime, as a basis for a more detailed assessment of their implications.

The process for having a service declared under the National Access Regime

If the facility owner and access seeker cannot agree on access terms, the access seeker applies to the National Competition Council (NCC) for a recommendation to declare the asset. If the Minister, having received the NCC's recommendation, declares the asset, the owner is forced to deal with the access

seeker. If the parties cannot agree on any aspect of access, the regime requires the ACCC to arbitrate. In effect, the service is regulated and the ACCC (taking into account the implications for competition, efficiency and the wider public interest) can specify the prices and conditions under which the asset owner grants competitors access to its facilities.

Whether to declare the asset

An access regime will increase efficiency, and benefit the community, if its costs are less than its benefits. Both the direct and indirect costs and benefits of declaration are difficult to measure and vary from case to case. The appropriate outcome, therefore, also varies from case to case and is rarely obvious. Regulators face a complex task and require considerable information. Weighing the expected costs and benefits, with imperfect information about each, involves judgement and discretion. Errors are inevitable. It is challenging for regulators to maximise the positive difference between the expected benefits and costs of intervention, including the expected costs of regulatory errors.

Not only is it difficult to make efficient decisions in each particular case, there is a cost to merely having an access regime, creating a further challenge for regulators. The chance of a facility being declared reduces the expected returns for investors and discourages efficient investment. So does being forced to invest resources in contesting regulatory proceedings (litigation costs), all the more so if the facility is wrongly declared (when the costs to the facility owner are greater than the benefits to others).

An access regime can also reduce the incentives for access seekers to invest efficiently (i.e. can discourage otherwise efficient by-pass), instead encouraging them to seek access to existing facilities, reducing competition and diversity in the long term. And entrants have a greater incentive to seek access if they can impose costs on the incumbent and compete with it in markets for inputs or outputs. That is, the existence of a regulatory regime can encourage regulatory gaming, which is a form of rent-seeking.

The presence of an access regime may itself discourage monopolistic behaviour (if not using monopoly power reduces the risk of being declared), but regulatory error reduces this benefit. For instance, the risk of being wrongly declared or wrongly exempted lowers the expected benefit to the monopolist from refraining from monopolistic behaviour. All these are potential costs of the regime that need to be weighed against potential efficiency gains.

As the balance of costs and benefits varies, so does the case for mandatory access. For example, the costs of interference with vertical integration will differ across industries and firms: in some cases, it is easy to define the service in ways that avoid negative cost externalities; in others, economies of scope and of ongoing coordination within the firm in the face of demand and supply shifts are important and injecting a third party undermines their achievement. For example, the expected net benefits are lower, and the likelihood of regulatory error is higher, for traditionally private areas of economic activity than for public utilities.

Even when regulation is warranted, it is important to compare the costs and benefits of access regulation with alternative options, including that of relying on the safeguards available under Part IV of

the Competition and Consumer Act, most obviously section 46 of that Act which deals with misuse of market power, including through refusals of access.

Setting conditions and terms of access

A declaration imposes significant direct costs on the owner of the declared asset, such as compliance costs, administrative costs and constraints on efficient pricing and service delivery.

Access regulation involves complex, industry specific technical issues in a dispute-prone context where the parties have misaligned incentives. It is difficult for regulators to set the access price correctly: indeed it may be impossible for any pricing scheme to support efficient, decentralised decisions by the access provider and the access seeker about use of the shared facility. The limited information available to regulators raises the risk of costly regulatory error.

The efficiency with which price and non-price conditions are set is crucial to the likely consequences of access regimes. In practice, setting the price and non-price conditions of access is never easy. However, particular difficulties arise when access conditions need to be determined for activities involving complex, highly vertically integrated, production systems. There is a risk that mandating access will disrupt production processes and increase costs.

Costs that access imposes on the asset owner, such as loss of the asset owner's flexible operations, are not easy to control through regulation. It is often infeasible to internalise the disruption and opportunity costs arising from third party access through market based or rule based mechanisms. To that extent, the access seeker will not face the full consequences of its decisions, creating the risk of excess costs being imposed.

Setting the access price

Those excess costs would occur because access seekers and the access provider will only take efficient decisions if the price of access accurately reflects the opportunity cost of that access, covering the costs entrants impose on the asset owner. However, setting the appropriate price requires much detailed, difficult to obtain information about industry cost and demand conditions, making some degree of regulatory error inevitable.

When mandatory access, and the regulatory error inherent in any process of setting the terms and conditions of access, disrupts vertically integrated operations, reduces operational flexibility and increases transactions costs, there is a trade-off between these increased costs and the benefits from increased competition.

As a result, the accuracy of access price determination is central to the economic impact of an access regime. However, setting access prices involves unavoidable trade-offs. The lower the price, the greater the risk of adverse effects on investment incentives, the greater the use of the facility by entrants (which may increase overall costs), the greater the incentive for the facility owner to sabotage rivals, the more demand will switch to relatively high cost entrants and the greater the chance of inefficient entry. Conversely, the higher the price, the smaller consumers' gain will be, the more likely efficient entry may

be deterred and the greater the encouragement to inefficient by-pass. An incorrect price also distorts input mixes in downstream markets.

A uniquely Australian regulatory framework

Australia's National Access Regime is unique. No other OECD country has a generic, economy-wide, provision of this kind, though many countries impose third-party access requirements in particular regulated industries, and a few (essentially the US and to a limited extent the EU) have some scope for the courts to mandate third-party access as a remedy under their competition laws.

Although the first few years of operation seem to have brought benefits, such as increased competition, lower prices, improved quality and greater consumer choice (see Fels 2001), the regime was exclusively applied to government owned (or recently privatised and heavily regulated) firms, where the expected net costs are relatively low. These firms were in industries which are regulated in virtually every advanced economy and where the 'technology' of regulation is broadly similar across countries. That provides investors with a reasonable understanding of what regulation involves and helps guide regulators as they grapple with individual decisions. Moreover, when new issues arise in these industries, they tend to do so in many jurisdictions, allowing learning to occur and inviting research on the consequences of alternative approaches.

In contrast, the wide applicability of Australia's access regime increases the potential investment-chilling effects (as virtually any infrastructure investor may be subject to a declaration) and increases the potential for regulatory error, as regulators may have to decide applications in unfamiliar industries for which they lack expertise and information.

The challenge is to establish a regime that maximises expected benefits less expected costs. That balancing should take account of all expected benefits and costs — including the large potential costs of regulatory error, forgone investment and administrative and litigation costs.

Given these potential costs, it would be inefficient to conduct an entirely open-ended inquiry into the costs and benefits of declaration in each individual case. Instead, there need to be rules, or ***filters***, which limit intervention to cases where the expected benefits of access are likely to be greater than the expected costs — and which filter out cases where the opposite is true. Such rules — which may be more or less 'bright line' in nature — increase predictability, making it possible for parties to take decisions without having to guess what some future regulator will do, reducing the chilling effect on investment. In this way, rules can reduce administration and litigation costs and rent-seeking incentives. However, designing these rules itself involves some costs – including in their up-front formulation and in the risk of their being under- or over-inclusive — and those costs too must be taken into account.

In summary, the key to setting an efficiency-enhancing access regime is to compare the costs and benefits of different options, which is what is done in this submission.

Structure of this submission

The submission follows the structure of the Productivity Commission Issues paper, although in a slightly different order. Chapter 2 'Reasons for having an access regime' examines how an access regime works from an economic perspective. Drawing on the economic analysis of law and of legal institutions, the discussion shows that an access regime replaces a 'property' rule with a 'liability' rule. What this means and why it may be desirable is discussed. Under some circumstances, economic efficiency may improve, but the shift from property to liability rules also risks imposing large costs on the economy.

Chapter 3 'Costs and Benefits of the National Access Regime' sets out the costs and benefits of intervention, and what determines them, in more detail. The potential costs and benefits vary greatly from case to case, for example depending on the extent of, and reasons for, vertical integration and the characteristics of related markets.

Mandating access does not only require the regulator to set the access price; rather, in most cases, there must also be extensive regulation of the so-called non-price terms and conditions, which govern exactly how the access seeker will use the facilities in an operational sense. The effect of these too must be taken into account.

Chapter 3 concludes that the costs of setting the hurdle for access unduly low in terms of access are likely to be greater than the costs of setting the hurdle somewhat too high. The Hilmer Report was well aware of this balancing and therefore recommended a cautious and restrictive approach to the grant of mandatory access.

Chapter 4 'The regime in practice', then examines the current approach for addressing the regulatory challenges of mandatory access, against the background of how the hurdles that need to be met before an asset is declared have evolved under case law. The trend has been to lower the hurdles, but the recent High Court (2012) decision has reversed that trend in some respects.

Chapter 5 'Institutions and processes' focuses on merits review and sets out an economic framework for understanding the contribution it makes. The chapter shows that properly designed merits review, while certainly not costless, is an efficient way to reduce regulatory error.

Finally, Chapter 6, 'What should be the future role of the National Access Regime?' draws conclusions and suggests future directions for the regime.

2. Reasons for having an access regime

Property rules

> *"As a general rule, the law imposes no duty on one firm to do business with another. The efficient operation of a market economy relies on the general freedom of an owner of property and/or supplier of services to choose when and with whom to conduct business dealings and on what terms and conditions. This is an important and fundamental principle based on notions of private property and freedom to contract, and one not to be disturbed lightly."* (Hilmer Report p.242)

Among the basic institutions of a market economy are private property rights and freedom of contract. Ownership of property brings with it a bundle of property rights, including the exclusive right to determine the use to which an asset will be put. Property rights include *exclusivity* (the right to use the property, transform it and to exclude others from its use); *transferability* (the right to transfer the resource to others at some mutually agreed price); as well as *appropriability* (the right to derive and keep the income produced from the resource) and *divisibility* (the right to partition, re-define and create new property rights in response to changes in economic and market conditions).

Clear property rights bring many benefits, most significantly the incentive for an asset to be put into its highest valued use and to maximise the net wealth generated by an asset through expansion, contraction or disposal decisions. By delimiting ownership, as well as the rights associated with it, they discourage otherwise wasteful investment in merely seeking to redistribute shares of the potential output 'pie' and hence allow asset owners to focus on making the best use of their assets.

For example, third party access to exclusive facilities is common throughout the economy and is usually arranged through mutually beneficial agreements between the owner of the facility and the party desiring access. Woolworths and Coles sell access to their supermarket shelves (as well as stocking their own products), patent holders licence their inventions, Apple sells access to its iTunes store to app designers, and banks negotiate access to ATM networks. Such private 'access arrangements' are pervasive and by allowing the division of labour, form the essential underpinning of complex economies.

The nature of these arrangements and their institutional underpinnings has been extensively studied in the scholarly literature of 'law and economics'. That literature can cast important light on the questions the Productivity Commission is grappling with.

Central to that literature is the distinction between 'property' and 'liability' rules.[1] A 'property rule' grants the owner of property the right to preclude others from impinging on that property. Under a property rule, another party can use the asset only by securing the owner's permission. The owner has

[1] The distinction between property rules and liability rules was introduced by Calabresi and Melamed, 1972.

the option, but no obligation, to negotiate with the other party for compensation in exchange for giving that party use of the property.

Freedom of contract means a firm has the right to choose with whom it wishes to deal and on what terms, and the right to choose not to deal with another party. While the right of ownership creates incentives for people to seek the most productive uses for their assets, the freedom of contract reduces the cost of identifying those uses and giving them effect.

Mutually beneficial agreements make both parties better off and so promote efficiency. A supermarket chain could stock its stores exclusively with its own brand products, but it is more efficient (and profitable) to allow other suppliers access, just as Apple could restrict users to apps it had designed but instead gains by harnessing the creativity of third party developers. Such voluntarily devised, mutually beneficial access agreements will tend to allocate resources and property rights to their highest valued use and reduce the costs of supplying goods. Competition will usually force suppliers to pass these cost savings on to consumers through lower prices or improved product quality.

Transactions costs may prevent some efficient reallocations of rights from being made. For example, two parties may fail to reach a mutually beneficial agreement because of asymmetric information and strategic behaviour — say as a result of each party's uncertainty about the other's valuation and hence its incentives to hold out for a greater share of the gains. Such 'holding-out' is a type of rent-seeking behaviour: the parties are fighting over a fixed amount and spending resources trying to transfer resources from the other party (or stopping the other party taking those resources from them). Models of negotiation show that strategic behaviour (a transaction cost) is more of a problem the greater the bargaining range, that is, the wider the set of potentially mutually acceptable outcomes. A larger bargaining range to fight over encourages more resources to be spent on rent-seeking and is likely to lead to high bargaining costs, including the risk of an expensive breakdown in negotiations that leads parties to 'leave money on the table'.

Disagreements over the distribution of the potential gains from trade between the contracting parties are not the only source of possible bargaining inefficiencies. Rather, such inefficiencies may also arise where some third party is affected (such as downstream consumers) by any bargaining outcome, but it is too costly for those third party interests to be represented in negotiations. In that event, negative externalities imposed on the third parties could lower efficiency (more than offsetting the gains to the parties to the contract). For example, when an entrant and incumbent negotiate, consumers are not represented. If one party has monopoly power, consumers cannot rely on competition to protect their interests. Even where there is scope for an efficiency-enhancing agreement that would impose costs on the incumbent monopolist but benefit consumers by more, that agreement is unlikely to be reached — as the transactions costs of organising a compensating payment from the consumers to the incumbent monopolist are too great. Or even worse, the suppliers could come to a mutually beneficial agreement that harms consumers and reduces efficiency, for instance, by forming a cartel (which adds to the waste of monopoly the resource costs of the cartel itself).

Liability rules

In contrast to a property rule, a liability rule allows a party to act in a way harmful to another so long as it is willing to make a compensating payment, determined by some central authority (such as a court or regulatory body). For instance, if A damages B's car and A is liable to compensate B for the damage, B's entitlement is protected by a liability rule.

A liability rule may improve efficiency if it reduces transactions costs and leads to efficient agreements (i.e. agreements that increase society's wealth) which could not or would not be made under a property rule. For example, liability rules are used in accident cases, where *ex ante* negotiation between the parties to mutually beneficial outcomes is infeasible.

An access regime replaces a property rule with a liability rule

Governments often abrogate property rights for a public purpose. The "essential facilities" doctrine is one example. It was developed by US Courts as a remedy in anti-trust (competition) proceedings, and provides the conceptual basis for Australia's Part IIIA access regime. The court in *MCI Comm. Corp. v. American Tel. & Tel. Co.,* 708 F.2d 1081, 1132-33 (7th Cir.) *cert. denied,* 464 U.S. 891 (1983) provided the classic statement of the requirements for providing a third party with use of an alleged monopolist's assets under the essential facilities doctrine (this statement was cited in the Hilmer Report, p.244):

> *"(1) control of the essential facility by a monopolist;*
>
> *(2) a competitor's inability practically or reasonably to duplicate the essential facility;*
>
> *(3) the denial of the use of the facility to a competitor; and*
>
> *(4) the feasibility of providing the facility"*.

In these circumstances, the court can require the owner of the 'bottleneck' facility to share access with its competitors on reasonable terms, where 'reasonable' is determined by the courts. In the specific case cited, the court did so to avoid the costs to consumers which it concluded would otherwise arise from the monopolist's 'leveraging' of its market power into the downstream market, where that leveraging permitted the monopolist to claim additional monopoly rents.

Concerns about the scope for such rents to be secured at the expense of consumers and of efficiency more broadly were echoed in the Hilmer Report, which noted that *"An 'essential facility' is, by definition, a monopoly, permitting the owner to reduce output and/or service and charge monopoly prices, to the detriment of users and the economy as a whole"* (Hilmer Report p.239). It recommended an access regime *"to provide a mechanism that will support competitive market outcomes" (Hilmer p.242) and overcome the "essential facilities problem"* (Hilmer Report p.240).

An access regime is a type of liability rule.[2] It determines circumstances under which a party may use another party's assets so long as it is willing to compensate the owner through a liability payment determined by a third party (in the case of Part IIIA, the ACCC, at least at first instance). An access regime over-rides the facility owner's property right of exclusivity and freedom of contract — and imposes transactions that it would not voluntarily have entered into. It thereby converts a property rule — under which the owner of a facility can choose whether or not to allow third-party use of that facility — into a liability rule.

As a result, another way of looking at what an access regime is trying to do (and whether and when it might be justified) is to ask: '*Under what conditions will purely commercial bargaining between the potential access provider and the access seeker fail to achieve efficient outcomes, and justify being replaced by a mechanism based on some form of collective fiat?*'

From an efficiency perspective, liability rules should be relied upon when at least two conditions are met:

1. Transactions costs – including those associated with third party effects – will prevent wealth-maximising reallocations of rights from occurring under an approach based on property rules alone; and

2. A liability rule, and especially the conditions associated with that rule (including payments for costs imposed on the rights-owner), can allow those transactions to occur in a way that, given the costs and benefits of the rule, on balance increases society's wealth.

Addressing those conditions requires a careful specification both of why property rules will fail to result in efficiency *and* of why a liability rule will, on balance, do better. The costs of any 'property rule failure' must, in other words, be set against the costs of possible 'liability rule failures'.

Usually, the potential benefits from mandating access come from promoting competition in upstream or downstream markets — giving competitors access to these markets where the asset owner would otherwise use its monopoly power to refuse access to the facility, and so to the dependent markets. As the Hilmer Report noted, *"where the owner of the 'essential facility' is vertically-integrated with potentially competitive activities in upstream or downstream markets — as is commonly the case with traditional public monopolies such as telecommunications, electricity and rail — the potential to charge monopoly prices may be combined with an incentive to inhibit competitors' access to the facility."* (Hilmer Report p.241). In those circumstances, allowing access may be indispensable for competition in the related market to develop, or may allow that competition to develop more efficiently than would otherwise occur (for instance, by avoiding inefficient duplication). However, those potential benefits need to be set against the potentially substantial costs that liability rules impose – most obviously, the risk of the terms on which the asset user compensates the asset owner being set incorrectly.

[2] See the longer discussion in Ergas (2009).

A consideration of the general conditions determining the relative efficiency of property and liability rules can help inform this balancing. As a general matter, property rules are attractive when allocation through market transactions, including by negotiation between owners and prospective users, works well. In contrast, liability rules are attractive when the costs of allocating resources through central regulation are low, at least relative to the costs of doing so through property rules.

That, in turn, will depend on the ease with which a central regulator can identify the values at stake and allocate them in a way that ensures the resource is allocated to its highest value uses. The greater the difficulty involved in such third party assessment of valuations and of net efficiency impacts, the greater the risk of a liability rule performing poorly – both in absolute and relative to a property rule, even when the property rule itself is far from 'first best' ideal.

Declaration of an asset involves replacing a property rule with a liability rule, and requires the regulator to value what is taken from the asset owner – at the very least, the costs the access seeker's use of the asset imposes. These costs are almost always difficult to measure and require substantial information about the asset owner's production processes and subjective valuations, though the extent of these difficulties will vary from industry to industry. That raises the issue of regulatory error and of the impact the fact or risk of that error has on market outcomes.

What can be said is that if the regulator cannot accurately measure the costs imposed by the access seeker, then a liability rule risks imposing efficiency losses. For example, if A is allowed to impose a pollution externality on B in exchange for a payment that is less than the marginal social cost of the damage, excess pollution will be emitted, and more polluting activities may inefficiently displace less polluting activities in society's output mix. Equally, in the case of an access regime, if the access price is set below costs imposed, the result may be both to deter efficient investment in the regulated asset and induce excessive entry in the dependent market (as high cost access seekers may find it profitable to enter).

As a result, even if the transactions costs involved in effecting reallocations of the asset under a property rule would prevent each and every potential welfare-improving trade from occurring, the property rule might still be expected to perform better than a liability rule where the risk of regulatory error was high. It follows that all else equal, the more difficult it is for the regulator to measure costs, and more broadly assess the consequences of alternative settings of the price and non-price conditions of access, the greater will be the likely advantages of a property rule over a liability rule and the less desirable will be declaration.

Taking that broad framework as given, the following section examines the potential costs and benefits from an access regime in more detail. An access regime produces benefits in limited circumstances, but has the potential to impose harm, especially when applied to firms that are not historically government owned or usually heavily regulated. Given the risk of such harms, the costs of being unduly generous in terms of access can be greater than the costs of being unduly stringent, justifying a cautious approach to mandating access.

3. Costs and benefits of the National Access Regime

An access regime will increase efficiency, and benefit the community, if its costs are less than its benefits. That balancing is inherently difficult, all the more so as the existence of an access regime will affect behaviour, creating costs and benefits, even for firms not directly involved in declaration applications. Both the direct and indirect costs and benefits of declaration are hard to measure, raising the prospect of regulatory error – which imposes potentially substantial costs of its own.

When an access seeker applies for a declaration, that imposes significant direct costs, such as compliance and administrative costs and constraints on efficient pricing and service delivery. Once a service is declared, mandatory access can then impose additional extensive costs, such as disruption of vertically integrated operations, increased transaction costs and a loss of flexibility. The greater the extent of vertical integration, and the greater the role it plays in allowing the facility owner to efficiently respond to shocks, the greater these disruption effects are likely to be. These costs are illustrated with examples of the costs of granting access to the Pilbara iron ore railways.

Access regulation involves complex, industry specific technical issues in a dispute-prone context where the parties have misaligned incentives. It is difficult for regulators to set the access price correctly: indeed it may be impossible for any pricing scheme to support efficient, decentralised decisions by the access provider and the access seeker about use of the shared facility. The limited information available to regulators raises the risk of costly regulatory error.

Also important are the potentially large indirect costs of an access regime: these include disincentives for investment and incentives for strategic behaviour. Indeed, even the risk of having an asset declared can discourage investment by potential access providers, while the option of securing declaration may induce potential access seekers not to invest when they otherwise might. Moreover, the wide applicability of Australia's regime increases the potential 'investment-chilling' effects (as any potential infrastructure investor may be subject to a declaration), and raises the potential for regulatory error, as regulators may have to regulate access in unfamiliar industries for which they lack expertise, international precedent and information. Last but not least, regulation can encourage wasteful strategic behaviour as parties attempt to manipulate the processes and rules to their advantage.

The potential benefits come from increased competition, overcoming transactions costs and preventing inefficient by-pass. After reviewing the various kinds of cost access regulation entails, these potential benefits are examined in detail. It is concluded that the benefits are often uncertain and depend on difficult to measure characteristics of the facility and related markets. Having considered the potential costs and benefits, this chapter examines the balance between them, concluding that a cautious approach to imposing access is warranted.

Potential costs of an access regime

An access regime involves a number of potentially large costs, which may vary greatly from case to case. The Productivity Commission (2001, chapter 4) summarised these costs as follows:

(a) compliance and administrative costs;

(b) constraints on efficient pricing and service delivery;

(c) disincentives for investment;

(d) incentives for strategic behaviour; and

(e) regulatory failure.

Each of these is discussed below. However, before turning to that discussion, it is worth noting an additional possible cost of an access regime: that encouraging an incumbent and competitors to deal may facilitate tacit collusion, including by designing an access agreement that merely shares the rents in the downstream market. In that case, there would be no gains to consumers from access, while there are still likely to be efficiency losses (as colluding consumes resources and encourages the inefficient allocation of production between the colluding firms).

Compliance and administrative costs

Access regimes impose administrative costs on government and compliance costs on business. Costs incurred by government include:

a) Ongoing regulatory supervision and oversight, including the costs of collecting information and acquiring expertise;
b) Appropriate dispute resolution procedures, including the cost of arbitration; and
c) The costs associated with any review or appeal of a regulatory decision, some of which may be recovered through costs awards against the parties (but which are nonetheless real costs from society's perspective).

The direct costs incurred by business include:

a) The on-going resourcing cost of complying with a declaration decision; and
b) The direct cost of negotiating with access seekers, together with the cost of any arbitration, review or appeal resulting from those negotiations.

These information and implementation costs will tend to be greater the more complex, diverse and/or extensive the activity that is being controlled. They will also be greater the greater the extent to which the regime is being applied in areas which are rarely regulated overseas, and in which there is consequently little international precedent to draw on.

Declaration processes under Part IIIA that have targeted assets owned by private sector entities have been both lengthy and costly, reflecting the lack of any 'bright line' tests in the declaration criteria and the technical complexity of the areas in dispute, as well as the number of decision makers involved and of appeal avenues. Once a final decision has been made to declare a facility, additional direct costs and

delays can arise from separate regulatory processes (under the auspices of the ACCC) that are required to determine the terms and conditions of access.

Constraints on efficient pricing and service delivery

All access regimes limit or circumscribe the discretion of the access provider in the pricing and delivery of their services. Through the threat of compulsory arbitration, the access regime means the ACCC is ultimately responsible for setting the price and non-price terms of access and gives access seekers considerable leverage in negotiations with the facility owner. The efficiency with which those price and non-price conditions can be set is therefore crucial to the likely consequences of access regimes.

In practice, setting the price and non-price conditions of access is never easy. However, particular difficulties arise when access conditions need to be determined for activities involving complex, highly vertically integrated, production systems. In those cases, discussed below, there is a risk that mandating access will disrupt production processes and increase costs.

That risk arises because a major incentive to vertically integrate is precisely to reduce costs; indeed, in workably competitive markets, vertical integration will only persist if it increases efficiency. As Coase (1937) pointed out, firms exist because it is more efficient to undertake a range of activities within the administrative structure of the firm than by means of market transactions. In other words, whether an action is coordinated through the price system (that is, through contracting between firms), or within a firm (through the administrative processes of the firm) depends on which is cheaper: and in particular, which method minimises transactions costs. For example, it may be cheaper for a firm to provide its own inputs, rather than purchase them on the open market through a contract, because the firm may have cheaper and timelier internal dispute resolution mechanisms than using a court of law. Equally, monitoring costs may be lower within the firm; and there may be advantages in dealing with unforeseen or unusual events by vesting the responsibility to adjust in management rather than having to renegotiate contracts. Finally, a major advantage of internalising transactions within a firm is that it can reduce the incentives for opportunistic behaviour (as that behaviour would simply reduce the value of the firm) while still allowing ongoing adaptation to changes in circumstances.

For example, it is often the case that investments made in a vertical production chain are ‘relationship specific’. Once made, those investments are, in other words, of no or reduced value outside of a particular vertical relationship. This reduction in value can occur because such investments are ‘sunk’, in the sense that having been incurred, they cannot be redeployed outside of a particular market. These sunk costs result in bilateral monopoly and in the risk of opportunistic behaviour, as they create a stream of quasi-rents the parties may each seek to appropriate. Such appropriation involves deadweight costs (the resources wastefully invested in merely seeking to grab ‘slices of the pie’), as does defensive investment aimed at making it less likely (for instance, through penalty clauses in contracts). Bringing the transaction within the firm can avoid or reduce those costs, even if that internalisation results in some added agency costs (i.e. losses due to managerial inefficiencies and principal-agent problems within the firm and between the firm and its owners).

Mandating access could undermine these efficiency-enhancing reasons for vertical integration and increase production costs, perhaps substantially in some industries. Introducing additional users into a complex production process could impose negative externalities on the existing user, with those negative externalities more than offsetting any gain to the new user.

In principle, those negative externalities could be avoided by appropriately defined access entitlements. But in markets where vertical integration occurs because it saves on transactions costs, setting those access entitlements is likely to give rise to frequent, costly to resolve, disputes – after all, had it been easy for such entitlements to be defined and for disputes to be dealt with between parties contracting at arm's length, vertical integration would not have occurred in the first place. In other words, the fact that activities are organised within a competitive firm can in itself suggest that it will increase costs to force contractual arrangements on price and non-price terms.

It is dangerous to believe the extra transactions costs from mandatory access can be avoided simply by the appropriate setting of access prices. In practice, there is only so much prices can do to coordinate optimise the shared use of complex resources; indeed, were it easy for prices to undertake that allocative role, vertical integration would be unnecessary.[3] Rather, where shared use of complex resources is involved, whatever pricing mechanism is put in place would have to be supplemented by extensive and continuing non-price direction and administrative control, much as happens within the vertically integrated firm. Those non-price means of control may well end up bearing much of the coordinating burden; but their inherent limitations create the risk of inefficiencies.

Those risks reflect the difficulties involved in devising a satisfactory 'contract' between the access provider and the access seeker over shared use. As a matter of reality, any such contract is likely to be incomplete, in the sense of not envisaging and resolving the full range of issues that shared use will involve. For example:

a) Any agreement may not be able to fully *control for the quality* of the access seeker's use of the facility — the access seeker may, for instance, have the incentive and ability to reduce its own costs at the expense of degrading the facility or otherwise increasing costs to the facility owner.
b) The relationship between the access seeker and the facility owner may give rise to *hold-up risks*, particularly if the access seeker can delay, impede or even entirely prevent the facility owner from responding to changes which require alteration to the pattern of facility use. These hold-up risks can invite otherwise inefficient 'counter-measures' by the facility owner, such as investing in excess capacity (so as to have more of a 'shock absorber' in the event of disagreements about facility use) or, conversely, restricting capacity below efficient levels, if that allows the access seeker to be 'rationed off' the system.
c) And last but not least, further hold-up risks can arise in *the investment process*, to the extent to which that process becomes vulnerable to being hindered (for instance, through regulatory delays) by the access seeker. If access-seekers face incentives to act opportunistically in seeking

[3] Technical constraints on the ability of the price mechanism to deal with the type of allocation issues that arise in vertically integrated operations are discussed in Ergas (2009).

for themselves a greater share of the benefits from efficiency-enhancing investments, the fact or risk of such opportunism may prevent the investments from being undertaken.

Obviously, the burden of attempting to resolve the problems arising from these forms of incompleteness would fall on the regulatory agency responsible for oversight of the access arrangements. That burden may require substantial and ongoing regulatory and administrative costs, with detailed micro-management and oversight over many years in a dispute-prone context. The role of facility manager, in unfamiliar industries that are rarely subject to third party access overseas, would require expertise and experience unlikely to the found in a regulatory agency.

The poor incentives parties face in an access regime exacerbate these problems. The sharp asymmetry of interests between the parties, and the fact that neither is actually in a situation where it stands to gain much by building good-will, means that contracts are not self-enforcing and that incentives for strict compliance may be weak. Each has the incentive to impose costs on the other (what the access literature refers to as 'sabotage' or 'raising rivals' costs'), and there are limits to whether pricing can prevent this. The access seeker may free-ride by imposing negative operational and other externalities on the access provider, while the access provider may try to discriminate against the access seeker. As there are no ‘magic bullets’ the regulator can deploy to avoid those issues, costs are inevitably incurred that must be set against any potential benefits.

When mandatory access, and the inevitable regulator error, disrupts vertically integrated operations, reduces operational flexibility and increases transactions costs, there is a trade-off between these increased costs and the benefits from increased competition. The extra costs that entrants impose should be reflected in the access price; but doing so is obviously difficult, as those costs are only likely to be fully revealed as and when third party use occurs.

Practical difficulties setting terms and conditions of access

The long-running Pilbara railway access dispute provides an example of the difficulties involved in resolving disruption of vertically integrated processes and controlling additional transactions costs through access regulation. Third party access to a rail line reduces the asset owner’s flexibility, imposing costs on it. Both price and rule based mechanisms may be unable to give efficient capacity allocation and efficient levels of capacity reducing events such as derailments, especially when enforced by an access regulator. Access then results in excessive costs and will reduce efficiency.

The iron ore railways of the Pilbara are part of a vertically integrated production system, highly integrated with port and mine assets and do not interconnect into other rail systems.[4] For example, BHP-Billiton operates its Mt Newman line to maximise the volume of iron ore produced:

[4] Detailed analysis of the additional transactions costs from access regulation of the Pilbara iron ore railways is contained in Fels (2009).

> *'BHPBIO's trains do not run to a fixed schedule, but are operated on a flexible basis depending on variable demand for different products at the port, the need to remove ore from mine loading areas, which may have limited capacity to stockpile product, and operational events such as planned track maintenance or the failure of equipment….*
>
> *Because of the importance of pursuing overall system efficiency, that is, getting six different products from eight separate mine loadouts in the correct volumes (and, in the case of blended products, in the correct proportions and correct sequence) to the port for direct shipping, blending or stockpiling, BHPBIO has sought to ensure that its railroad can operate in a manner that provides a large degree of flexibility to cater for variability in mining operations, port operations, ship arrivals customer requirements and equipment reliability.' Van de Worp Affidavit (2007)*

Accommodating multiple users would require introducing timetabling; that would reduce the asset owner's operational flexibility, leading to lower throughput on the line. There is an option value to being the only user that reflects the value of the greater flexibility to respond to unexpected events. For example, access would reduce the flexibility with which the incumbents can optimise train movements to shifts in mine output, and ship arrival times, affecting its ability to deliver ore to world markets. This type of flexibility is very difficult to incorporate into a contract, particularly since the access seeker and access provider are likely to want it at the same time (Wills-Johnson 2007). A requirement to secure agreement from an access seeker to vary the transportation schedules would offer that access seeker ongoing leverage to extract 'rents' in return for agreement to such deviations.

The loss of the asset owner's flexible operations is not easily resolved by regulation, involving as it does complex issues of capacity allocation, opportunity cost, and non-discriminatory access.

In order for third parties to have access, line capacity must be identified, made available for their use, and, where necessary, transferred between users in an efficient way. Allocating capacity with multiple users is likely to increase transactions costs substantially. There is no straightforward regulatory solution to the problem of capacity allocation.

In the railroads, for example, 'capacity' is a relatively poorly defined concept, since the volume of traffic which can be handled upon a given network depends not only on the number and origin/destination of trains but also on the speed at which they are operated. Hence, a fully exchangeable "transport entitlement", governing access to tracks by competing users, would have to be a complex set of rights.

Regulation can allocate capacity on a rail network between multiple users through market based mechanisms (such as an auction process) or a rule-based or administrative mechanism. Ideally, market mechanisms promote economically efficient allocation of capacity by assigning capacity to the operators placing the highest value on that capacity. Unfortunately, market based mechanisms are impractical because of the complicated interactions and complementarities between train paths. Further, small numbers of users may stymie an auction process.

Nor is it clear that there exists a rule-based mechanism that can overcome the loss of flexibility, eliminate anti-competitive discrimination and still provide for commercially viable access.

Moreover, the ACCC is not well suited to allocating capacity. Regulators usually lack the resources, expertise, and information necessary to allocate capacity on a rail network, which requires complex calculations and a highly detailed knowledge of the particular rail network. Moreover, capacity allocation is a dynamic process that must change in response to demand and supply shocks within an existing configuration of assets and even more so, must adapt as the asset configuration changes over time.

However, regulators must operate within a procedural framework. Such a framework, designed to ensure procedural fairness to the parties and allow stakeholders to express a view, is necessarily time consuming. It is also therefore unsuited to capacity allocation on an ongoing and continual basis.

As a result, regulatory allocation of capacity – while reducing the prospect for unfair capacity allocation – is practically very difficult, if not impossible, and will inevitably impose efficiency costs when interposed within tightly vertically integrated operations. There is no real prospect of the ACCC proactively monitoring a facility on an ongoing basis as a result of arbitration.

Other transaction costs from third party access include those associated with breakdowns, derailments, maintenance, lack of personnel and other capacity-reducing events. Rail owners spend considerable resources on actions to reduce these costs: continued investment in maintenance procedures, imposing restrictions on rolling stock to prevent damage to the track and consequent disruption, and investment in the maintenance of rolling stock.

Efficiency requires that the sum of the costs of these events plus the costs of actions taken to reduce them be minimised. As noted above, an access regime is fundamentally a liability rule – a rule that guides use by imposing on the cost-causing third party user of an asset, strict liability for those costs. The efficiency of such a rule consequently depends on the extent to which liability for costs is properly signalled.

This issue obviously does not arise for a vertically integrated single user, as that user bears all the costs and hence has strong incentives for cost minimisation, including by coordinating track maintenance with train operations in order to maintain the line with limited disruption. Nor will the issue arise – or arise with great force – in situations where operating levels are inherently modular: in other words, where interaction effects between modules are small relative to those within modules, as would to some extent be the case for vertically separated rail systems. However, in a tightly vertically integrated system, asset use is subject to constant re-optimisation within and between functional levels. Events which cause reductions in effective capacity therefore impose system-wide costs.

However, every user of a railroad in such a system has the opportunity to cause ‘capacity-reducing events’. For example, a user might operate a train which breaks down or derails. Such events affect every other user of the railroad, and in this sense, are an externality cost imposed on other users. These types of costs are sometimes referred to as ‘congestion costs’, or ‘disruption costs’. An operator who

can shift costs in this way faces a weak incentive to reduce the occurrence of capacity-reducing events because it does not bear the full economic cost of its actions.

A new entrant, which only operates a small proportion of the total number of trains does not incur the full costs of delays caused by failures of its own trains; rather, it only incurs the direct costs, so has less incentive to take actions (such as properly maintaining its rolling stock) to reduce these costs. Efficient operation of the network requires, therefore, that the regulator develop mechanisms for internalising the costs of delays which train companies impose on other train operators. Ideally, each user should bear the full economic cost of any capacity-reducing event that it causes, to give the correct incentive to take cost-effective precautions to reduce their frequency and expected costs.

Indeed, in the absence of such a mechanism, an operator may actually have the incentive to increase the occurrence of such events, where such events have an asymmetric effect adverse to the access seeker's competitors and thus lead to overall strategic gains for the party at fault.

Properly specified contracts for access to track by competing users must consequently provide for penalties in the event that the user imposes delays on third parties. Correctly setting these penalties requires knowledge of the value of delays, but that may be difficult to measure.

In practice, there are a number of intractable problems with disruption costs. It is extremely difficult to define which disruption costs are compensable; as that decision invariably involves regulatory discretion, it gives rise to the possibility of regulatory error. Further, even identifying causes of disruption is likely to be disputed. Additionally, regulatory intervention involves fixed costs, which implies that there is a threshold level below which costs may be disregarded. Disruption costs that are too small to justify a regulatory proceeding or process are, therefore, effectively not compensable, which means that operators do no bear the full economic cost of their conduct, dulling the incentives for efficiency.

Even if a regulator reaches a position on what costs ought to be included, it has to monetise those costs. Parties to such a proceeding have an incentive to either increase or decrease the valuation a regulator places on disruption costs, depending on whether they are at fault or have been harmed. The resulting dispute provides a forum for regulatory gaming, strategic conduct and regulatory error.

Nor could these issues be resolved simply by defining a schedule of performance-based charges. In practice, the costs of a disruption depend both on the event itself and on the circumstances in which it occurs. In other words, every disruption is different, the costs it imposes are different, and the party or parties responsible for it are different. Given this, consequential loss simply cannot be incorporated into a pre-determined access price which every operator must pay.

This means that the monitoring and determination of a liability rule through performance-based charges would require constant regulatory oversight. This, in turn, would be costly, particularly where the parties disputed the findings of the regulator.

One response could be to reduce the occurrence of capacity-reducing events by imposing more stringent standards. But that would be costly in itself, both directly and in a broader efficiency sense.

In a direct, compliance cost, sense, such a prevention approach would require checking the wheel/rail interface of all third party trains and the weight/loading of ore cars However, it can take several years for inherent defects or problems caused by wear and tear to emerge, making it very difficult to monitor and enforce compliance. The inability to monitor key performance aspects of the third party's train operations extends to other operational aspects, such as maintenance standards, train-loading standards and train-driver conduct. Given these and other complexities, it would be impossible to specify all the ways in which an access seeker ought to comply and measure how third-party specifications interact with the rail system.

Moreover, such a prevention approach would impose broader efficiency costs. As with any liability rule, an efficient prevention standard would not normally entirely avoid disruptions – rather, it reduces their incidence to the point where the marginal benefit from doing so equals the marginal cost. As a result, a mere focus on prevention does not avoid, or allow the regulator to escape, the need to measure and value costs and benefits. Moreover, the rule must ensure it remains attractive for the incidence of disruptions to be reduced further if the marginal costs of doing so fall; and it must allow for some degree of disruption to occur, if the consequent marginal benefits exceed the marginal costs. But designing such a prevention regime would entail all the difficulties involved in attempting to rely on price signals to guide the decisions at issue.

Finally, standards regulation would limit the possibility for technical innovation, by requiring that any changes go through the regulator. In complex systems as exposed to ongoing change as the iron ore railways in the Pilbara, there is unlikely to be a regulatory solution that can provide the required flexibility at acceptable cost. Rather, as a practical matter, the ACCC is likely to support a constraint on facility owners continually changing the operating parameters of the line. It would do so because continual change – while perhaps innovative – may also amount to the constructive denial of access to the facility, thwarting the purpose of declaration. Of course, operational parameters could be changed, but the ACCC would need to be satisfied that the change was legitimate and not anticompetitive. To be so satisfied, a regulatory process would need to occur, which would of course limit the timeliness of operational experimentation. This too, would be a cost of declaration. Further, innovation in operating methodologies increases the chance for regulatory error.

Feasible pricing and regulatory mechanisms may be unable to internalise the costs that entrants impose on the asset owner. The result is excessive costs and it is uncertain whether access would be efficient – it increases costs and may raise or lower the price to consumers. If the increase in costs is greater than the benefit from lower prices, or the higher costs drive prices to consumers up, then access is inefficient.

A further cost would arise if the access price is set at the incorrect level. The access price should reflect the opportunity cost of that access, covering the costs entrants impose on the asset owner – including excessive costs.

But a regulator will never accurately be able to calculate the opportunity cost of access in complex, tightly coupled production and transportation systems. Rather, in practice, the difficulties associated with valuing opportunity costs mean that any access price would be based on some simplifying assumptions about capacity utilisation and demand-side variations over time. A simple estimate such as this would materially increase the probability of the access price being over- or under-estimated.

If the access fee is set too low, at less than the costs entrants impose, then there will be excessive entry – reducing the benefits from, or exacerbating the cost of, access. The access price would be ineffective at deterring low-value entry, potentially giving rise to purely inefficient entry. In that situation, the owner will have strong incentives to deny or hinder access. As well as consuming real resources, those attempts to prevent access from imposing uncompensated costs will increase the incidence of disputes and the demand for arbitration, using additional resources in a regulatory process that is likely to be protracted and complex. If the arbitrated outcome mandates access, then the network would be inefficiently used.

If the access fee is set too high, at more than access costs, efficient entry may be deterred, reducing the benefits from access. However, if access is inefficient, then an access price which is too high may provide an efficient outcome (no access), reducing the costs of access. In other words, the effects of too high an access price may be entirely infra-marginal (as, even at an access price that merely equalled cost, no entry would have occurred).

Disincentives for investment

A major concern is that an access regime may distort incentives to invest in infrastructure facilities or in related markets, both by the access provider and by the would-be competitor.

There are two broad means by which access regulation may affect the provider's incentive to invest (Productivity Commission 2001). It may:

(a) Reduce expected returns.

(b) Increase the level of risk faced by investors in essential infrastructure assets. In turn, this impact arises through two channels. First, access regulation reduces the ability of a firm to respond to unforeseen circumstances, thus increasing investors' exposure to market risk. And second, increased risk arises as a result of regulatory discretion, and the possibility that this discretion will be exercised in an unfavourable way.

Of course, increased uncertainty will decrease the provider's incentive to invest.

In considering these impacts, it is useful to start from the widely accepted proposition that a regulated access charge should be set so as to provide a return on investment commensurate with the regulatory and commercial risks involved such that investment will be triggered. If expected returns fall below that level, the access regime will deter investment. Several features of access regimes heighten this prospect.

To begin with, an access regime gives access seekers the *right* but not an *obligation* to use facilities. As access seekers are most likely to exercise this right when demand for services provided by those facilities is strong, this can amount to a 'one way bet'. If demand is low, access seekers do not seek access, leaving the access provider to bear the entirety of the facility's costs. However, if demand is high, access seekers exercise their right of access and share in the profits associated with the facility's success. The asset owner thereby bears the downside risk, but the upside benefits are shared with access seekers, truncating the asset owner's anticipated distribution of returns. Unless that truncation is expected to be offset through regulatory price setting, the effect will be to reduce the incentives to invest in the first place. Efficient, innovative investments may consequently be deferred or forgone. Even the threat that the regulator, in the name of reducing monopoly pricing, will appropriate returns on successful projects that compensate for the risk of investments that may fail will deter investment.

Second, as well as affecting the initial decision to invest, providing compulsory third party access can alter the incumbent's incentives to expand or modernise its facilities, or to construct additional infrastructure and offer new services. If competitors are guaranteed access to any under-utilised capacity, the former monopolist may well become reluctant to expand its facilities on a cost-minimising basis, preferring small, sub-optimal capacity increments to ones which are larger and ultimately more economic. A similar chilling impact on investment incentives will arise if the incumbent is required to share unique know-how, intellectual property or the other fruits of investments in R&D.

The possibility of access seekers appropriating the benefits of an investment and thereby obtaining a windfall gain deters investment. Such an effect can occur even in the absence of regulated pricing, to the extent that the declaration decision itself signals the possibility of a future regulated price.

Third, the difficulty of coordinating multiple users and the time taken to reach agreement on investment in a multi-user network can additionally deter or delay otherwise efficient investment. Differing levels of costs, revenues and investment benefits in multi-user networks, invariably mean that the process of investment is more protracted than if a single firm made the decision. When investments are 'lumpy', it is difficult to determine when, if ever, users of the facility ought to contribute to the capital cost of the investment.

The need for consensus, or in the alternative, a regulatory decision, can mean that the decision to invest is deferred or cancelled. This is because a firm, faced with the costs and uncertainties of such a process, may elect to make their investment in an alternative asset. Even where the investment proceeds, it is unlikely that it will proceed as rapidly as would be the case where a single-firm takes the decision to invest.

Fourth, all of these impacts are compounded by regulatory discretion and the risk of regulatory error which increases the level of risk firms face and reduces expected returns. For example, regardless of price, a firm will not invest where it feels that the regulatory regime will be applied capriciously. The greater the extent to which regulatory discretion creates the possibility of access charges being set below economic costs, the greater the degree to which it will deter otherwise efficient investment by

actual or potential access providers. Further, the direct compliance costs of regulatory intervention reduce investment returns.

Investment would not be deterred were it certain that the regulated access fee would be set to generate expected revenue for a regulated service or services at least sufficient to meet the efficient costs of providing access to the regulated service or services, including a return on capital sufficient to induce investment. As put by Davis (2002), 'investors seek both a return over time of the financial capital invested to construct access facilities of a particular value and an appropriate rate of return on that investment'. In other words, regulated pricing must ensure that investors both "get their capital back", as well as "earning a fair reward" on that capital.

But that is far easier said than done. In practice, the task requires an estimate of the 'physical costs' of providing access: a capital cost estimate and an operating cost estimate. Obtaining values for each of these physical cost estimates is an extremely complicated, time-consuming and fraught process. Disputes concerning regulatory pricing are rarely resolved to the satisfaction of all parties; that is, they tend to continue on a more or less ongoing basis for so long as access is imposed.

Accentuating the contentious nature of the process is the fact that there are innumerable ways in which existing and future assets can be valued by a regulator. They include the historic or acquisition value of the assets, their replacement or reproduction cost, their market value and the cost of being deprived of their use. Dispute over the asset value methodology is inevitable.

Nor is there a consensus view on the appropriate rate of return that investors ought to receive on their capital. This, too, is inevitably a forum for dispute, especially when asset markets are far from being in equilibrium.

Given an initial asset value, a regulator must also appropriately depreciate the value of that asset over time, and in accordance with the costs of usage of that asset. Again, this is also a controversial exercise. In principle, when the allowed rate of return is equal to the cost of capital, and assuming the regulator is in a position to ensure the allowed rate of return is actually earned, all consistently applied depreciation schedules will be equivalent in present value terms, albeit not in terms of signalling efficient use of the asset. In practice, however, asset revaluations, changes in regulatory practice and the possibility that willingness to pay will fall short of the amount required for full cost recovery mean the choice of depreciation profile is often crucial to the incentives to invest.

Moreover, even once methodologies are settled, the actual computational exercise is extremely difficult. It requires the analysis of very complex datasets, and it is thus not particularly surprising that errors are relatively common.

Given these considerations, cost estimation is a fraught and expensive regulatory process, making expected returns uncertain. The problem is especially acute in capital intensive industries, in industries where the assets are long lived, and where there is significant ongoing capital investment and repairs.

For example, in a submission to the Productivity Commission (2006), Queensland Rail estimated that capital costs comprise 60 percent of the total costs of rail infrastructure provision, with maintenance costs comprising 25 percent and other operating costs comprising 15 percent. It is worth noting that the size of these costs highlights the importance of the rate of return.

To make matters worse, operating conditions change, both on the demand and supply side, and these changes require adjustment to regulated pricing. Constant pricing adjustment based on short-run costs can undermine the incentives for investment and increases the scope and consequences of regulatory discretion. On the other hand, inflexible pricing can perpetuate regulatory error (or monopoly prices) indefinitely and in any event, give poor signals to investment and use decisions.

Last but not least, as well as undermining access providers' investment decisions, an access regime may also distort access seekers' incentive to invest, especially where regulated access offers a low-cost, low-risk alternative. If access seekers can benefit from the access provider's investment, the gain from making their own investments in substitute facilities is diminished. The lower the cost to the access seeker of using the access provider's facility, the less the gain from undertaking their own investments. When those costs are low enough, entrants will have incentives to invoke the compulsory access provisions, rather than bearing the difficulties and risks entailed in organising to meet their own needs. Mandatory access may thus discourage otherwise efficient by-pass.

Further, even the prospect of obtaining access to the monopolist's facility decreases the access seeker's incentive to invest in developing its own competing facility, thus perpetuating the monopolist's control over the facility and reducing the prospect of future competition. It is, in other words, the expected cost of access, rather than necessarily the actual cost of access, that influences build/buy decisions. Moreover, if a potential access seeker believes the fact of investing will reduce its future prospects of access, that too will deter it from proceeding with its own facility. As a result, the risk is that even the possibility of seeking access will deter investment and innovation, potentially curtailing socially beneficial head-to-head competition over the longer term.

At the same time as it deters desirable investment by access seekers in the upstream market, regulated access may result in over-investment in the downstream market. This is especially true where the regulator sets the price too low, such that access to the facility does not reflect the economic cost of supplying the service. As noted by the Productivity Commission:

> *"Consider, for example, a situation where access to the services of a vertically integrated provider is encouraged by an artificially low access price. This could lead to investment by other businesses to deliver the downstream service, even though they are less efficient at doing so than the access provider.*
>
> *This highlights the important point that increased investment in related markets based on inappropriate access prices and conditions will be a cost of access regulation not a benefit."* (Productivity Commission 2001, pp.88-89)

In short, setting the access price to improve on the unregulated outcome is difficult. If the price is too high, it will harm consumers and discourage efficient investment in related markets. If it is too low, it will deter investment in the regulated infrastructure service and there may be too much investment in related markets.

The Productivity Commission has argued that the efficiency losses from setting regulated prices too low could generally be expected to be higher than from setting them too high. It is more costly to deter investment in the essential facility, which underpins production in the related markets, than to hold back investment in the related markets. Further, the costs of error loom larger when they threaten large scale lumpy investments more typical of infrastructure markets. Yet regulators can have the incentive to favour low prices – as the adverse consequences of high prices are more immediate and transparent, while the effects of low prices may take years to manifest themselves (see Banks 2012, 15-16).

Incentives for strategic behaviour

Access regulation can create the incentives for both access seeker and provider to resort to inefficient strategic behaviour as they attempt to manipulate rules and processes to their advantage. The Productivity Commission (2001) outlined several, non-exhaustive examples:

a) Cost padding occurs, theoretically, when an access provider manipulates its underlying costs so as to secure a higher regulated price;
b) Capacity limiting occurs where an access provider builds smaller than optimal facilities, so as to reduce the amount of capacity available for access seekers;
c) Access seekers can use the threat of regulatory intervention to compel the access provider to agree to inefficient terms and conditions; and
d) Both access seekers and access providers have an incentive to 'game' the system in order to preserve a privileged position. For example, they might seek to manipulate the terms and conditions of entry in order to preserve their existing market shares.

In addition, as already noted, because access seekers may be able to externalise some of their costs onto the asset owner, there can be too much entry into the related market. The scope for rent-seeking can exacerbate that problem, as may the "one way bet" option discussed above.

Mandated third-party access redistributes income between market participants — most obviously between the access provider (whose shareholders will generally lose from the mandated access requirement) and the access seekers (which at least in the short run can hope to gain). Using regulation to improve the bargaining position of one party relative to another creates perverse incentives in that one party may prefer to rely on regulators to gain a financial advantage rather than bear the rigours of competitive outcomes.

The scope for such redistribution can create formidable incentives for 'rent seeking': that is, the making of investments aimed not at expanding society's capacity to produce, but rather at securing for oneself a larger share of any economic rents that may be available. Rent-seeking is costly; resources spent on it are completely wasted from society's perspective.

The greater the sunk investments the incumbent has made, the greater are the incentives for such rent-seeking. This is because those sunk investments create 'quasi-rents' (returns that exceed operating costs) that are an attractive target for rent-seeking conduct. The mere risk of such rent-seeking leading to the loss of quasi-rents may then deter further sunk investment going forward.

Finally, third party access arrangements can also reduce the incumbent's incentive to compete vigorously with its new rivals. If the apparent retention of market power — as measured say, by market share — ensures that compulsory access arrangements remain in place, the incumbent may have an interest in providing rivals with artificial room to grow. By the same token, entrants may seek to continue to appear weak, merely for the sake of ensuring that the access requirements persist.

Regulatory failure

Regulatory failure, strictly defined, occurs when regulation imposes economic costs that exceed its economic benefits. More generally, the term is often used simply to describe the limitations of regulation.

The complex nature of access issues means regulators inevitably exercise considerable discretion, raising the prospect of regulatory error. Regulators lack perfect information, their processes cannot but be imperfect and they themselves are not infallible. Moreover, the parties to regulatory proceedings have incentives to distort the information regulators receive and more broadly, to manipulate the regulatory process. Errors will therefore be made, reducing the net benefits from intervention. Where long-lived investments are involved, the costs of regulatory error can be substantial.

The Productivity Commission, in relation to access regulation, wrote:

> *"Information constraints and imperfect regulatory instruments mean that some degree of regulatory failure is likely in this area almost irrespective of how well regulators perform their task … such failure may be manifest in a variety of ways, including insufficient incentives for new investment or reduced incentives for cost-efficient service provision." (Productivity Commission 2001, p.91).*

The issue, however, is not whether regulators can achieve first best outcomes – they plainly cannot. Rather, it is whether regulation can achieve net benefits and how to intervene to maximise those net benefits. That requires taking account of all costs and benefits, including the costs of regulatory error.

For example, in an access dispute, the Competition and Consumer Act 2010 s.44X requires the ACCC, when arbitrating a dispute, to take into account:

- the direct costs of providing access to the service;
- the value to the provider of extensions whose cost is borne by someone else;
- the value to the provider of interconnections with the facility whose cost is borne by someone else;

- the operational and technical requirements necessary for the safe and reliable operation of the facility; and
- the economically efficient operation of the facility.

It is reasonable to assume, though, that regulated firms will have both more and better information about their own costs and the values their own customers place on the goods or services they produce than will the regulatory agency's staff, no matter how expert they may be. When technology and market demands are changing rapidly, the difficulties for regulators are compounded. And they are even greater in industries which are rarely regulated internationally, meaning that an Australian regulator would have little international precedent (or scholarly literature) on which to draw.

For example, access regulation has never previously been imposed on privately-owned, integrated, heavy-haul rail in Australia. To impose such regulation is a substantial undertaking. Given this, it is inconceivable that regulated access could occur overnight and without error. The potential for declaration to yield benefits needs to be weighed against this foreseeable risk of regulatory distortion.

The extent of that risk is obviously difficult to quantify. However, it can be shown that the greater the information asymmetry between the regulator and the regulated entity, the greater the 'information rent' the regulated entity must be allowed to earn for efficient outcomes to prevail.[5] The regulator's lack of information increases the risk of access charges being set too low, which would impose high social costs. As a result, efficiency requires that the regulator offset that risk in the setting of access charges. This in turn implies that the greater is the information asymmetry, the lower can be the net gain to consumers from regulation, the greater the cost of mistakes and the greater the chance regulation will reduce efficiency, suggesting caution in extending regulation to areas where regulators are bound to be poorly informed.

Potential benefits from an access regime

As explained in section 2, mandatory access protects an asset owner's property rights with a liability rule rather than the usual property rule. That could create benefits when a property rule does not work well – when transactions costs prevent efficient agreements from being made.

The typical context for an access regime is an entrant being refused access by the owner of an essential facility that may be a natural monopoly. That refusal may reduce social welfare, for instance if the failure of the parties to reach agreement occurs because they do not 'internalise' to their negotiations the benefits that access would provide to third parties (such as consumers).

A first potential benefit from an access regime can therefore come from increased competition in related markets – a benefit which the parties themselves do not obtain (as it flows to consumers) and hence would not give weight to in reaching (or not reaching) agreement.

[5] This result is central to the model of regulation developed by Laffont and Tirole—see Gasmi et. al. (1992).

But mandatory access has been applied to export industries, where an access regime cannot affect the price final consumers pay, which are set in world markets.

However, even if there are no third-party effects (such as gains to consumers), so that the interests represented in the bargaining capture all of the relevant gains and losses, other transactions costs may prevent an efficient outcome being achieved in unregulated negotiations between an access provider and potential users of its facilities. The second potential benefit from an access regime is that it may be a way of allowing these otherwise forgone agreements to be realised.

An example of such a benefit is preventing inefficient by-pass – for instance, the duplication of a natural monopoly. Mandatory access may prevent such cost-raising duplication. But inefficient by-pass can also have benefits for consumers, hence the extent of the gain from its prevention is uncertain.

Subsequent sections deal with each of these in turn.

Increased competition

The main justification for an access regime is to promote competition and benefit consumers in related markets (upstream or downstream) through lower prices, improved service quality, greater consumer choice and lower costs by the entry of efficient firms and increased competitive pressure on incumbents. That is recognised in the Part IIIA legislation itself, which specifies both an overall efficiency objective and that a facility shall be declared only when to do so would lead to a material increase in competition.

The regime applies to owners of essential facilities and aims to prevent them using their monopoly over the essential facility to extend their monopoly into a related market (upstream or downstream) by refusing access to their facility to competitors in the related markets (so called foreclosure or refusal to deal), thus increasing prices in the related markets and extracting additional monopoly rents.

A refusal to deal with competitors will only increase prices in limited circumstances, and even then the effect on efficiency is often ambiguous. The different cases are set out in Box 1.

Box 1 When does denying access to efficient competitors increase prices?

In most (but not all) cases, if a firm has monopoly power from owning an essential facility, there is no additional market power to achieve from eliminating efficient rivals in related markets. The rival is already at the mercy of the facility owner, who can extract monopoly profits through raising the price to use the facility. In fact, if the rival is more efficient at selling the related product than the facility owner, then the monopolist could increase profits by inducing the rival to be the sole supplier of the product (but it might need to restrict the price such a sole supplier could charge to avoid double marginalisation).

That said, there are cases where the firm can increase prices through refusing to deal. As the Hilmer Report pointed out:

Box 1 When does denying access to efficient competitors increase prices?

"The main cases where the owner of a vertically integrated monopoly will have an incentive to deny access to an essential facility are where the owner is price regulated in the essential facility market and where providing access might undermine a profit-maximising price discrimination strategy in the dependent market." (Hilmer Report p.241).

Foreclosure to overcome regulation

If the monopolist's price for the facility use is regulated (below the monopoly level), then by vertically integrating and excluding rivals, it may be able to charge the monopoly price in the related market, evading the regulation and increasing its profits. An access regime could prevent this (and do so at low cost, as the owner is already regulated), by extending the regulation to improve the conditions of entry into the related market. If vertical integration by a regulated monopolist leads to more extensive regulation, then the resulting administrative costs and inefficiencies are an added welfare cost.

Foreclosure to facilitate price discrimination

Exclusion of rivals may also facilitate price discrimination in the related market. For example, the monopolist could charge different prices to different groups and increase profits. In some instances, the price discrimination may involve cross-subsidies that are required by regulation or statute. Entry in the related market would undermine these pricing structures, but it is well known that the welfare effects of price discrimination are ambiguous, so it is not clear whether mandating access would produce a gain. Further, such cross-subsidisation by price discrimination could induce 'cream skimming' entry by inefficient producers, who find it profitable to enter the high price markets, even if they are higher cost than the incumbent, in circumstances where the incumbent cannot reduce its prices in response.

Foreclosure to solve the variable proportions problem

Another case where refusal to deal may increase monopoly profits is where the essential facility's output is used in variable proportions with other inputs in a downstream stage. A monopoly price for the upstream output causes downstream users to inefficiently substitute towards other inputs (this problem may be avoided if the monopolist can use non-linear pricing). If the monopoly vertically integrates, and thereby controls the downstream market, it can use the cost minimising input mix, reducing production costs, while nonetheless charging the monopoly price. The monopolist increases its profits, but the price in the downstream stage may rise or fall (so the foreclosure may benefit or harm consumers).

The efficiency effects of vertical foreclosure to solve the variable proportions problem are ambiguous. It reduces production costs in the downstream market, increasing efficiency. However, if the fall in costs is accompanied by an increase in the final good price, consumer surplus will decline. The net effect is consequently ambiguous, but there is more likely to be a gain if the per unit cost savings from avoiding inefficient substitution is large, the sales are large or if the change in output from the increase in price is small. Per unit cost changes have a large effect on welfare because they apply to all units produced.

Box 1 When does denying access to efficient competitors increase prices?

The benefits from mandatory access in this instance are therefore not clear. It would only lower prices in the narrow circumstances where foreclosure raised them. When the facility's output is used in variable proportions in the downstream stage, mandatory access can therefore raise costs and may increase or decrease prices. And even if it decreased prices, it may still decrease efficiency. The efficiency effects of entry in the downstream goods market when there is an upstream essential facility is analysed in more detail, with a diagram, in Appendix 1.

There are, of course, other circumstances where restrictions on sellers of complementary products can raise a monopolist's profits. However, they are rarely relevant for an access regime (they involve tying and do not generally result in a demand for competitors to use the essential facility) although they may raise – and in some important cases, have raised – competition law issues. Again, the exclusionary conduct can sometimes benefit consumers, making an individualised assessment of impacts necessary (Carlton, 2001).

On the other hand, as outlined in the previous section, access may raise costs. For exactly the same reasons, denial of access may increase profits through reducing (or avoiding) costs, and may be efficient.

Price regulation to reduce monopoly pricing: which market to regulate?

Once the facility is declared, the ACCC arbitrates any disagreement between the parties, and so determines the conditions of access, including price. The price, therefore, can be set below the monopoly level, which would reduce prices in related markets and benefit consumers. But this gain could be achieved through directly regulating price in the related market or through relying on the general provisions of competition law (particularly s.46 of the Competition and Consumer Act, which prohibits using market power to damage a competitor or prevent entry), so the costs and benefits of alternative forms of regulation need to be compared.

One cost of relying on an access regime, pointed out by the US Supreme Court in the Trinko case, is that it may facilitate tacit collusion.[6] If the incumbent views the emergence of competition in the related market as largely unavoidable (say because it expects to be declared), it may seek to collude with the entrants, dividing up the monopoly profits. The incumbent essential facility operator has an incentive to pay off downstream users of the facility to accept the monopoly price, without seeking arbitration, in return for a share of the resulting monopoly rent. When the entrants share the essential facility, the opportunities for tacit collusion are likely to be especially great. The putative competitors in the related market will be engaged in the extensive sharing of information and will be well placed to observe each other's conduct. Even if the facility is declared and the ACCC determines access terms, the parties may still be able to collude in the related market.

[6] See Scalia, J in the opinion of the court in Verizon Communications Inc. v. Law Offices Of Curtis V. Trinko, LLP, 2004, p.8.

However, that risk needs to be compared to potentially significant benefits. One such benefit of relying on an access regime is that entry into the related market may lower costs and increase product diversity in that market. This can occur both directly through the entry of lower cost and more diverse firms and indirectly as competition encourages the incumbent to be more cost efficient and produce a wider range of products. Competitive entry can also give the regulator 'benchmarking' information on costs in that market, which may help it in setting the appropriate regulated price.

Further, it may be easier to regulate the terms and conditions in the essential facility market than in the related market: the risk and cost of regulatory error may be lower. That depends on the regulator's information about the different sectors and the size of the cost increases from inefficient access conditions, identified above. These will vary from sector to sector, depending on the scope of, and reasons for, vertical integration.

In short, even when regulation is warranted, it is important to compare the costs and benefits of access regulation with alternative options, including that of regulating downstream prices. That will depend on the nature of the regulated entity and of the precise efficiency gains being sought.

Central to the economic impact of an access regime is the accuracy of access price determination. The gains from access depend on whether the access price is correctly set and whether it is easier to use the access price to achieve efficiency gains than alternative forms of regulation.

Setting the efficient access price

As I have noted above, setting access prices inevitably involves trade-offs. The lower the price, the greater the risk of adverse effects on investment incentives, the greater the use of the facility by entrants (which may increase overall costs), the greater the incentive for the facility owner to sabotage rivals, the more demand will switch to relatively high cost entrants and the greater the chance of inefficient entry. The higher the price, the smaller consumers' gain will be and the greater the encouragement to inefficient by-pass. An incorrect price also distorts input mixes in downstream markets.

There are no simple solutions to these trade-offs. Rather, as regulatory experience and an enormous scholarly literature attest, nearly every aspect of access charging is controversial. Indeed, there are disputes even about the choice and definition of the relevant cost base and the inclusion of opportunity costs. For example, achieving efficient capacity decisions in an access arrangement requires price equal to long run marginal cost (which is inherently difficult to estimate); that would, however, result in inefficient use of capacity. Moreover, basing prices solely on such forward-looking costs could strand sunk investments that were prudently incurred, discouraging investment throughout the regulated and potentially regulated industries. Conversely, setting prices for regulated services on realised costs can avoid undesirable asset stranding but reduces incentives for cost efficiency. And additional difficulties in setting access prices arise when regulated firms operate in both regulated and unregulated markets. In those cases, cost allocations between services become an issue, since the incumbent may be able to subsidise the costs of providing competitive services by hiding some of them in the cost of service used for determining regulated prices.

In short, setting the appropriate price requires much detailed, difficult to obtain information about industry cost and demand conditions, making some degree of regulatory error inevitable. Yet it is crucial to the impact of mandatory access in promoting (or not promoting) efficient competition.

Overcoming transactions costs

Even if there are no third-party effects (such as gains to consumers), so that the interests represented in the bargaining capture all of the relevant gains and losses, other transactions costs may prevent an efficient outcome being achieved in unregulated negotiations between an access provider and potential users of its facilities. The transactions costs most relevant here are likely to be those associated with information asymmetries. These arise when one party to a (potential) bargain has more or better information than another. Information asymmetries will, as a general matter, result in strategic behaviour that limits the efficiency of bilateral bargaining (Wilson 1998). More specifically, the respective parties may not know the costs and benefits the other party would secure from an agreement, and have incentives to misrepresent those costs and benefits in ways that impede, and can entirely prevent, agreement from being reached (Roth 1985), such as holding out for a better deal and allowing bargaining to break down to make threats credible. It is therefore possible for 'money to be left on the table' in commercial negotiations, with the resulting losses taking the form of strikes, costly legal battles, or simply lost opportunities.

An access regime may be a way of allowing these otherwise forgone agreements to be realised. By redefining threat points, providing for the disclosure of information and introducing a third party arbitrator, it may narrow the bargaining range and reduce the transactions costs of reaching agreement. In that sense, it would function like other 'liability rules' in economising on the costs of reaching efficient agreements in areas where bilateral bargaining between the parties is likely to fail to do so.

However, it would be rash to conclude, merely because negotiations between an intending access seeker and a facility owner broke down, that a bargaining inefficiency had occurred. Rather, the failure to reach agreement may simply reflect the fact that access would produce negative, rather than positive, gains from trade: in other words, would inflict efficiency losses. Moreover, imposing a liability rule might, for the reasons discussed above, make those losses all the greater, to the extent, for example, that it caused welfare losses through the setting of inappropriate access prices.

In short, mandatory access has substantial transactions costs of its own, and so it cannot be taken as given that it reduces transactions costs between the parties. Additionally, even when it does so, care is needed to ensure the result is not collusion, rather than the robust competition mandatory access is intended to promote.

Preventing inefficient by-pass

Another potential benefit from mandatory access is to prevent inefficient by-pass (an entrant duplicating natural monopoly facilities).

Whether the absence of mandatory access would result in inefficient duplication of natural monopoly facilities is controversial. As a general matter, entry depends on an entrant's expectation of post-entry prices, not on the prices a monopolist charges before entry occurs. If the monopolist can credibly threaten to reduce its prices should entry occur, then duplication, though obviously not impossible, is less likely. As a result, it is difficult to know whether the prevention of inefficient bypass is empirically of great significance.

Further, while duplication can raise costs, decreasing efficiency, the extra competition it brings will lower prices, increasing efficiency. Even in the simplest terms, therefore, its net welfare effects are consequently ambiguous. Three additional points can be made that further highlight that ambiguity.

First, entry increases the scope for rivalrous product differentiation and competitive pressure to reduce facility operating costs. One way it may do so is by providing 'yardstick competition'. This refers to the impact of product market conditions on agency costs: the costs involved in ensuring that managers have adequate incentives to act efficiently. The underlying notion is that in a more competitive market (and assuming that the firms in the market can be prevented from colluding), owners can more readily compare performance across firms. This allows them to discriminate between say, low profits due to industry-wide demand shocks and low profits due to managerial slack or to rent-sharing between managers and workers. As a result, increased competition allows owners to better structure the incentives managers face, securing a closer alignment between managerial actions and owners' objectives.

These benefits from entry make it less likely that entry will reduce efficiency; but they are external to the entrant, and so mean the entrant has too little incentive to invest in duplication. There is, in other words, a risk of too little, rather than too much, entry that needs to be balanced against the possible costs of inefficient by-pass.

Second, natural monopoly is notoriously difficult to establish, and changes with technological developments. Before being sure duplication was inefficient, the regulator would need to know the incumbent's and access seeker's costs. Moreover, it would need to estimate those costs as they might develop in future, including under the pressure of competition. Again, lack of information may lead to regulatory error, including by deterring otherwise efficient by-pass.

Third, if the facility is both essential and unfeasible to duplicate, then by-pass is impossible and there is no benefit from preventing inefficient by-pass (or loss from deterring efficient by-pass). While access may then still yield the other benefits discussed above – such as the increase in downstream competition – it cannot be credited with the prevention of undesirable investment.

Using mandatory access to prevent inefficient by-pass requires the regulator to possess detailed, difficult to collect information. The recent High Court decision that that access is ruled out if entry is privately profitable prevents using access to achieve this objective. If by-pass is profitable, then access is ruled out whether the by-pass is efficient or not. (See chapter 4, 'Criterion (b): that it would be uneconomical for anyone to develop another facility to provide the service').

Conclusions on benefits

Overall, the potential benefits from mandatory access come mainly from lowering prices to consumers in related markets and reducing the transactions costs of reaching and enforcing efficient agreements. While this can be important in some instances, it will not occur in all instances, even in the presence of natural monopoly, reinforcing the importance of a careful approach to mandatory access.

Weighing benefits and costs: the need to carefully control access

> *"The Committee is conscious of the need to carefully limit the circumstances in which one business is required by law to make its facilities available to another. Failure to provide appropriate protection to the owners of such facilities has the potential to undermine incentives for investment." (Hilmer Report p.248)*

The importance of weighing costs and benefits

In the context of access regulation, the Productivity Commission has noted that:

> *"In assessing the case for any regulation, the costs of intervention are an important consideration. Even if a regulation will have benefits, intervention will only be warranted if those benefits exceed the regulatory costs.*
>
> *Access regulation can entail a significant attenuation of private property rights. This may give rise to a range of costs, particularly if access regulation is poorly specified, meaning that the implications for property rights are ill-defined. Uncertainty about the property right implications of changes to access regulation may also give rise to similar costs." (Productivity Commission 2001, p.59)*

Mandatory access overrides the property rights of the access provider and imposes transactions it would not have voluntarily entered into, potentially raising its costs. Indeed, one reason why the facility owner may refuse to deal with a competitor is that allowing access may increase its costs more than any additional revenue it would receive from selling the access services. For example, if the entrant has higher costs than the monopolist, or if access increased the monopolist's costs substantially because it disrupts vertically integrated production processes, the access seeker's revenues might not be sufficient for it to compensate the access provider. In that event, if access prices reflect those costs imposed on the access provider, the access seeker would choose not to enter; but if access prices do not fully do so – say because they are based on average costs, allocating some of the cost increase to the access provider itself – then mandated access could ultimately increase prices to consumers.

Whether to grant access is a choice between the expected outcomes under no access and under the achievable regulated alternative, accounting for the actual benefits likely to result – an access regime does not necessarily result in competition – and the actual costs, which include co-ordination losses,

extra transactions costs and disruption of vertical processes. Those costs, along with others that include compliance and administration costs, disincentives for investment, constraints on efficient pricing and service delivery, incentives for strategic behaviour and risks of regulatory error, have been discussed in the previous section. They need to be weighed against potential benefits.

Potential benefits include consumer gains from increased competition. As noted above, one reason a facility owner may deny access is to boost profits in related markets. Other potential benefits include overcoming transactions cost impediments to efficient agreements and preventing inefficient by-pass. These benefits were examined in the previous section, where it was concluded that the latter two benefits were likely to be relatively small, and hence could readily be outweighed by the costs of declaration. In contrast, the benefits from increased competitive pressures are potentially large, but will occur only in narrow circumstances.

As the balance of costs and benefits varies, so does the case for mandatory access. For example, the costs of interference with vertical integration will differ across industries and firms: in some cases, it is easy to define the service in ways that avoid negative cost externalities; in others, economies of scope and of ongoing coordination within the firm in the face of demand and supply shifts are important and injecting a third party undermines their achievement.

What is important is that the access regime can effectively distinguish between these differing instances. Of central importance here is the distinction between the conventional public utilities and other areas of potential application.

Many public utilities have dedicated access regimes, and it is clear that the Hilmer Report primarily intended the access regime *'to deal effectively with essential facility issues in the context of introducing competition to markets traditionally supplied by public monopolies'* (Hilmer Report p.247-8). At the time of the Hilmer Report, most of the bottleneck facilities were state owned, often by vertically integrated firms that dominated the downstream markets: as the Report noted, '*almost all cases of essential facilities identified for the Committee were in the public sector because of the history of government ownership of infrastructure'* (Hilmer Report p.239). Access rules were seen as a way to introduce competition into the end markets, that is, of unbundling the natural monopoly elements of those industries from the potentially competitive segments and allowing third parties effective access to the latter.

It made sense then, and makes sense now, to apply the access regimes to state owned, or recently privatised, and heavily regulated public utilities. That is because the balance of the costs and benefits from mandatory access is likely to be more favourable than in the rest of the economy, for reasons discussed below.

Why the costs of access are less and the benefits greater in public utilities

Many of the state-owned firms the Hilmer Report focussed on were vertically integrated through legacy arrangements, rather than through market transactions. Moreover, those firms were protected from competition and capital market disciplines, and hence lacked incentives to be cost efficient and

innovative. As a result, one cannot assume that the vertically integrated structure was efficient, as unlike private firms, these public utilities did not integrate in response to rivalrous pressures to reduce costs. The costs created by mandating access were therefore likely to be lower than those access could impose on firms that had integrated for efficiency reasons. Further, increasing competition in related markets would strengthen incentives for such incumbent monopolies to minimise costs (not least by removing the scope for obtaining excess revenues in those markets with which to fund cost padding), making it even more likely that access would lead to efficiency gains.

The lack of a profit motive under state ownership (arising from relatively weak oversight by owners) also means that in the absence of an effective access regime, vertical integration and foreclosure of rivals could be pursued to benefit incumbent management, regardless of the interests of shareholders. That is, it could be in shareholders' interests to allow entry – because any losses from increased competition in the downstream market would be outweighed by gains from access revenues and enhanced internal efficiency – but principal-agent problems might still lead the firm's managers into a refusal to deal. Particularly in enterprises with a history of public ownership, managers are seldom geared towards minimising costs and maximising profits; rather, they may instead pursue objectives such as maximising revenue and employment, and gaining political influence, and be more interested in retaining market share than in increasing shareholder value.

Being risk-averse, the managers of such incumbent entities may weigh the certain loss of a 'quiet life' far more heavily than the uncertain gains which they could secure from operating in a competitive environment. At the same time, the natural reluctance of managers to assist competitors may be aggravated by the perception that the entrants are seeking to 'free ride' on the incumbent's historic investments. As a result, the firm's managers may stall or obstruct access by the entrant, even when such access would have been granted by the facility's owners. Access could then be efficient and even increase the direct value of the enterprise — reducing costs rather than increasing them. Entry would also give owners and regulators 'yardstick' competition, which could help control costs and provide better incentives to boards and managers.

All of these factors make it sensible to apply access regimes to utilities; but there are other factors that go in that direction as well.

To begin with, the conventional public utilities are regulated, and subject to access regimes, all over the world. As a result, local regulators can and do draw on international experience and precedent, which limits the risk of regulatory error and hence reduces the costs imposed by intervention. Further, overseas practice often means equipment makers take account of regulatory boundaries in the way they design equipment, making third party access easier to implement. In telecommunications, for example, all current fixed network equipment and systems are designed with third party access in mind, reducing the costs incumbent service providers bear in operating open platforms. Equally, suppliers of the equipment and systems used in electricity networks design them to operate in both vertically integrated and vertically separated market structures, reducing the costs of imposing access arrangements.

Additionally, and importantly, the utilities are typically regulated not directly through Part IIIA but through sector specific regimes, which provide a great deal of detail and structure. That means there is extensive investment in upfront rule making, which in turn reduces the costs of dealing with particular cases and provides at least some certainty to investors. Here too the ability to rely on international precedent is crucial, helping also to guide the expectations of investors. In other words, these are activities in which economies of scale or scope in utility regulation are able to be exploited, both by spreading the costs of regulation over a much larger base nationally (the same utilities are regulated in all states) and by piggy-backing on international experience.

Finally, if the facility owner is already subject to some form of price regulation, mandating access may not entail much additional ongoing supervision; indeed, access can enhance the efficiency of that regulation if it prevents the monopolist from evading it by charging a monopoly price (or degrading product quality) in a related market. And the fact of prior regulation means expertise is likely to be more readily available, reducing the costs of intervention.

The case for a restrictive approach to mandating access

For almost symmetrical reasons to those relating to public utilities, the net costs of mandating access in traditionally private areas of economic activity are likely to be high and regulatory errors are more likely.

Thus, as stressed above, a detailed knowledge of the industry is needed to design efficient access regulation. Access requests involve complex issues, frequently with highly ambiguous welfare effects. Implementing a scheme that has benefits greater than costs, and thus increases efficiency, requires the regulator to acquire accurate information on those costs and benefits, which is invariably difficult but will be especially so in areas that have not previously been regulated and that are rarely, if ever, regulated internationally. For example, to properly decide on and implement access, the regulator must estimate the cost to the asset owner of allowing another user, the value of exclusive use (which depends on difficult to measure option values and economies of scope), the ongoing transactions costs of access, and how the access seeker's costs compare with the incumbent's. The fact that unlike the conventional public utilities, physical networks and operating systems in these industries are rarely designed to accommodate third party use will make even estimating those costs all the harder, as complex engineering calculations are likely to be required.

The more difficult it is for central authorities to obtain information about the cost and demand conditions facing regulated entities, the greater the chances of error and the lower must be the benefits from a liability rule. After all, a declaration decision is never costless — at the very least it imposes administrative costs on an access provider, requires public resources to be devoted to the monitoring and enforcement of the regime and has a potentially chilling effect on investment. In addition, it can impose indirect costs that may or may not be substantial. Moreover, some of the costs (such as disincentives for investment) are borne from the mere risk of being subject to declaration. Given those costs and risks, and their likely quantum once one moves away from the conventional public utilities, it will be an open question whether imposing a liability rule can improve on the market outcome – that is, the outcome associated with leaving the property rule undisturbed – in any particular instance.

This is a question that inherently goes to the balance between Type I and Type II errors. A Type 1 error is a false positive (i.e. granting access when it should not have been granted), while a Type 2 error is a false negative (i.e. incorrectly denying access).

The criteria for declaration should be shaped in view of the expected costs of those errors. The greater the relative cost of a Type I error, the stricter the criteria should be – it is more important to make access more difficult and prevent the regulator granting access when it should not (a false positive) than to prevent wrongly denying access (a false negative). The relevance of weighing up Type I and Type II errors is readily illustrated by reference to the issue of setting the standard of proof in different kinds of proceedings.

Thus, in the usual civil trial there is no reason to suppose that a Type I error, a false positive such as finding an innocent defendant liable, on average imposes higher costs than would a Type II error, (i.e. a false negative such as denying a meritorious plaintiff). The typical result of losing a civil suit is a cash payment from the defendant to the plaintiff. A damage payment is a transfer, imposing a cost on the defendant and a benefit for the plaintiff. Given this symmetry in error costs, it is efficient that in civil cases, the standard of proof is 'on the balance of probabilities': the verdict goes to the plaintiff if the probability his claim is meritorious exceeds the probability it is not.

In contrast, in criminal cases, the typical result of being convicted of a crime is a prison sentence. Type I errors (false positives, convicting an innocent person) are more costly than Type II errors (false negatives, acquitting a guilty person) because the cost of imprisonment is high. Imprisonment imposes a cost on the defendant and a further cost on society (the cost of running the prison). Punishment is a net cost rather than a transfer, a cost that is avoided if a guilty person is acquitted. Although wrongful acquittals reduce deterrence, convicting innocent people is unlikely to have a deterrent effect. It therefore takes more wrongful acquittals to impose the same costs as a wrongful conviction.

Raising the standard of proof reduces the chance of convicting an innocent defendant, but increases the chances of acquitting a guilty one. However, as I have just explained, costs of wrongful convictions are greater than those of wrongful acquittal. There are consequently sound economic reasons for increasing the standard of proof in criminal cases to the making out of the charge beyond a reasonable doubt.

As we have seen, the expected costs of declaration for public utilities are relatively low, the expected benefits are relatively high and regulatory mistakes are less likely. In contrast, the costs of declaration may well be relatively high, the benefits relatively low and mistakes more likely and costly for private profit-making firms that compete not merely in markets for outputs but also for capital. The scope for access to impose such high costs means the costs of false positives are likely to be high, with rent-seeking behaviour by entrants exacerbating those costs. In other words, outside the conventional public utilities, the costs of Type I errors could be substantial.

By contrast, the costs of Type II errors outside the conventional public utilities could be relatively low. A false negative saves the direct costs of access, while the benefits from access occur in narrow circumstances. In many cases, any efficient agreement would have been reached in the absence of intervention, and it is unclear how often mandating access will be able to secure any outcomes that

should have been reached but weren't. Moreover, the scope to seek mandated access in these instances may undermine the parties' incentives to negotiate to a commercial agreement, making it more likely regulatory costs will be incurred needlessly.

The relatively higher costs in these instances of Type I errors (false positives, or declaring when one should not) compared to those of Type II errors (false negatives, not declaring when one should) implies that the standard for declaration should be higher – that the expected net benefits should be large – to make up for the high cost of incorrect declarations.

All this should inform the design of the hurdles built into the regime. Were the regime confined to the conventional public utilities, the risks of Type I errors could have been given relatively low weight. However, for a broad access regime that applies across the economy, efficiency considerations suggest the conditions for access should put greater weight on avoiding false positives than false negatives. In particular, a regulator should take care when imposing access regimes on private, vertically integrated firms in circumstances where vertical integration has been shaped by marketplace pressures. In those cases, the large potential costs, and relatively small potential benefits, of an access regime mean that its role should be carefully limited: the large costs from over-riding property rights should only be borne if there is a clear and compelling prospect of large benefits.

Such a positive net benefit is only a *necessary* condition to justify mandatory access. The net benefit needs to be assessed against the range of other feasible regulatory, structural and institutional options that might also lead to increased competition. For instance, reliance on the *ex post* controls associated with competition policy in its anti-trust role may be preferable where the uncertainty involved in *ex ante* intervention is large.

In short, what is needed are rules that limit application of the regime to where it is likely to do the most good, where expected benefits are high and expected costs low, while ensuring that areas where the chances of regulatory error are high face only a low risk, if any, of declaration. Those rules should be clear about the objectives of regulation, the behaviour at which intervention should be targeted and the principles governing the type of intervention. As the Productivity Commission has noted:

> *"Given uncertainties and information difficulties, there are limits to what regulators can achieve. Rather than aiming for an ideal, but unattainable outcome, the public policy goal should be a set of regulatory arrangements that will improve efficiency through time and that will reduce some of the bigger risks of making regulatory errors. A framework is needed in which regulators are encouraged to intervene only when significant improvements in efficiency are in prospect and not to be overly ambitious in finetuning the prices they regulate. ….*
>
> *Given their potential costs and distortions, regulatory interventions such as access regimes and other price controls should be measures of last resort, focused on those activities with demonstrable monopoly power. These now largely involve bottleneck infrastructure services with natural monopoly characteristics. The general provisions of the Trade Practices Act remain as a safeguard for abuses of market power in other circumstances." (Productivity Commission 2002, 14, 15)*

The issue then is how those rules should be framed. Rules provide greater up-front certainty and specificity in the decision situation, and economise on the costs of individualised assessment of particular cases. However, these advantages come at the cost of both likely greater required outlays in the up-front formulation of the rules, and of potential under- or over-inclusiveness in particular instances. The more permissive the criteria for declaration, the greater the costs from *ex ante* uncertainty and *ex post* enforcement. These costs are higher if, as with an access regime, case-by-case assessment of consequences will involve inherently contentious judgements that ultimately may need to be made by decision-makers with limited information and expertise, inducing (essentially unproductive) expenditure in seeking to establish a case one way or another, and creating the risk of potentially high error costs and unnecessary uncertainty.

The disadvantage of any general rule is that it can be expected to give the wrong answer in some specific cases, which means that a general rule will inevitably do a worse job of guaranteeing efficient outcomes than would an omniscient decision-maker determining each case on its merits. But the mere fact that any rule will be imperfect does not eliminate the usefulness of devising rules that can screen out unmeritorious potential applications of the regime. The issue is whether the errors in such a screen outweigh the benefits of earlier rejection. That is unlikely to be the case.

Rather, as firms have to make investment decisions on the basis of the access regime in force, and there is a risk they will be required to share the efficiency gains from that investment, clear rules can help minimise the adverse effects on incentives for efficient investment, rent seeking behaviour and regulatory gaming. While such clear and stringent rules may – indeed, almost certainly will – involve some errors, it seems implausible that the costs of those errors could outweigh these benefits.

The Hilmer Report itself came to the same conclusion. It carefully examined the essential facilities doctrine, but correctly noted that there was considerable uncertainty surrounding the application of the doctrine as it operated in the United States (*Hilmer Report* p. 244). It expressed concern about that uncertainty and about the fact that the US doctrine as it was being developed at the time seemed too loose, stating that:

> *"The limits of the United States doctrine are not yet clear, and it has been observed that 'the doctrine has not developed with clarity, coherence or consistency, let alone with strong economic foundations.' Decisions which have relied on the doctrine have found essential facilities in situations ranging from local telephone networks to football and basketball stadiums." (Hilmer Report p. 244)*

Rather, it proposed a national access regime precisely so as to properly codify the principles and define the appropriate limits for third party access, the presumption being that such statutory codification was preferable to enforcing the doctrine purely on a judicial case law basis and would eliminate the looseness and uncertainty inherent in the US approach. In recommending that course, the Hilmer Report stressed the potential costs of mandating access. It therefore appended a number of crucial qualifications to its proposal for an access regime by referring to:

- The need to '*carefully limit the circumstances in which one business is required by law to make its facilities available to another*', because the '*failure to provide appropriate protection to the owners of such facilities has the potential to undermine incentives for investment'* (p. 248);
- Unless the owner of a facility consents to access being declared, the Minister could only make such a declaration where*: 'Access to the facility in question is essential to permit effective competition in a downstream or upstream activity; Clearly, access to the facility should be essential, rather than merely convenient'* (Hilmer Report p.251); and
- The facilities and industries most likely to meet these requirements, which would be those where there was *'traditional involvement of government in these industries, either as owner or regulator'* (*Hilmer Report* p. 251).

In short, it could be said that Hilmer sought to limit, narrowly, the scope of any national access regime, while recognising that such a regime was preferable to merely relying on case law driven by inherently vague doctrines such as that of 'essential facilities'. While the final form of Part IIIA differed in important respects from the Hilmer recommendations, it retained the emphasis on imposing substantive hurdles on the granting of access – the substantive character of the gateway being most obvious in the need to meet all of the hurdles before a facility can be declared. However, as will be seen in the next section, the implementation of those hurdles in practice has not always been mindful of the caution the Hilmer Report recommended.

4. The regime in practice

Section 44G(2) of the *Competition and Consumer Act 2010* (Cwlth) states that:

"The [National Competition] Council cannot recommend that a service be declared unless it is satisfied of all of the following matters:

(a) that access (or increased access) to the service would promote a material increase in competition in at least one market (whether or not in Australia), other than the market for the service;

(b) that it would be uneconomical for anyone to develop another facility to provide the service;

(c) that the facility is of national significance, having regard to:

(i) the size of the facility; or

(ii) the importance of the facility to constitutional trade or commerce; or

(iii) the importance of the facility to the national economy;

(e) that access to the service is not already [subject to an effective access regime];

(f) that access (or increased access) to the service would not be contrary to the public interest."

These are the relevant hurdles for access to be declared. An additional hurdle, set out in s44B of the Act, involves the exclusion from declaration of access to a 'production process'. Until the recent High Court (2012) decision, the trend had been for the stringency of these hurdles to be progressively weakened, and their clarity on occasion reduced, by their interpretation in the National Competition Commission (NCC), the Australian Competition Tribunal (ACT) and the courts. The result has been to place greater weight on the desirability of allowing access to occur than on the importance — stressed by the Hilmer Report — of strictly confining any mandatory rights of third party access. The High Court decision in the 2012 Pilbara railways case has reversed this somewhat, restricting declaration to cases where the asset is not privately profitable to duplicate (and so essential for entry) and stressing that it is not generally the role of the Australian Competition Tribunal to overturn a Ministerial determination on whether access would be contrary to the public interest.

This chapter examines the weakening of the statutory hurdles by examining judicial interpretation of the production process exemption and of Criterion (a). It then examines the interpretation of Criterion (b) over time, and assesses the effects of the High Court's Pilbara decision. Finally, it discusses the effects of the High Court's ruling on the application of Criterion (f).

s.44B: The production process exemption

Part IIIA s.44B of the *Competition and Consumer Act 2010* provides that a service includes '*the use of an infrastructure facility such as a road or railway line*' but does not include '*the use of a production process; except to the extent that it is an integral but subsidiary part of the service'*.

The exemption could be useful in precluding access to highly integrated services, where the costs of adding a third party are likely to be large. Hilmer had recommended that declaration should apply to facilities and industries in which government had traditionally been involved, but not to '*products, production processes or most other commercial facilities*'.[7]

In *BHP Billiton Iron Ore Pty Ltd v National Competition Council* (2008) the High Court held that the Pilbara below rail services sought by Fortescue from BHP Billiton Iron Ore (BHPBIO) did not involve the 'use of a production process' and were therefore not excluded from third party access regulation. It rejected BHP Billiton's submission that the railway lines were an integral and non-subsidiary part of its production processes for saleable iron ore.

The Court accepted that 'production process' meant 'the creation or manufacture by a series of operations of some marketable commodity' (para 37), but held that while the rail services are an integral step in the iron ore production process of BHP Billiton, Fortescue was seeking use of the track and 'does not seek access with use of the rolling stock of BHPBIO or the addition of its stock to trains operated by BHPBIO … What Fortescue seeks is the use of a facility that BHPBIO uses for the purposes of its production process' (paras 40, 41), not the production process itself.

The Court stated that the protection of BHP Billiton's business interests would be taken into account in any future access arbitration and 'that would be a question for another, and a later, day.' (para.43).

The Court's decision substantially confines the scope of any possible 'production process' exemption: by reducing the exemption to an interpretation that is entirely restricted to the physical transformation of inputs into outputs; and by apparently discounting the adverse effects of declaration on private sector investment in infrastructure. It therefore reduces the protection afforded under the Act to the owners and operators of infrastructure assets and increases the potential for, and likely costs of, regulatory error.

Criterion (a): That access (or increased access) to the service would promote competition in at least one market

Section 44G(2)(b) provides that the NCC is not to recommend declaration unless access to the service would promote competition in at least one other market other than the market for the service itself. This reflects the fact that the National Access Regime is intended to promote competition in dependent

[7] Report by the Independent Committee of Inquiry, p. 251.

(upstream or downstream) markets, not in the market in which the monopoly exists (and into which entry presumably cannot or should not occur).

The phrase 'promotion of competition' has been consistently interpreted by the Tribunal to mean, as put in its Sydney Airports decision, a mere 'unlocking the door' to the competitive process.[8] In that case, the Tribunal declared the services provided by freight infrastructure at the Sydney International Airport so as to promote competition in the market for ramp handling services. The Tribunal found that:

> *"The notion of 'promoting' competition involves the idea of creating the conditions or environment for improving competition from what it would be otherwise. That is to say, the opportunities and environment for competition given declaration, will be better than they would be without declaration*."[9]

Alternatively, the test was re-stated in the second Sydney Airports decision (involving an application by Virgin Blue), as being that competition will be promoted when there is:

> *"... a significant, finite probability that an enhanced environment for competition and greater opportunities for competitive behaviour — in a non trivial sense — would arise in the dependent market [post-declaration]."*[10]

The Tribunal in the 2010 FMG decision appeared initially to endorse a similar approach in defining the promotion of competition:

> *A particular act will have the tendency to promote a material increase in competition in a socially useful way if sellers are given greater freedom to engage in rivalrous behaviour, or if the act will cause an increase in the number of rivals coupled with a move to more independent behaviour. Often the inquiry will come down to this: Will the act (eg an alteration to an aspect of market structure or a change in a firm's conduct) increase the constraints on the market power of sellers or, more directly, will it increase their rivalry in a way that will produce greater efficiency? If the answer is in the affirmative, the act will promote an increase in competition.* [11]

The effect of these decisions is to make the promotion of competition criteria a far weaker test than applies in the United States, where the facility must be truly essential to competition — in the sense that, without mandated access, competition in a related (upstream or downstream) market would be eliminated.[12] Instead, to meet this limb of the Part IIIA test, the facility need not be essential: it is sufficient if the facility will make improved competition in the downstream market more likely.

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8 *Re Sydney International Airport* [2000] ACompT 1 (1 March 2000), [20].

9 *Re Sydney International Airport*[2000] , [106].

10 *Re Virgin Blue Airlines Pty Limited* [2005] ACompT 5 (12 December 2005), [162].

11 In the matter of Fortescue Metals Group Limited [2010] ACompT 2, [1061].

12 Additionally, before access could be mandated under the essential facilities doctrine, it would usually need to be established that the prevention of competition in that market was a purpose of the initial refusal of access. In other words, there would have to be a direct link, which is entirely absent in the application of criterion (a) between the competition the refusal to deal sought to stymie and the market mandated access would 'unlock'.

The effectiveness of criterion (a) as a hurdle was further affected by the decisions of the Tribunal and the Federal Court in the Virgin Blue case.[13] Virgin Blue, although already being provided with access to facilities at Sydney Airport, applied for declaration of landing and take-off facilities for domestic aircraft. The inquiry was whether declaration would, in some sense, 'enhance' or 'improve' competition beyond that which occurred when access was negotiated commercially. Virgin Blue had submitted that the phrase 'access to the service … would promote' implies that the relevant comparison is between a market where there is no legal right to access a facility and a market affected by a Part IIIA declaration.

The Tribunal did not agree, but concluded that the question whether increased access would promote competition in the dependent market should be understood by reference to 'the current conditions of access projected into the future'.[14] In other words, while Virgin Blue argued that access should be compared with a world with no access at all (as opposed to the negotiated access that Virgin Blue enjoyed at the time), the Tribunal held that it should be compared with the actual terms of access as they then existed.

On appeal, the Federal Court rejected the Tribunal's finding, substantially broadening the operation of Criterion (a). The Court held that there was no basis in law for comparing declaration with 'what is factually the current position in any given circumstances'.[15] In other words, it was unnecessary to consider the implications of access already being provided on commercial terms.

Instead, the Court effectively endorsed Virgin Blue's position that the test ought to be whether access — of any sort — would improve competition over a situation where access did not exist, reflecting the Court's view that '*the regime is not only engaged when some denial, or restriction of supply of the service can be demonstrated'*, but should instead act '*as a public instrument for the more efficient working of essential facilities in the economy*'.[16]

Allowing the test to be met where access is already provided on commercial terms encourages access seekers to use the threat of declaration merely so as to secure a lower commercial price.

On the other hand, the later decision of the Tribunal in its 2010 FMG decision does place some constraints on the application of Criterion (a), though it is uncertain whether those are consistent with the findings in the Virgin Blue proceedings. In particular, the Tribunal held that Criterion (a) would have no application if the market in question was already effectively competitive, especially in light of recent legislation passed:

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13 *Sydney Airport Corporation Limited v Australian Competition Tribunal* [2006] FCAFC 146 (18 October 2006).

14 *Sydney Airport Corporation Limited v Australian Competition Tribunal* [2006], [149].

15 *Sydney Airport Corporation Limited v Australian Competition Tribunal* [2006], [84]

16 *Sydney Airport Corporation Limited v Australian Competition Tribunal* [2006], [78].

> *"The position we take is that* ***if a dependent market is already effectively competitive, intervention is not called for. That is, we read criterion (a) as having no application to a market which is effectively competitive."*** *[Emphasis added]*[17]

If the related market is competitive, then the facility owner cannot increase its market power through refusing to deal with one firm — so the refusal is likely to be efficient (see section 2 above). The facility owner could, of course, be exercising its monopoly power to drive up the price of the facility services, and so collect monopoly rents from the related market, but granting access when there is already competition in the related market would not remedy that.

Despite that finding, the fact remains that criterion (a) is now a very weak reed. Other than the case where the dependent market is already competitive, it seems reasonably likely that this hurdle could be cleared by an access application. This is all the more the case as it is open to the access seeker to identify any market – regardless of whether it is or is not of national significance – as the market in which competition would be promoted.

Moreover, given the nature of Part IIIA, the access seeker does not need to establish any connection between the market in which it claims competition will be promoted and the reason or reasons for which the potential access provider refused access. As a result, this criterion all too readily degenerates into an opportunity for the access seeker to advance a 'laundry list' of markets, some purely incidental or of secondary importance, which have some link to the service for which declaration is being sought.

In short, whatever function criterion (a) was intended to play as a screen that could ensure the facility at issue was a genuine bottleneck has been compromised, and both the precise meaning and application of this criterion weakened.

Criterion (b): that it would be uneconomical for anyone to develop another facility to provide the service

As with the promotion of competition test, this limb of the declaration criteria has been the subject of controversy. Particularly contentious are two elements of the test: the definition of the facility at issue; and the criterion to be applied in assessing whether duplication would be economic.

In the Duke Eastern Gas Pipeline case, a pipeline case under the Gas Code, the Australian Competition Tribunal ruled on the service definition that should be applied in deciding whether it was 'uneconomic to develop another facility' to provide a similar service to that provided by the Eastern Gas Pipeline (EGP). The Tribunal took the view that the haulage service should be defined as a point-to-point haulage service, 'irrespective of the substitution possibilities that might exist at either end of the pipeline'.[18] This

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17 In the matter of Fortescue Metals Group Limited [2010] ACompT 2, [1068]

18 *Duke*, at paragraph 69.

precedent to in effect ignore substitution possibilities appears to be confirmed in Services Sydney[19] where the Tribunal also held that:

> *An assessment of criterion (b), consistent with the words of the statute, requires it to focus on the duplication of the facility or facilities used to provide the service(s) which are the subject of the application for declaration; rather than on the wider question of the duplication of facilities to service the market, which would include consideration of substitutes.*

By thus eliminating consideration of substitution possibilities, the Duke decision removed from the statutory criterion the notion of a 'bottleneck'. In effect, the essence of a 'bottleneck' – understood in the sense of the 'essential facilities' doctrine and picked up in the Hilmer Report – is not that the facility itself cannot be viably replicated; rather, it is that there are no viable competitive alternatives to the facility. As in any assessment of market definition and market power, an economically meaningful test for whether (say) a pipeline is a bottleneck must encompass consideration of these indirect alternatives, rather than simply asking whether exact replication of the pipeline is viable (or economically efficient). In contrast, the Duke test would only take account of a facility if it provided exactly the service the applicant sought, rather than a service that, in economic terms, was an effective substitute for (and hence competitive constraint on) that service.

The Duke decision means that the test now goes toward almost exact replication of the facility, rather than considering the broader context of substitution from competing facilities. It consequently makes it far easier for the test set out in the criterion to be met. After all, it is significantly less likely that it would make economic or commercial sense to exactly replicate a particular piece of infrastructure than to construct an effective but not exact substitute for that infrastructure. Additionally and importantly, it opens more room for gaming of the regime by access seekers, as it is the access seeker that specifies the service for which access is being sought.

Turning now to the test to be applied in considering whether the facility can be duplicated, the Tribunal in the 2011 FMG decision summarised three competing views on the meaning of 'uneconomical for anyone to develop' as follows:[20]

> *The competing views are that 'uneconomical' means that: (1) it would not be profitable for anyone to develop the facility (the 'privately profitable' test); (2) the total net costs (including social costs) exceed the total net benefits (including social benefits) of developing another facility (the 'net social benefit' test); or (3) a single facility can meet market demand at less total cost than two or more facilities (a 'natural monopoly test').*

Test (3) asks whether the facility is a natural monopoly, and so adding another facility raises costs, which increases costs in related markets: this is the case of inefficient by-pass. Test (2) examines the net social benefit from adding a facility, which could be positive even if the facility is a natural monopoly. That is

[19] Application by Services Sydney Pty Limited [2005] ACompT 7, [102]

[20] In the matter of Fortescue Metals Group Limited [2010] ACompT 2, [815].

because there is a benefit from increased competition, which would bid down the price in the related market, increasing consumer surplus. The net effect of entry on social welfare is ambiguous (it depends on the relative sizes of the loss from increased costs and the gain from lower prices). A facility could be a natural monopoly, so that entry would raise costs, yet if greater competition bid down the output price sufficiently, net social benefits could rise. That is, it could be uneconomical to duplicate on the natural monopoly test, but duplication could still be socially beneficial – and as noted above, those benefits could be all the greater if duplication (and the facilities-based competition it brings), rather than merely leading to a movement along a given cost curve increases the incentives for innovation and thereby shifts the cost curve down.

In the Sydney Airports (2000) decision, where freight handling facilities were declared, the Tribunal determined that the test that ought to be applied in determining whether a facility is 'uneconomic' should be viewed as a social cost-benefit test (test 2). However, the 2011 FMG decision reversed that finding, and decided in favour of a natural monopoly test. That decision rejected the net social benefit test on the grounds that:

> *Many social costs and benefits are necessarily difficult, and sometimes impossible, to quantify. Accordingly, it may be difficult to conclude, at least in quantifiable terms, that there is or is not a 'net social benefit'. A requirement to be positively satisfied of such a matter — which would be a requirement if criterion (b) were a net social benefit test — would create a threshold which may, in practical terms alone, be difficult to satisfy.*

The Tribunal reasoned that net social benefits could be taken into account under Criterion (f), which considers the public interest (but reverses the onus of proof — it requires showing that declaring 'the service would not be contrary to the public interest', not that it would promote the public interest). To that extent, the Tribunal apparently felt it appropriate to somewhat lower the height of this hurdle and hence allow more cases proceed to consideration under an overall weighing of public interest.

The Tribunal was of course correct in arguing that social benefits are difficult to evaluate – buts its approach does not avoid that difficulty: it merely postpones it from being dealt with under this criterion to the consideration of public interest. Moreover, while it is correct that net social benefits are difficult to evaluate, so too is natural monopoly. Indeed, the Tribunal's decision, which devotes well over 100 pages to consideration of complex evidence relating to natural monopoly, shows this all too clearly. As a result, it is hardly obvious that the Tribunal's approach reduces the risk of regulatory error. Additionally and importantly, both the interpretations the Tribunal has previously adopted of the criterion divorce it from its original purpose, which was to ensure that access was available where an efficient access seeker *required* it to compete — i.e. where access was indeed essential. Rather, all that needed to be shown, under the Tribunal's approaches, was that in one sense or another, society was better off if duplication could be avoided.

This is in contrast with, for example, the essential facilities doctrine in the United States where — at least in principle — access will not be mandated unless the facility is vital to competition, not merely

desirable in an abstract sense,[21] the approach supported by Hilmer. In the US the facility must be *truly essential* to competition. It is not sufficient that the facility merely improves competition, or makes it easy for low-cost entry in a downstream market. The facility must not be able to be duplicated, and there must be no actual or possible sources of alternative supply.

Both the social efficiency and natural monopoly tests were rejected, on appeal, by the Full Federal Court and the High Court. Rather, these courts supported a 'private profitability' test under which a service cannot be declared if it would be profitable for *any person* to establish a second facility to provide the service. In other words, a service must not be declared if it can be shown that an existing or future market participant (including the incumbent infrastructure owner) could reasonably expect to obtain a sufficient return on capital if it duplicated the facility to provide the service.

Unlike the natural monopoly test, this private profitability test could deny access when there is natural monopoly but entry is nonetheless privately profitable (the case of inefficient by-pass). However, it is unclear how common this could be. After all, as noted above, the profitability of entry depends on the entrant's conjecture of post-entry prices. If the facility is indeed a natural monopoly, then it seems likely that the incumbent can deter entry through the threat of a price war. In that event, and assuming the threat is credible, entry will not be profitable and the test for declaration will be satisfied.

Further, if entry is nonetheless privately profitable, the result will be to narrow the bargaining range in access negotiations between the entrant and the incumbent. In effect, with the entrant having a credible threat to enter, the incumbent knows it will face competition if bargaining breaks down. The parties are consequently more likely reach an efficient access agreement, if access is indeed efficient, thereby avoiding duplication.

Moreover, even if entry occurs, the effect on welfare is ambiguous – as the increased competition will lower prices, increasing consumer surplus and offsetting the costs from duplication, and may increase the pressures for innovation (and hence long run cost reduction).

The expected gain from declaration when entry is privately profitable is therefore likely to be small and so will be the social loss (in expected value terms) of relying on the private profitability test.

At the same time, the private profitability test may give a better outcome than the natural monopoly test when the facility at issue is not in fact a natural monopoly. In these instances, duplication is likely to be privately profitable, and relying on private profitability can screen out unmeritorious cases. Moreover, it should be easier in those cases to demonstrate the potential profitability of duplication than to test for natural monopoly. To that extent, the test will act as a lower cost screen or filter against regulatory over-reach than would the natural monopoly test, which is more likely to wrongly declare the asset as a natural monopoly.

[21] *Alaska Airlines Inc v United Airlines Inc* 948 F2d 536 (1991)

Further, as the High Court points out the consequence of a natural monopoly test is that, if the facility is correctly found not to be a natural monopoly, it "cannot be declared even if there is no (profit) incentive to duplicate it. In that case, the sole supplier would be left in control of the field with the attendant risks of abuse of market power" (High Court, 2012 para 103).

Overall, it will always be difficult to implement a 'bottleneck' test, and no test can be perfect. That said, it is clear that the Tribunal's interpretations of the relevant tests have involved prolonged, information intensive and potentially error-prone inquiries in contexts where a 'private profitability' assessment would have been easier to assess (especially in the FMG proceedings) and less likely to lead to error. Moreover, the 'private profitability' approach accords with the common sense notion of a 'bottleneck', as used, for example, in the Hilmer Report; and it is consistent with the test applied under the 'essential facilities' doctrine, and in the assessment of entry in competition proceedings more generally, both in the US and the EU. There is therefore considerable precedent in its application, reducing the risk of error and increasing its effectiveness as a filter against unmeritorious applications. Given the high costs of regulatory error and over-reach, value should be placed on those benefits the test can bring.

Criterion (f): that access (or increased access) to the service would not be contrary to the public interest.

The High Court (2012) decided that the Tribunal's task was to review the Minister's decisions by reconsidering those decisions on the material before the Minister supplemented, if necessary, by any information, assistance or report given to the Tribunal by the NCC in response to a request. It was not to rehear the matter and allow the parties to present new evidence.

Further, the Tribunal should be loath to overturn the Minster's decision on whether access is in the public interest: *'if the Minister has not found that access would not be in the public interest, the Tribunal should ordinarily be slow to find to the contrary'*.

The Hilmer Report also stressed that the granting of third party access should be a Ministerial decision, to which political responsibility would attach, highlighting the seriousness with which the Report viewed the over-riding of property rights through the mandatory granting of third party access. But the Hilmer Report recommended the decision be made within the confines of tightly defined criteria, notably with respect to promoting competition and to the scope for duplication; yet the watering down of the other criteria has reduced the constraints on the Minister's decision, making the public interest test more important as a filter against unmeritorious applications than it was in the Hilmer Report's original conception. Indeed, in the Tribunal's FMG decision, the public interest test bears much the burden of determining the ultimate outcome.

Now that the public interest determination is to be made by a political entity, there is a case for ensuring the other criteria are in fact meaningful filters in the decision process. After all, if the Tribunal has to accept the Minister's decision that the service would not be contrary to the public interest, then generally there is little for it to do unless the other criteria play a greater role as effective hurdles to declaration.

The High Court decision started the process of making the other criteria more stringent through its interpretation of Criterion (b). The issues associated with that interpretation have been discussed above; but it is worth noting that similar issues arise with respect to criterion (a), as well as with the production process exemption. It may well be that the Tribunal, faced with a situation where it has less scope to place the weight of its decisions on criterion (f), will want to reconsider those other elements of the declaration process as well (and notably criterion (a)), restoring some of the effectiveness that was clearly envisaged in the Hilmer Report's design.

5. Institutions and processes

In theory, the efficiency of any system of legal rules requires a balancing of four principal costs:

- the costs of designing and implementing legal standards (rule-making costs);
- the costs of enforcing the standards (enforcement costs);
- the costs those rules impose on the regulated (compliance costs); and
- the social costs imposed by any offences committed under the rules.

The regulatory system should try to minimise the sum of these costs. As with any legal process, an important factor determining the extent to which it does so is its accuracy, where accuracy is simply the avoidance of error. While that degree of accuracy of any legal process is influenced by its design and the actions of participants, the possibility of error in access regulation is inevitably high. These are decisions of exceptional complexity that require lengthy economic, technical and commercial analysis. The decision process itself is complicated, time-consuming and information-intensive. A large element of judgement, in deciding whether and how to intervene, is unavoidable and hence there is an increased risk of error with it.

Yet accuracy has high social value. Mistakes are costly in themselves, so (all else equal) their avoidance is a benefit to society. Moreover, greater accuracy brings improved control of behaviour — the more accurate access decisions are, the less incentive access seekers have to wrongly seek access and access providers to wrongly deny access. And accuracy also increases the incentives for settlement and saves on costly litigation. If parties agree on likely outcomes – i.e. share the same expectation of those outcomes – they are more likely to come to an agreement (which could include not seeking access) that is at least as good for them as those outcomes are and which avoids the costs getting to those outcomes would entail. Finally, greater accuracy reduces risk bearing by making outcomes more predictable, encouraging investment.

However, higher levels of accuracy are costly because they require a lengthy and high quality legal process. There is consequently an optimal level of accuracy. Specifically, it is socially desirable to invest in accuracy as long as the increase in costs is outweighed by the increase in expected gain, that is, where that gain is the increase in the probability of reversal of error multiplied by the social harm from error. The greater the social costs of error, the greater should be society's investment in improving accuracy.

Seen in this light, the overwhelming impact that access regulation has on the property rights and commercial prospects of regulated businesses, the economic significance of infrastructure (indeed the legislation applies only to facilities of 'national significance') and the long-term detriment and distortions which might arise from uncorrected regulatory errors, are all strong indications that an appeals process is likely to be valuable. This is consistent with the Productivity Commission's assessment of the gas access regime, where the Commission concluded:

> *There is a need for a merits review under the Gas Access Regime. In the Commission's view, appropriate protection for property rights and natural justice are key considerations. While the appeal process might take considerable time and expend considerable resources, the regulatory bodies and Ministers have powers to make decisions that have an impact on fundamental rights of service providers. The prospect of exposure to imperfect regulatory instruments means there is a strong case for a merits review.*[22]

Appeals process

The appeals process is designed to correct errors: in economic terms, a well-designed appeals mechanism helps minimise error and adjudication costs (which include appeal costs). Importantly, if litigants possess information about the occurrence of error and appeal bodies have the ability to verify whether it has indeed occurred, then litigants will have incentives to bring appeals when errors are likely to have been made, but not otherwise. As a result, a well-designed appeals mechanism is doubly efficient: it corrects potentially costly errors while focusing attention and resources on the instances where errors are most likely to have been made.

The mechanisms underpinning this important result are straightforward. If the appellate body is more likely to reverse errors than correct decisions, then a disappointed litigant's expected return from an appeal is higher if an error occurred than if it did not. Victims of error will consequently find it more worthwhile to bring appeals than will parties subject to an adverse, but correct, decision, as the expected gain is more likely to exceed the private costs of appeal for the former than the latter. Further, the most socially harmful aspects of regulatory decisions would be subjected to the most frequent appeals and hence would have the greatest likelihood of eventually being set right.

The benefit of using the appeals system hinges on its ability to harness the information of the litigants themselves. By getting the litigants to self-select, resources tend to be spent on cases where a mistake has already been made. Moreover, having brought an appeal, the victim of the error has strong incentives to correct any information or analysis which may have led to the error being made. As a result, an appeals process can correct error and do so relatively cheaply — reconsidering only the sub-set of cases where errors were more probably made. This makes society's investment in the appeals process cheaper than the alternative approach to reducing error costs, which would be to invest in improving the accuracy of the initial determination (which requires extra expenditure in every case, rather than only in the more difficult instances).

If only victims of error bring appeals, the appeals process is socially desirable if and only if the social harm from certain error exceeds the social cost of the appeal plus the expected harm from failure to reverse error. The appeals process is likely to be socially desirable the lower its cost, the greater the chance of reversing error and the greater the social harm from error. In particular, and other things being equal, the appeals process will be desirable if the social harm exceeds a certain threshold

[22] Productivity Commission, 2003, 498.

(determined by the minimum costs of an appeal) and will not be desirable if the harm lies below this threshold.

Where there is an appeals mechanism in place, the social harm from an error at the first stage of the regulatory process is less than the harm flowing from a sure error. Instead, it is the cost of the appeals process plus the expected harm from failure to reverse error; this amount is lower than the sure harm from error. Therefore, the optimal investment in improving the accuracy of the initial decision-maker is less than it would be were there no appeals process and no opportunity to correct errors.

The appeals process not only increases accuracy through correcting errors; it may also encourage the regulatory body to take more care to avoid error through dislike of being reversed (so long as erroneous decisions are more likely to be appealed and reversed than are correct decisions) and thus improve the quality of decision making. Thus, the knowledge that every decision is potentially subject to Tribunal review is a powerful incentive to provide fair, reasoned and transparent decision-making. The possibility of Tribunal review mandates attention to detail, focusing attention on the need to ensure that every interested party is afforded a full and frank assessment of its position.[23]

Moreover, there may be substantial wider social gains if the review mechanism clarifies the proper interpretation of the rules, thus conferring a positive externality on all the parties involved in decision-making. This has been a crucial feature of experience with the competition provisions of the CCA, where review by the Tribunal and the Courts has played a central role in pinning down the meaning of key sections, stabilising expectations about the legislation's application.

In short, it is indeed correct that adding a layer of review increases the resource cost of the adjudication mechanism; however, that increased cost must be compared to the social value of reducing the incidence of costly adjudicative errors. Given a high social cost of error in decisions that bear on vital infrastructure, compared to the resource costs of review, the net gains of review are likely to be positive.

That is all the more the case given Part IIIA's economy-wide scope. Whatever its benefits, that economy-wide scope, and the fact that Part IIIA is so unusual by international standards, means the Part inevitably creates regulatory risk for investors in Australian assets. An effective process of review can reduce that risk, lowering the cost of capital for investment in Australia and allowing efficient investment to proceed.

Merits review

Merits review plays a critical role in improving the quality, transparency and accountability of regulatory decision making.

[23] However, as that additional care will apply also to decisions that would have been taken correctly in any event, some of the change is inframarginal, imposing an offsetting cost. See generally Shavell 2004, 456-61.

The possibility of error is the public policy basis of merits review. Merits review is a process that allows a second governmental decision-maker, often a tribunal or similar panel of experts, to step into the shoes of the primary decision-maker and re-determine administrative decisions according to the merits of each individual case. It is a fundamentally different process from judicial review, which is where a court determines whether an administrative decision was lawful.

Merits review of declaration decisions is intended to:

- maximise accountability;
- maximise regulatory certainty;
- maximise the conditions for the NCC to make a correct initial decision;
- achieve the best decisions possible;
- ensure that all stakeholders' interests are taken into account, including those of service and network providers, and consumers;
- minimise the risk of gaming; and
- minimise time delays and cost.

Judicial review cannot be viewed as a viable alternative or substitute for merits review. Judicial review is directed at errors of law and is unlikely to be capable of correcting the types of factual errors that occur in regulatory decisions. Judicial review would only be effective at ensuring *lawful* decisions were made — it would not ensure that the access regime made *good* decisions.

As established in the preceding section, the appeal process can reduce error as long as the appeals body is more likely to reverse errors than correct decisions. In cases involving access regulation, professional economic analysis is required, as well as expert technical and commercial assessment, and courts are usually ill suited to conduct such analysis. Participation by experts in the review process is therefore likely to assist in reaching good decisions. This is the role of the Tribunal, which has proved its value in many years of experience under Australia's competition laws.

The High Court (2012) recently decided that the Tribunal's review of a Minister's declaration decision was:

> *'a "re-consideration" which requires reviewing what the original decision maker decided and doing that by reference to the material that was placed before the original decision maker …. supplemented, if necessary, by any information, assistance or report given to the Tribunal by the NCC in response to a request made under s 44K(6).' (High Court 2012, paras 60, 65)*

It was not to rehear the matter or allow the parties to present new evidence. The Tribunal has closely followed the High Court's direction. In its rehearing of the applications by Robe River Mining Co Pty Ltd and Hamersley Iron Pty Ltd (Australian Competition Tribunal, 2013) it refused to request any extra

evidence from the NCC. The Tribunal rejected Fortesque's submission that it should require the NCC to seek expert reports from the parties and provide them to the Tribunal, with such commentary as it considers appropriate, or allow the applicants to provide reports directly to the Tribunal, saying they did not have the power to do so, and even had it that power it would not exercise its discretion to do so (Australian Competition Tribunal, 2013 paras 99, 146).

The Tribunal's role is therefore already relatively confined, for instance compared to its role in authorisation proceedings under the competition laws.

By contrast, a re-hearing would be a more time-consuming and costly review process. A full d*e novo* review might also lead to a shifting of primary decision-making responsibilities to the review body and could create incentives for regulated businesses to withhold information in the first instance.

Overall, in the light of the constraints already imposed on the Tribunal's role, and the importance of correcting errors in the application of the regime, it seems difficult to argue appeal opportunities should be further limited. This is especially so given the unique features of the Australian access regime, notably the economy-wide scope of its application. Given the risks that wide scope creates – not merely of error occurring, but of the risk of error deterring socially desirable investment – merits review should remain a central element of the Australian access regime.

6. Conclusion – What should be the future role of the National Access Regime?

Forcing an asset owner to provide access has both costs and benefits, and there is no guarantee that it will increase efficiency. An access regime should take account of all expected benefits and costs — including the large potential costs of regulatory error, forgone investment, constraints on efficient pricing and service delivery, incentives for strategic behaviour and rent seeking, and compliance, litigation and administrative costs. That is no easy task.

These potential costs mean it is too expensive to conduct an open-ended inquiry into the costs and benefits of declaration in each individual case. Instead there need to be hurdles, or filters, which rule out mandating access where it is unlikely to result in substantial net gains and limit mandatory access to the limited number of instances where it is most likely to enhance welfare. As the Hilmer Report stressed, the high costs of over-riding property rights should only be borne if there is a substantial prospect of even larger benefits. And having clear rules that impose such a test increases predictability, making it possible for parties to take decisions without having to guess what some future regulator will do and thus reducing the costs of an access regime.

In terms of the substantive content of those rules, efficiency considerations suggest that the more permissive the criteria for declaration, the greater will be the costs from *ex ante* uncertainty and *ex post* enforcement. These costs are all the higher if, as with an access regime, case-by-case assessment of consequences will involve inherently contentious judgements that ultimately may need to be taken by decision-makers with limited information and expertise, inducing (essentially unproductive) expenditure in seeking to establish a case one way or another. In contrast, stringent criteria for intervention provide more certainty for investors and limit the costs imposed, including by avoiding the most socially costly errors.

For a broad access regime that applies across the economy, the costs of being unduly generous in providing access are likely to be substantially greater than the costs of erring on the side of being slightly too stringent. As a result, the conditions for access should put greater weight on avoiding false positives than false negatives.

The Hilmer Report recommended such an approach. The access regime it proposed granted third party access only for essential or bottleneck facilities and within the confines of tightly defined criteria:

> *The Committee is conscious of the need to carefully limit the circumstances in which one business is required by law to make its facilities available to another. Failure to provide appropriate protection to the owners of such facilities has the potential to undermine incentives for investment. (Hilmer Report p.248)*

Although the legislation as enacted did include a number of criteria that had to be met for an asset to be declared, their interpretation has meant the tests for declaration have been somewhat diluted. Set against that long run of cases, whose individual and combined effect was to weaken the hurdles, the

High Court decision in the Pilbara railways case tightened interpretation of the criteria, restricting declaration to cases where the asset was not privately profitable to duplicate and limiting the Tribunal's role in assessing the public interest. There will doubtless be a range of views put to the Commission in respect of that decision, but whatever arguments can be put against it must be weighed against the strong arguments that can be put in its support; and it needs to be remembered that it comes against a backdrop of decisions that weakened the hurdles for declaration and therefore shifted the balance of the regime further away from that envisaged in the Hilmer Report.

Moreover, and crucially, the fact is that – through litigation stretching over many years that has cost many millions of dollars – at least now there is some certainty about the meaning of the legislation. Given that, a very compelling case would need to be made before it could seem sensible to change the law and start all over again. That is not to suggest the current regime is perfect – it obviously is not. Nor is it to suggest the High Court decision is uncontroversial – plainly, it is not. But uncertainty is among the greatest of costs a legal regime can impose. And those costs are likely to be especially high in a regime with the sweeping scope, and potentially serious consequences, of the National Access Regime.

Caution should therefore be exercised by the Commission in recommending changes. The National Access Regime retains an important role. The best way of consolidating that role is to preserve the certainty that has, at such high cost, now been obtained.

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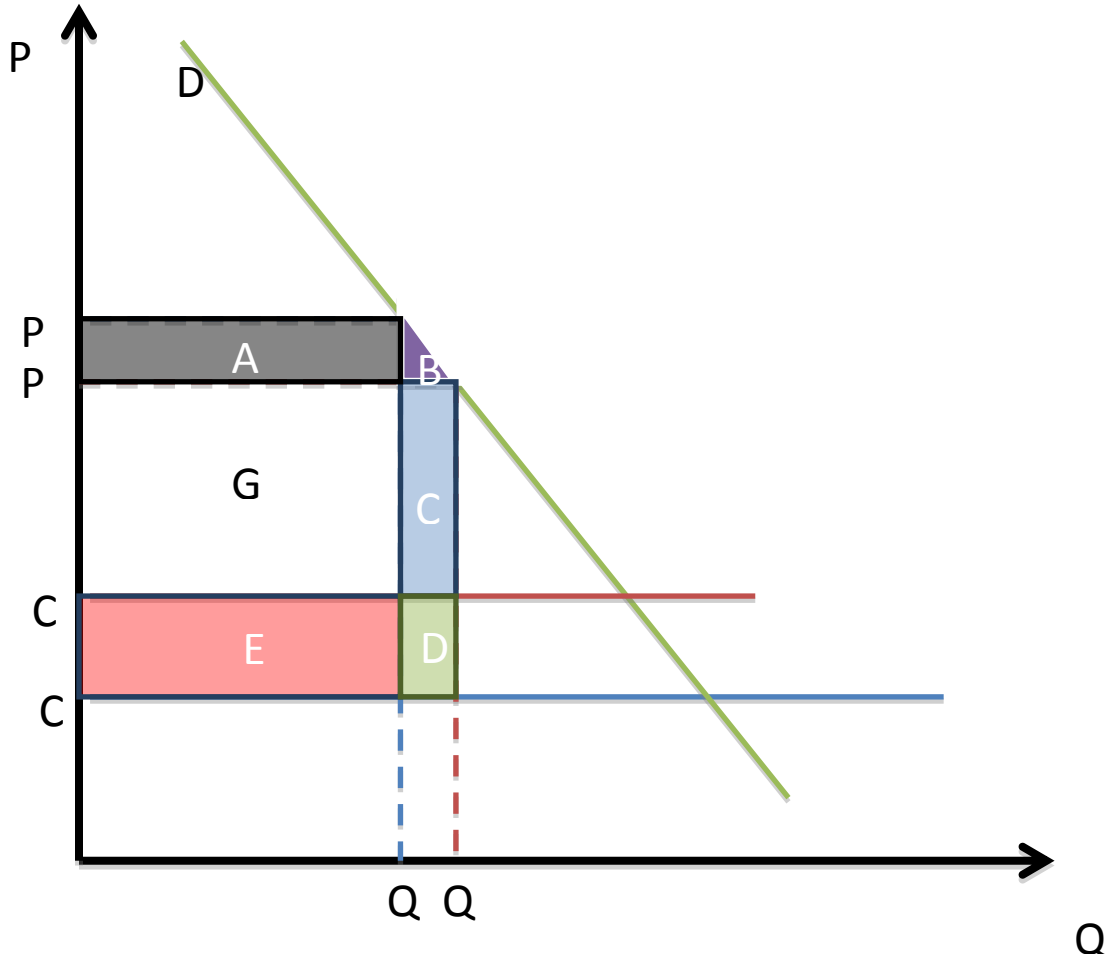
Appendix 1 Efficiency effects in related downstream markets

The efficiency effects of various policies are illustrated in Figure 1. It shows a final goods market, downstream from the essential facility. For simplicity, it assumes the marginal costs of production are constant. If there are fixed costs of production (such as the capital costs of the essential facility), the average cost of producing the final output will fall with output and there is natural monopoly.

Figure 1:Efficiency effects in the downstream final goods market



The first case to illustrate is where the owner of essential facility is vertically integrated and has a monopoly in the final output market and charges the profit-maximising price P_0, producing output Q_0. The per unit monopoly price mark-up over the marginal costs of production for the final good is $P_0 - C_0$ (which includes the marginal cost of the essential input). Through its monopoly power, the incumbent

earns profits $(P_0 – C_0)Q_0 – F = AG – F$, where F is fixed costs. This could be the situation for an unregulated former public utility.

Now assume there are some efficient potential entrants, who have lower downstream market costs than the incumbent. For simplicity, assume their average costs are constant (which would then equal their marginal costs) and equal to each other.

The monopolist has every incentive to sell access to the essential facility to the entrants if they are more efficient, as that would reduce its marginal costs of supplying the final good market, say from C_0 to C_1, increasing its profits by the red rectangle (E). Further, as the marginal cost of supplying the final good market has fallen, so will the profit-maximising final good price, say from P_0 to P_1. That increases the incumbent's profits further (by CD – A).

The per unit monopoly price mark-up in the final good market is $P_1 – C_1$ and the incumbent earns profits $(P_1 – C_1)Q_1 - F = GCED – F$. It does this through charging a high price for use of the essential input. The entrants' average cost of supplying the final market, including the mark-up on the essential inputs, is P_0. They earn zero profits. The mark-up on the essential input is a transfer from consumer to the essential facility owner and is not part of the social marginal cost of production.

Here the increased competition is beneficial. The lower social cost of producing output Q_0 increases efficiency by the red rectangle (E). The increase in output to Q_1 increases efficiency further by the green plus blue plus purple areas (BCD) – which is the difference between the value to consumers and the social cost of the extra units produced (Q_0Q_1). Consumers gain from the lower price.

Alternatively, the efficiency effects of increased competition can be derived by adding up all the resulting gains and losses. Consumers gain AB. The incumbent's profits increase by CDE – A. Efficiency increases by BCDE.

If the entrants enter the market through an access regime which regulates the price of the essential input, then the final good price may be lowered further, increasing output, increasing the gains to consumers and increasing efficiency (the green plus blue areas get bigger).

On the other hand, an access regime cannot guarantee that entrants will be efficient and lower costs. The per unit cost of supplying the final market could increase because:

- high cost entrants may gain access under the regime,
- providing access to entrants may increase costs (for both the entrants and the incumbent) or,
- if the essential facility's output is used in variable proportions with other inputs in the downstream stage, its monopoly price causes downstream users to inefficiently substitute towards other inputs, raising social costs of production (but lowering the entrant's private cost).

If mandatory access reduces prices but increases costs, then its efficiency effects are ambiguous.

Say the incumbent's costs were initially C_1 and output Q_0. The lower final good price increases output from Q_0 to Q_1 giving a gain of the purple plus blue plus green areas (BCD), the difference between the benefit of those extra units and their social cost.

If the entrant's costs are $C_{0.}$, the higher cost of production by entrants raises reduces efficiency by a portion of the red and green rectangles – the portion being the market share of entrants. If mandatory access also increases the incumbent's costs (because it disrupts vertically integrated operations, increases transactions costs and reduces flexibility), then that also reduces efficiency. For example, if costs increase from C_1 to C_0 for all producers, the whole of the red and green rectangles is a loss.