8 Access to rail infrastructure services

Regulating access to rail infrastructure services is one way governments can ensure that train operators have the right to seek access on terms and conditions that do not disadvantage them relative to their competitors. Access regulation is most likely to be relevant in markets where it is desirable to promote competition between train operators and where this cannot be achieved more effectively through other reform measures.

A well designed access regime offers a workable framework in which track owners and train operators can reach agreements regarding access to track, while minimising the regulatory cost of doing so.

Existing railways facing limited competition are able to raise prices or lower the quality of service to increase revenue. In contrast, increased competitive pressure may improve market outcomes because competition, or the threat of competition, puts pressure on railways to operate more efficiently, look for innovative ways to respond to customer needs, improve quality and/or lower prices.

Competitive pressure can be generated from within the market (rail-on-rail competition), competition for the market (through franchising) or from other forms of transport, particularly road and sea transport (chapters 2 and 6). Effective competition within the rail industry may be blunted if potential rail operators cannot gain access to track, or can only gain access subject to unfavourable prices, scheduling or other conditions.[1]

To create the right to seek access to infrastructure and so encourage competition, most governments have introduced legislative access regimes which set out:

- the terms and conditions for gaining access to the track; and/or
- the processes that determine these terms and conditions.

The terms of reference direct the Commission to consider the operation of access regimes in relation to the interstate and intrastate rail freight networks, although

[1] Although the Commission will focus on gaining access to track, the general principles may be extended to other associated rail infrastructure services (such as workshops, stations and signalling equipment) in some circumstances.

passenger operations are also affected.[2] In doing so the Commission examines the institutional arrangements that governments have introduced (section 8.1). It then considers the markets where access regulation may improve industry performance and the principles underlying well designed regimes in these markets (section 8.2). The problems of developing and implementing effective regimes, including the costs of access (section 8.3), pricing and allocating train schedules (section 8.4), costing methodologies (section 8.5) and the complexity of operating on the interstate network (section 8.6) are also discussed.

8.1 Australian access regimes

In its 1991 inquiry into rail transport, the Industry Commission (IC) recommended that track owners be required to allow other organisations track access subject only to capacity being available and the negotiation of a commercial agreement.

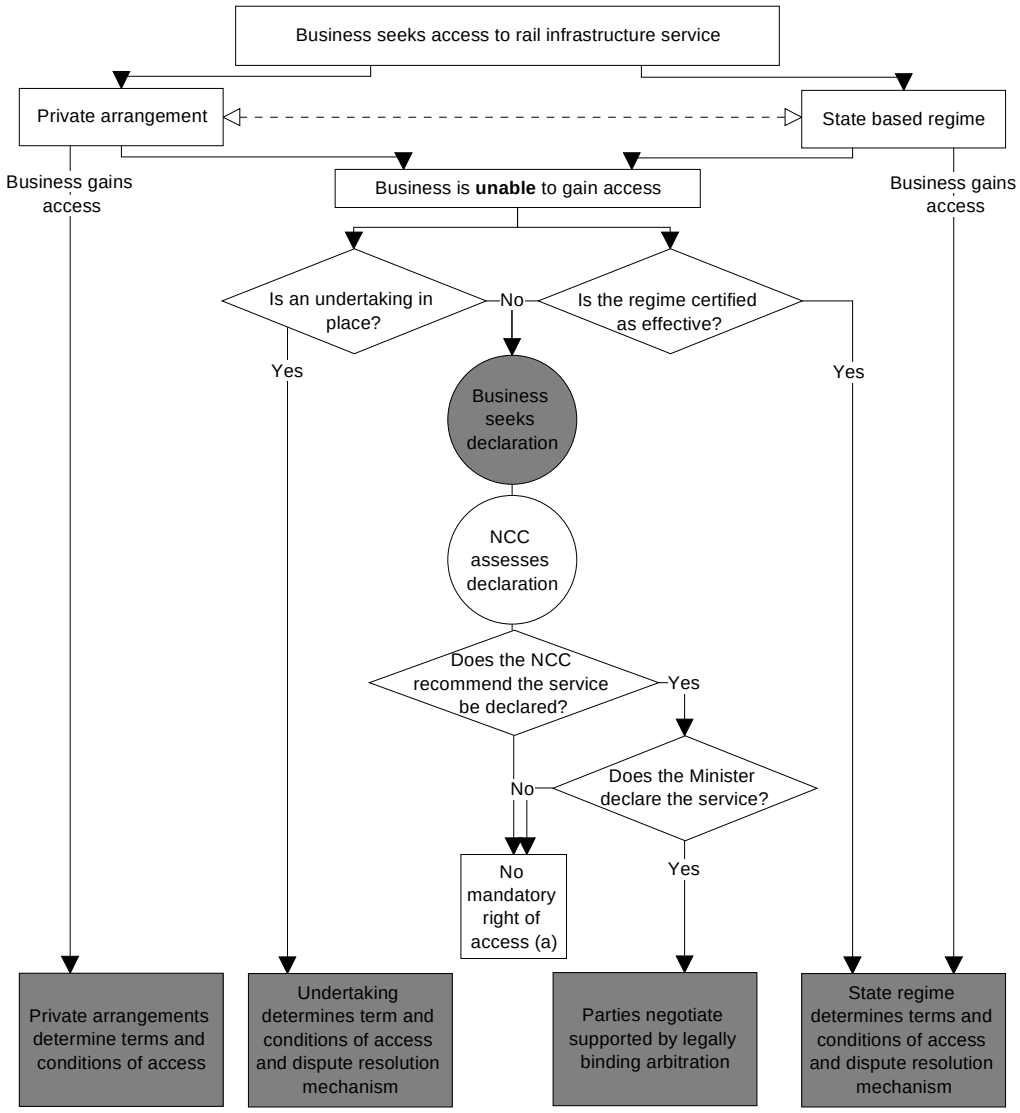
Since then there have been significant changes in the institutional arrangements which facilitate access to a range of rail infrastructure services (chapter 3 and appendix D). The details of current Australian access regimes are presented in appendix F.

In 1995, the National Access Regime was introduced under Part IIIA of the *Trade Practices Act 1974* (TPA) as part of the National Competition Policy Package. Under the regime, new and existing rail operators can:

- request that the National Competition Council (NCC) recommend that the relevant Minister 'declare' access to the services of a particular infrastructure facility. If the facility is declared, the parties enter into negotiation, supported by legally binding arbitration, in order to reach agreeable terms and conditions;
- negotiate within the provisions of a legally binding 'undertaking' registered with the Australian Competition and Consumer Commission (ACCC); or
- negotiate within the provisions of state-based access regimes which may, or may not, be certified as being 'effective' following a recommendation by the NCC (figure **8.1**).

[2] In many instances, the provisions within access regimes are equally applicable to both freight and passenger businesses. However, some regimes include specific terms and conditions for certain types of business. The NSW rail access regime includes specific pricing principles for coal freight (appendix F).

Figure 8.2 **Alternative ways to seek access**



a However, parties can appeal the decision to the Australian Competition Tribunal.

Sources: IC 1995a; NCC 1996b; ACCC 1997b.

Most State Governments have proclaimed access regimes for rail infrastructure services, but these have not been certified as effective (chapter 3).[3] The access regimes differ, both in terms of their coverage (types of track, such as intrastate and interstate) and the provisions that they contain. The NSW and WA regimes cover both interstate and intrastate networks, and the Queensland, SA and Victorian regimes apply only to the intrastate network (table **8.1**).

[3] Some of these are rail specific and others are more general, applying to major infrastructure (appendix F).

Each regime contains provisions setting out the principles for access seekers to negotiate with the access providers to reach agreeable terms and conditions. However, the pricing principles and the restrictions on negotiation can vary significantly (box **8.1**). Similarly, although each regime contains provisions and mechanisms for dispute resolution, these can vary in terms of the independence of the arbitrator, the transparency of arbitrated decisions, and the scope to appeal decisions (appendix F).

Currently, if operators are unable to gain access under agreeable terms and conditions, they may seek a declaration under the provisions of the National Access Regime. The NCC has received applications from five operators seeking declaration of certain rail infrastructure services (table **8.2**).

All but one of these have been assessed by the NCC, and recommendations made to the relevant Minister. In each case the service was deemed by the relevant Minister not to be declared. And in each case the appeals process through the Australian Competition Tribunal (the Tribunal) was invoked.

In some instances the declaration process stimulated further negotiations between the parties, leading to agreement being reached.

One application (the Hamersley Iron rail service in the Pilbara) was terminated, following a decision by the Federal Court in June 1999 regarding the NCC's jurisdiction to accept or review the application or make a recommendation on the matter. The court ruled that the Hamersley Iron rail service was integral to the production process and should therefore not be subject to access by Hamersley Iron's competitors. In July 1999, the NCC and Hope Downs Management Services appealed the decision.

The ACCC has not received any undertakings for rail. However, the Australian Rail Track Corporation (ARTC) has indicated that it intends to develop an industry code to form the basis of an access undertaking to be submitted to the ACCC in the future for the interstate track under its control (trans., p. 570).

Table 8.3 **Coverage of state access regimes for rail[a]**

State	*Interstate*	*Intrastate*
NSW	NSW Rail Access Regime	NSW Rail Access Regime
Vic	na	*Rail Corporations (Amendment) Act 1998* [b]
Qld	na	*Queensland Competition Authority Act 1997*
		Queensland Competition Authority Amendment Regulation (No. 1) 1998
SA	na	*Railways (Operations and Access) Act 1997*
WA	*Government Railways Act 1904*	*Government Railways Act 1904*
	Government Railways (Access) Bill 1998	*Government Railways (Access) Bill 1998* [c]
Tas [d]	na	na

a As no jurisdictions have certified rail access regimes and no undertakings are currently in place, an operator may seek a declaration through the National Access Regime (under Part IIIA of the TPA) on all parts of the Australian rail network. **b** The regime covers the Freight Victoria country network (sub. 82). **c** The regime currently applies to the government owned freight network and excludes the private iron ore railways in the Pilbara area. **d** There is no specific access legislation. Tasrail, as owner of the track is required to enter into negotiations with other operators under its contract of sale. **na** Not applicable.

Source: Appendix F.

Table 8.4 **Declaration applications in rail**

Matter	*Outcome*
Brisbane to Cairns rail freight services	NCC recommended that the service not be declared. Queensland Premier did not declare the service. An appeal lodged with the Australian Competition Tribunal was later withdrawn.
Sydney to Broken Hill rail services	NCC recommended that the service be declared. NSW Premier did not make a formal decision, so the service was deemed not to be declared. An appeal lodged with the Australian Competition Tribunal was withdrawn after the parties reached an agreement.
Hunter Valley rail service	NCC recommended that the service be declared. NSW Premier did not make a formal decision, so the service was deemed not to be declared. An appeal to the Australian Competition Tribunal is in progress.
WA rail and freight support services	NCC recommended that the rail service be declared but that the freight support services not be declared. WA Premier did not declare the rail line service or the freight service. An appeal was lodged with the Australian Competition Tribunal, but was withdrawn after the parties reached an agreement.
Hamersley Iron ore rail service in the Pilbara	Hamersley Iron applied to the Federal Court requesting that the NCC be restrained permanently from both considering the Robe River application any further and making a recommendation to the Commonwealth Treasurer. In June 1999, the Federal Court ruled in favour of Hamersley Iron arguing that the rail line was integral to the mine's production and therefore should not be subject to third party access under Part IIIA of the Trade Practices Act. In July 1999, the NCC and Hope Downs Management Services (a prospective iron ore company) appealed the decision.

Sources: NCC 1998d; NCC 1997a.

Box 8.2 Access pricing arrangements

The NSW rail access regime was gazetted in February 1999. The access regime sets pricing principles for both general usage and coal freight.

General usage access prices are negotiated between a 'floor' and a 'ceiling'.

- The floor requires that:
  - any access revenue must at least meet the direct costs imposed by the access seeker(s); and
  - sectors should recover their incremental costs, including incremental fixed costs.
- The ceiling requires that any access revenue must not exceed the full economic cost of the sector(s) for which access is required on a stand alone basis.

In addition, Rail Access Corporation's total revenue must not exceed the stand alone full economic cost of the entire network.

Access prices for coal freight are on an origin-destination basis. On some routes the access price is negotiated as for general usage. On others, the access price is set as the ceiling price plus an adjustment component that reflects the amount that rail freight haulage revenue exceeded costs (access and rail operations) on that line in 1996-97. Coal specific pricing principles are currently being phased out, expiring on 30 June 2000.

Under the SA rail access regime, negotiation to gain access to the intrastate network is subject to 'floor' and 'ceiling' prices.

- The floor reflects the lowest price at which the access provider could provide the relevant services without incurring a loss.
- The ceiling reflects the highest price that could fairly be asked by an access provider for provision of the relevant services.

The Queensland rail access regime allows for 'access undertakings' which contain a framework of terms and conditions under which access will be provided. Queensland Rail (QR) has developed a draft undertaking based on a 'constrained market approach' that allows QR to discriminate between railway operators competing in different markets (sub. 59).

The pricing principles for government-owned railways in Western Australia are being developed as part of a Rail Access Code.

Under the Victorian regime, negotiation is not limited by defined floor and ceiling prices, although guidelines exist regarding prices determined as part of arbitrated decisions (through the Office of the Regulator General) (sub. 82).

On the interstate network, the ARTC publishes prices and terms and conditions for gaining access to the track which it owns (mainly South Australia) or manages (Victoria). In New South Wales, Queensland and Western Australia, the ARTC is negotiating specific train paths with the relevant track access body which it will on-sell to potential train operators.

Sources: Appendix F; subs. 59; 82; DR102.

8.2 Regulating access in rail markets

The appropriateness of access regulation depends on:

- the objective of regulating access;
- the characteristics of the railway network and markets; and
- the type of regime that is implemented.

The implications for the appropriate access regime for each of the interstate, regional and urban rail networks is summarised at the end of the section.

Why regulate access?

Competitive pressure in rail markets can influence the behaviour of existing operators, leading ultimately to improved market outcomes. In some rail markets, productivity benefits can be generated by creating an environment which (chapter 6):

- increases the potential for competition in the market;
- encourages market segmentation and product diversity; and/or
- prevents the infrastructure provider from abusing its market power to make monopoly profits.

One way to create such an environment is to provide opportunities for new operators to gain access to track on terms and conditions that do not disadvantage them relative to their competitors. Access regimes also place bounds on returns available to the track owner to prevent the earning of monopoly profit.

However, the potential benefits of access regulation should be balanced against the sometimes significant costs of regulation (section 8.3).

The potential benefits of access regulation should also be considered in the context of other institutional, structural and regulatory reforms in rail markets. In many cases other reforms address the problems facing the industry more effectively, either by providing better solutions or achieving a similar outcome at lower cost. An increased commercial focus may lead to improvements in efficiency by changing the incentives facing managers and reducing the scope for government interference in business decisions (chapter 7). Such reforms are particularly relevant in the black coal markets. Equally, in interstate markets, reform to address inconsistencies between the systems in terms of technical specifications and operating procedures will reduce costs and uncertainty for existing and potential operators (chapter 9).

Which markets?

In some rail markets the case for or against access regulation is clear.

It is unlikely that access regulation will be relevant in markets where the potential benefits of competition between rail operators arising from access regulation are small and/or the costs of regulation are large, or where the track infrastructure is struggling to be viable. An example is where it will only ever be cost effective for one train operator to provide services over a line — given the nature of the market and the large competitive pressures from other transport modes (such as a suburban passenger route or various regional networks carrying low volumes) (chapter 2, chapter 6, box 6.2).[4] As Rail 2000 noted:

> There are certain branch lines that if you have an open slather, open access policy, are never going to turn a dollar. (trans., pp. 9-10)

Maddock expressed a similar view:

> If rail faces strong competition from road, so strong that it does not earn a commercial return, then we should not be treating rail as a natural monopoly … The correct policy position at the first level would thus seem to be to remove regulation, and to remove third party access requirements, since these will not produce efficiency gains. (sub. 40, pp. 2-3)

King and Maddock argued that in relation to low volume intrastate railways:

> Since we can rely on road transport to impose competitive pressure on such intrastate rail there is probably no need to regulate it at all. The key policy issues are for State governments to determine the appropriate mechanisms to induce the managers of such systems to operate them as efficiently as possible. (King and Maddock 1999, p. 12)

Similarly, formal access regimes are likely to be unnecessary in markets where existing train operators and track owners have reached private agreements.

Access regulation is more likely to be relevant in markets where it is desirable to promote competition between train operators (either for customers or for the use of the track) and/or prevent market power in track infrastructure being used to inhibit competition. Access regulation may be appropriate where these objectives cannot be achieved more effectively through other reforms.

There is some evidence that the potential for increased competition in some main coal railways in regional Queensland and New South Wales has generated significant benefits, in terms of efficiency improvements by freight carriers and lower freight prices. Competitive pressures on coal rail freight in the Hunter Valley

[4] Although potential operators in these markets may seek access to a specific part of the route or infrastructure, for example, the central train station.

have led to reductions in rail freight rates of around 25 per cent between 1995-96 and 1997-98 (NCC 1998a). It is difficult to identify the contributions of the threat of competition between train operators and other factors, such as the phasing out of monopoly rents and contracting out of maintenance services, in the freight rate reductions.

The nature of the downstream markets into which coal is sold may also limit the ability of rail operators to extract monopoly rents. Maddock noted that:

> Even in the case of coal and other mineral lines on which there may be some degree of monopoly power, the prices concerned are set on the international market which again provides a check on the ability of the rail operators to extract monopoly rents. (sub. 40, p. 3)

It seems that there are still significant opportunities to drive efficiency gains further and improve performance of freight operations through competition, particularly 'for' the market in coal railways. Rio Tinto noted that in the Hunter Valley:

> … there has been some improvement in focus … [but] in terms of delivering anything like the efficiencies we see in other railway systems in this country and overseas, there's a long way to go. (trans., p. 545)

Similarly, the NSW Minerals Council noted:

> There are gains to be obtained from increasing competition … Those who would be advantaged by increased competition include the NSW coal industry, which would benefit from rail freight rates at world best practice levels, through a stronger industry which would be better able to compete in international coal markets. (sub. 39, p. 14)

There also is some evidence of benefits from increased competition among rail operators and increased market 'segmentation' in the interstate market. For example, the Specialized Container Transport (SCT) service between Melbourne and Perth commenced as a niche operation which focused on van traffic following the withdrawal of the National Rail Corporation (NRC) from this type of traffic (sub. 76). Other examples are provided in chapters 3 and 6.

In some rail markets, it is not clear whether access will enhance or diminish industry performance. Mandated access to the privately owned integrated railways supporting large export operations (like the Pilbara iron ore operations) may benefit new mining operations but this may be at the expense of incumbents and the national interest as a whole (box 8.2). When incumbent track owners lose their ability to act in their own commercial interest they may withdraw from future investment.

Box 8.2 **Privately owned iron ore operations**

A number of privately owned rail systems operate in the Pilbara, Western Australia. The operations are designed as integrated components of iron ore production — mining, hauling, blending and shipping the ore (Rio Tinto, sub. 58).

To transport iron ore to the port, a new mining operation situated close to an existing track could either:

- develop its own integrated operation by duplicating the existing infrastructure; or
- seek access to the existing infrastructure and so increase rail usage along a track.

In either case, the increased supply of the product from the new operations may depress world prices for both existing and new operations.

A commercially focused new operator would only build its own integrated operation if its expected revenues are greater than the cost of building and maintaining its track. It would prefer to use existing track if the costs of building and maintaining its own track are greater than the costs of negotiation and the access price agreed with the existing infrastructure owner.

If spare capacity exists along the line, then the existing owner would only deny access to a new operator if:

- the new operator imposed additional costs on the existing operator, for example through damaging the track; and
- the existing operator was not able to negotiate an access fee large enough to compensate for the additional costs or the revenue forgone; or
- lower world prices from additional competition impaired the viability of existing operations.

Denying access implies that the access charge (reflecting the anticipated benefits to the new operator) is insufficient to compensate the existing owner and cover the costs of negotiation. The commercially negotiated outcome (no access) would coincide with the national interest because either the new operator builds its own line or the proposal was not viable. Mandatory access would therefore not improve national welfare and may in fact prove to be harmful.

Sources: sub. 58; IC 1995a.

Access regulation may improve the performance of some rail markets, including interstate freight, where the benefits of increased competition, particularly through market segmentation, are expected to outweigh the costs of the access regime.

Access regulation is unlikely to improve performance in rail markets where there is no effective market power due to:

- ***significant intermodal competition;***
- ***competition in downstream markets; and/or***
- ***little congestion on track infrastructure.***

In these circumstances it is likely that very few train operators would seek access and that commercially driven railways will be able to reach private agreements.

Characteristics of well designed access regimes

A well designed access regime should offer a workable framework to address key problems in the market, while minimising the regulatory cost of doing so. It should:

- provide for an appropriate level of flexibility in terms of the ability of owners and operators to negotiate terms and conditions as market opportunities change;
- be transparent and administered independently; and
- reflect the institutional structure and arrangements governing the management and operation of the market.

An appropriate level of flexibility

An access regime can:

- provide for flexible outcomes within broad guidelines; or
- be highly prescriptive, specifying terms and conditions under which access can be made, for example through the use of posted prices (box 8.5).

Flexibility in setting terms and conditions is important when there is limited information about existing and future opportunities in the market because it allows owners and operators to respond to changing circumstances as they occur. In contrast, prescriptive regimes may establish rules that unduly restrict or prevent commercially driven outcomes.

Flexibility may also be desirable in markets with high fixed costs, like railways. In these markets significant benefits are generated by encouraging optimal utilisation of the track.[5] This can be achieved by discriminating between operators so that those operators (or outputs) that are marginally profitable, but would be lost if charged higher prices, pay less than other operators but still make some contribution towards the long run costs attributable to them.

However, several participants noted their concern that such flexibility can allow track owners to discriminate inappropriately between operators, disadvantaging one relative to its competitors. As SCT noted:

> Without openness of pricing, there is always the suspicion that someone else has been given a better deal. (sub. 37, p. 3)

An undesirable form of price discrimination is the cross-subsidisation of services which do not cover their own costs. In its report into *The Australian Black Coal Industry*, the Commission received a number of complaints of cross-subsidies from coal freight to other freight and passenger services in other networks (PC 1998a). These complaints were reiterated by several participants to this inquiry.

In addition, increased flexibility may be at the expense of certainty which may inhibit potential operators from taking advantage of market opportunities at the time they arise. If a negotiated outcome cannot be reached, potential operators can seek redress or resolution though arbitration or litigation. However, this can take time. As Great Northern Rail Services (GNRS) noted:

> … the time required for the resolution will effectively mean that the operator will have lost the job because of the inability to meet contract conditions within acceptable time scales. The whole dispute resolution process is by its nature, long and involved and the realities of the industry make that a commercial nonsense. (sub. 46, p. 9)

Increased flexibility may also increase transaction costs when large numbers of potential or actual operators individually negotiate terms and conditions with the access provider. However, it is unlikely that this will be a problem in many rail networks given the generally agreed view that most can only support a small number of operators (chapter 2).

Prescriptive access regimes may address some of these issues. If the prescriptive regime reflects efficient pricing principles and is seen to be transparent and independent, then operators may be confident that they are being offered fair and reasonable terms and conditions. However, the cost of getting the principles wrong

[5] Indeed, the so called economies of density may have a significant influence on network costs (chapter 6).

can be high. In addition, such regimes may involve greater direct regulatory input (and consequently have higher regulatory costs) than flexible regimes.

Flexibility in access regimes is required to ensure the optimal utilisation of the track, but this needs to be balanced against the potential costs:

- ***if it allows infrastructure owners to inappropriately cross-subsidise between operators; and/or***
- ***there are high transaction costs.***

Transparency and independence

Well designed access regimes should facilitate increased transparency. Several participants commented on the lack of transparency in access decisions in existing regimes and the difficulties that this presents to both track owners and train operators. With regard to access prices, Shell Coal suggested:

> Where there is no transparency and the owner of railway infrastructure has a natural monopoly, the customer (eg coal producer) cannot know whether the monopolist is using market power to recover inefficient operating costs and excessive overheads, or hide poor investment decisions. (sub. 36, p. 3)

Similarly, Rio Tinto suggested:

> … there is an inability of all customers to get from Queensland Rail a breakdown of the freight rates into the access charge and the hauler's charge, and that makes it very difficult once again to evaluate any competitive alternative. (trans., p. 543)

Some participants also commented on the lack of transparency in determining and publishing costs. Rio Tinto suggested:

> The industry has found it impossible to date to obtain any information at all on asset valuations. By contrast, Queensland coal producers have been able to obtain asset valuations for other public infrastructures such as the ports that we deal with, and the government-owned corporation there has made balance sheets available. Queensland Rail have made no information available. (trans., p. 543)

Similar concerns have been expressed by participants in the Commission's report into *The Australian Black Coal Industry* (PC 1998a). The Independent Pricing And Regulatory Tribunal of New South Wales (IPART), in its review of aspects of the NSW rail access regime, recommended that asset valuations be undertaken by an independent consultant. The process should include provision for stakeholders to comment on a draft valuation prior to the consultant establishing a final value (IPART 1999c).

Transparent pricing principles and cost methodologies within access regimes are highly desirable. Access to appropriate information may improve the efficiency of the price setting process and give potential train operators more confidence that they are being treated fairly. This is particularly important in markets with vertically integrated infrastructure owners (discussed below). As the NCC noted, for vertically integrated organisations it is important that:

> … there were some mechanisms to ensure transparency in those arrangements and to ensure that there wasn't the opportunity to, in effect, provide better internal pricing than would be available to other participants in the competitive market. (trans., p. 591)

The NSW Government regarded vertical separation as the key to facilitating transparency. It argued that:

> Open access and vertical separation have the potential to deliver significant benefits to the community … Also important is the creation of full transparency and the generation of commercial or market based pressures in all parts of the rail transport chain, neither of which may be achievable in a vertically integrated structure. (sub. DR128, p. 27)

Greater transparency in price *setting* is somewhat more complicated when train operators and track owners reach commercial agreements. In these cases the arguments for transparent pricing principles remain strong, although there will be less disclosure regarding the actual access charges facing individual operators.

It is also important to have independent arbitration and appeal mechanisms to limit any potential conflict of interest between the role of an infrastructure owner, the arbitrator and regulator. As the Queensland Commission of Audit noted:

> Given the incentive that exists for Queensland Rail to discourage competitors from operating on its network, the effectiveness of the regime will be limited unless it is enforced by an independent authority. (Queensland Commission of Audit 1996, p. 162)

Similarly, King noted:

> No one is going to fight an incumbent player who is also the industry umpire. (King 1997, p. 278)

When the possibility of conflict of interest exists it can be overcome by increasing the independence and transparency of the access regime processes, thereby providing operators with confidence that they are being treated fairly.

Increased transparency in pricing principles and cost methodologies, and independent arbitration and appeal processes would provide operators with confidence in the fairness of access decisions.

Institutional structure of the market

Well designed access regimes also should take account of any differences in the institutional structure of activities in the market. Depending on the jurisdiction, operators seeking to gain access to track can now negotiate with:

- a vertically integrated organisation with an access regime;
- a separate 'ring-fenced' infrastructure unit within a vertically integrated organisation; or
- a separate infrastructure owner.

Several participants commented that, at least in terms of seeking access, dealing with a vertically integrated organisation or 'ring-fenced' unit was unsatisfactory and that structural separation may deliver better access outcomes.

Vertically integrated organisations and ring-fencing

In vertically integrated railways, a conflict may exist between actions in the interest of the integrated organisation and any obligations to treat all train operators fairly. In this circumstance the track owner may also be competing as a train operator with other operators seeking access. The track owner has an incentive to increase the access price to the competitor because of its monopoly position. This problem may be compounded by a lack of transparency in relation to the decision making process. As the Queensland Mining Council noted:

> … invariably, the chief executive and the board of QR will be making decisions about growing the business on the one hand and decisions about admitting competitors whose objective is to take away their business … (trans., p. 622)

Gaining access to track in vertically integrated organisations may become less of a problem when potential train operators intend to operate in market segments that are not in direct competition with existing operators. Indeed, commercially focused track owners have strong incentives to set prices and conditions to encourage new operators in noncompeting markets onto the track as the increased traffic flow will reduce costs for all operators.

Creating ring-fenced units within the vertically integrated organisation may contribute to improving the transparency of access decisions and the perceived fairness of the process.

However, some participants were not convinced that these arrangements would be sufficient. Shell Coal noted that it:

> … strongly disagrees with the decision by the Queensland Government to keep Queensland Rail a vertically and horizontally integrated corporate entity and to construct 'Chinese walls' between above track operations and the newly formed Access Unit. The break-up of the NSW State Rail Authority was not easy but the benefits of putting above track and below track responsibilities into separate corporate entities has delivered benefits we believe will be much harder to achieve under the Queensland Rail structure. (sub. 36, p. 5)

Under ring-fencing the track owner may still have strong incentives to introduce unfavourable scheduling and maintenance arrangements. As GNRS noted:

> A direct competitor requiring access to the network for the purpose of running a train can be effectively 'frozen out'. This can be achieved 'legally' by causing undue delays in granting access and providing inappropriate paths for the running of trains. (sub. 46, p. 9)

Similarly, the Commonwealth Department of Transport and Regional Services (DTRS) noted:

> … there are much more subtle ways than simply denying someone access to a line [including] your maintenance work, various requirements you might have of other players [and] investment priorities.
>
> If you're a vertically integrated operation you'll invest where it will provide the best commercial return for you and that may or may not suit the commercial requirements of other operators. (trans., pp. 526-527)

It has been argued that for ring-fencing to be effective the business units must be independently accountable for their commercial performance. The Commission of the European Communities' proposal for the development of the railways within the Community recommended that:

> … to create a solid basis for infrastructure charges, it is necessary to separate both the profit and loss accounts and the balance sheets of the two activities [being the infrastructure management and the provision of transport services]. (EC 1998b, p. 12)

However, such measures may not necessarily promote full accountability where the business units are in a subsidiary relationship to a parent corporation which manages its subsidiaries to the benefit of the whole corporation.

For vertically integrated railways effective ring-fencing arrangements between track and other business operations could promote transparency and independence but may not be sufficient in some circumstances.

Vertical separation

Access problems are reduced when the track owner does not compete as a train operator, that is when vertical separation is introduced. As NCC noted:

> In the context of access, there are a lot of benefits with separation because you remove the conflict which exists with a vertically-integrated organisation where they are both a competitor and a service provider to people who want access. So if you're looking at the issue purely in the access context, then I think the benefits of structural separation there are quite large. (trans., p. 590)

Vertical separation may also facilitate perceptions of fairness. The NSW Government argued that vertical separation:

> … eliminates problems of attempting to ensure that all access seekers are treated fairly and on a 'level playing field'. These problems arise when the owner of the infrastructure is also a major user of the facilities ie when the owner competes with other access seekers for either use of infrastructure capacity, or in end markets. (sub. DR128, pp. 8-9)

In addition, the NSW Government argued that:

> … if structural separation has occurred, an access regime may improve the relationship between end market and infrastructure, given that the infrastructure remains a natural monopoly. (sub. DR128, p. 49)

Vertical separation was adopted in New South Wales in 1996 and for the interstate network in 1998.[6]

DTRS considered that this approach on the interstate network could be jeopardised:

> Of immediate concern to the Commonwealth is the WA Government's proposed sale of Westrail's freight operations as a vertically integrated package including the Westrail owned interstate track between Perth and Kalgoorlie. The decision by WA is potentially the first decision point at which rail reform deviates from the industry structure envisaged by the Intergovernmental Agreement and puts at risk the chances of success of the ARTC. (sub. 76, p. 12)

Vertical separation would address any conflict of interest by introducing incentives for the track owner to encourage more operators onto the track. However, in these cases track owners may still have an incentive and opportunity to exploit their market power and make monopoly profits. In this situation a strong access regime may still be required to regulate monopoly profits. The merits of structural separation are discussed in chapter 6.

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[6] Likewise in some overseas railways, track management, including the administration and negotiation of access, are undertaken by separate entities, such as Railtrack in Great Britain and Banverket in Sweden.

A strong access regime would be justified where a rail network is vertically integrated, the incumbent has market power and there is potential for competition between train operators in the same market.

A strong access regime would not be justified where a rail network is vertically separated and the track owner has little market power, as there are sufficient incentives for the track owner to efficiently use its capacity. Where the track owner has market power a strong access regime would still be required.

Access regimes for different networks

From the preceding discussion it is possible to determine the nature of access regimes required for each of the three railway networks outlined in chapter 2.

Only light handed access regimes are required for both the urban and regional networks without market power. In these networks there tends to be strong intermodal competition and only limited scope for competition between train operators for the same passengers or freight. Access arrangements for other operators wishing to use the network could be incorporated in franchise agreements or contracts.

In the regional networks with market power (the main coal lines) access arrangements depend, to some extent, upon the structural and ownership reform undertaken. If, as suggested by the Commission, these networks were horizontally separated as vertically integrated organisations and franchised, access arrangements would be included in the franchise agreement. Where there is vertical separation and considerable market power (as currently exists in the Hunter Valley) a strong access regime is required.

Although there is strong intermodal competition, there also is some competition between train operators on the interstate network. The access regime should encourage market segmentation and the entry of specialised train operators onto the network. Under current arrangements a strong access regime is required on those sections of the interstate network that remain vertically integrated (that is, Western Australia). Under the Commission's proposal for an interstate manager, the access requirements for the entire network would be embedded in a code of conduct (rules governing the operations of the network manager). This code would be approved, as an undertaking, by the ACCC.

8.3 Costs of access

The introduction and operation of access regimes is not costless. In determining the appropriate regime for any network the benefits and costs of the regime must be assessed. Introduction and operation of the regime includes the costs of:

- developing the regime;
- regulating access once the regime is in place; and
- the appeals process.

An important element of the cost of developing the regime is the time taken for it to be implemented. Some participants commented on the slowness with which access arrangements are being established. DTRS noted:

> Although bound by the Competition Principles Agreement to providing third party access to rail infrastructure, the States have been slow to develop rail access regimes that are acceptable to the NCC. (sub. 76, p. 5)

The NSW Minerals Council has been involved in the process to develop an effective rail access regime in New South Wales since 1995 (box 8.3). The NSW regime has still not been certified effective. The NSW Government noted that the NSW Minerals Council chose to participate in the process of developing the regime, and hence:

> Such costs were not imposed on the NSW Minerals Council. Rather the Council voluntarily incurred such costs. (sub. DR128, p. 50)

Once the regime has been implemented, train operators face costs associated with dealing with the regime, including administrative and compliance costs, and business incentives may be adversely affected (box 8.4).

Costs increase with the complexity of regimes and number of regimes with which operators are required to negotiate. Several participants noted the complexity of current access arrangements. Train operators on the interstate network must negotiate under a multiplicity of regimes. SCT noted:

> The difficulty with the state-based arrangements in SCT's experience with negotiations has not been that multiple telephone calls were necessary but that each state started out with different requirements and perceptions. It is the removal of the different perceptions and requirements that is needed (or the ability to remove the differences) not limiting the number of people that can be spoken to. (sub. 37, p. 2)

Box 8.3 **The NSW Minerals Council's experience**

The NSW Minerals Council noted that it has cost the Hunter Rail Access Task Force over $1.9 million since 1995 seeking to have an effective access regime established in New South Wales (subs. 39 and DR104). This includes:

- seeking unsuccessfully to contribute to the development of the regime;
- lodging an application for declaration of the Hunter Valley railway line service with the NCC;
- lodging an appeal with the Tribunal against the decision by the NSW Premier not to declare the service;
- responding to an application by the Rail Access Corporation in the Federal Court;
- responding to an application by the NSW Government to the NCC seeking the 'certification' of the NSW rail access regime;
- responding to the NCC's Draft Recommendation regarding the effectiveness of the regime;
- responding to IPART on the proposed terms of reference for a review of the regime; and
- making submissions to various inquiries and committees, including several submissions to the IPART Review of Aspects of the NSW Access Regime.

Source: sub. 39, pp. 20–22; sub. DR104, p. 5.

As noted in section 8.2, different access regimes are required depending upon the characteristics of each network. However, multiple regimes on a single network, such as the interstate network, unnecessarily increase the complexity of negotiating access. The NSW Government argued that:

> There may be good reasons for differences among access regimes eg. the amount and type of traffic on lines … The question of complexity and inconsistency is probably most relevant in the case of traffic traversing several regimes eg. interstate traffic. (sub. DR128, p. 49)

In other cases, different track owners within a particular area cause complexity. The Silverton Tramway Company noted:

> In order to access these sidings [near Broken Hill] our movement would commence on nonessential infrastructure, move onto essential infrastructure, across jurisdiction borders and onto a potential private siding.
>
> The access process for a 1.5 km journey comprises:
>
> – Siding agreements with [the] State Rail Authority of NSW to move from track occupied under licence
>
> – Access agreement with Rail Access Corporation

– Access agreement with Australian Rail Track Corporation.

Silverton is still trying to negotiate some sensible arrangements, currently without a positive outcome. (sub. 54, p. 3)

Box 8.4 **The costs of regulation**

Even when there are substantial direct benefits from competition between train operators, care should be exercised in regulating access to track because regulation itself may also impose significant costs, particularly if it is administered poorly, or applied too broadly.

Regulation can impose significant administrative and compliance costs on access providers, train operators and regulators. For example, the regulated access provider must devote resources to supplying the regulator with information, and the regulator must in turn be able to independently assess and verify that information. Owners and operators can also spend significant resources lobbying the regulator which constitutes another, less transparent, cost.

Significant costs can also arise through regulatory failure since it is unlikely that access regulation would be perfectly constructed or administered, given imperfect information available about the market.

As ARTC noted:

> Regulators can deal with extremes of behaviour. Subtlety of market behaviour which actually does dictate end results, is something that a regulator will never capture until a long period of time of evidence which by that time the damage has really and truly been done. (trans., p. 572)

Regulation may diminish incentives for business to invest in infrastructure facilities. The negative impacts on investment are particularly important in the rail industry since the lack of suitable investment in rail infrastructure is a major factor limiting the industry's growth and future prospects.

Sources: trans., p. 572; IC 1995a; IC 1997b.

Several participants noted that existing access arrangements in some jurisdictions hindered industry performance because they were unworkable or inappropriately implemented. Rail 2000 noted that:

> … open access to the rail network, if this is the desired intent of governments, is simply just not working. This is either as a result of Claytons Access Regime being promulgated in some states or unnecessarily cumbersome regimes in others. (trans., pp. 3-4)

In cases where access regimes are not working, formal proceedings are often drawn out and can lead to appeals, causing significant costs, delays and uncertainty for both the track owners and train operators. Moreover, significant resources can be devoted to lobbying the government about changes to policy (boxes 8.3 and 8.4).

Reform to improve access to rail infrastructure has been slow. Current access arrangements are complex due to the multiplicity of regimes, especially on the interstate network, and the intricacies associated with each. These are likely to have imposed significant costs on industry participants.

8.4 Pricing and allocating train schedules

The availability, price and allocation of suitable train schedules is an important factor that can influence the ability of operators to enter the market and run viable train services. It is also important in ensuring that incumbent railways and new entrants are able to respond quickly to the changing needs of customers and compete effectively with other modes of transport.

Existing access regimes adopt a wide range of approaches to pricing and a number of innovative approaches have been proposed for the future. ARTC currently uses a system of posted prices on the parts of the interstate network it owns or manages and has proposed the use of auctions in the future, while many state-based regimes provide for prices based on commercial negotiation (and arbitration where necessary) for access to the state network (box **8.3**).

The various approaches to pricing can be grouped into three broad categories — posted prices, negotiated prices and auctioning mechanisms (box 8.5). Each provides for different levels of flexibility, certainty and transparency. In addition, each has different implications for the way that train schedules are allocated to operators. Posted prices do not provide a mechanism to allocate train schedules so they must be supplemented with other measures, such as allocation on an administrative basis, or by operators being able to swap or trade schedules in a 'secondary market'. In contrast, auctioning mechanisms determine the price and allocate train schedules simultaneously.

In principle, an efficient pricing and allocation system should set prices and allocate train schedules reflecting the opportunity cost of the train schedule to all segments across the entire network. If it does not:

- operators may not make the best use of existing capacity; and/or
- track owners may not invest appropriately in the track infrastructure given the demands for rail use.

Box 8.5 **Approaches to pricing train schedules**

Posted prices — 'Posted' prices are not negotiable and define exactly the prices, terms and conditions under which operators can gain access to the track.[a]

Negotiation — A 'negotiated' agreement reflects the prices, terms and conditions reached following commercial negotiations between the access provider and the train operator. In some cases the negotiated price is constrained by defined upper and lower bounds. Where capacity transfer arrangements are in place, negotiations may take place between existing or potential train operators and the current schedule holder.

Auctioning mechanisms — Potential operators bid for segments of track, train schedules or packages of train schedules and the access provider optimises the allocation of these subject to the size of the bids, their feasibility and the cost of service.

[a] Posted prices can be calculated in a number of ways including as a multipart tariff, using Ramsey principles, and using the efficient component-pricing rule (the Baumol-Willig rule).

Sources: Jones et al. 1998; Dodgson 1998; Freebairn 1998; Starkie 1993.

Posted prices

There is support for the use of posted prices in some rail markets. ARTC suggested that for the parts of the interstate network it owns or operates, it:

> … chose to have a pricing system which was openly published to all operators, so all operators operated off the same pricing schedule which was available to anybody that wanted to see it … What that did was it gave the operators confidence in their competitive position, as opposed to other people's competitive position and really made it a level playing field which people could compete on. (trans., p. 568)

While SCT suggested that:

> … to be effective an access pricing regime should have transparency as to rates, although we do not necessarily require there to be transparency of track management costs and track maintenance costs. (sub. 37, p. 2)

In addition, the House of Representatives Standing Committee on Communications, Transport and Microeconomic Reform (HORSCCTMR) suggested that, at least on the interstate network, posted prices by track segment were appropriate (HORSCCTMR 1998b).

In evidence presented to the HORSCCTMR inquiry both the Queensland Mining Council and the NSW Minerals Council argued that access regimes should include published 'reference' prices, although both allow for some limited negotiation around the published price.

While posted prices may be administratively simple and provide greater certainty to operators regarding the terms and conditions under which they can gain access to the network, they have drawbacks which in part reflect imperfect information about the market. These in turn may prevent the efficient allocation of schedules and entrench monopoly positions if an existing operator is given a schedule for a long period.

Posted prices designed to reflect the different valuations placed by users on the track may require detailed information regarding the responsiveness of operators to changes in price which may be difficult to obtain given the small number of operators in most markets. As Easton noted:

> Put simply, the rail supplier is not competent to assess relative demand elasticities nor review changes in those relativities. (Easton 1996, p. 155)

In response to these complications, there can be a tendency for access providers to rely on arbitrary, administrative mechanisms in setting prices to attempt to capture differences in valuations of the track. Posted prices may rely on 'first come-first served' arrangements and 'grandfathering' of existing schedules. It is unlikely that such systems will allocate train schedules efficiently, since they do not reflect the value that new or different operators place on the schedules. Rather it is more likely that such systems will entrench current operators' positions in the market. Patrick noted that in negotiating train paths and rail access on the interstate network during 1996-97:

> … existing government rail operators obviously occupied the best train paths, leaving paths that were slow (long transit time) and sub-optimum in departure and arrival times. (sub. 63, p. 3)

The efficiency of pricing and allocating train schedules across networks could be improved under this system if supplemented by market-based arrangements. Posted prices could be used in conjunction with a secondary market in which operators trade the right of gaining access to track segments (capacity trading mechanisms are discussed below). This would ensure that the track segment would be acquired by the operator who values it the most.

Negotiated prices

Commercial negotiations (with arbitration if necessary) are currently used in most state-based regimes. When prices are set through commercial negotiation, operators

who provide different services can negotiate terms and conditions according to the value that they place on the track.[7]

The ability to charge different access prices to different users enables access providers to put in place incentives to encourage the effective use of track infrastructure. This may not be possible under a less flexible posted prices approach.

However, commercially negotiated outcomes between parties may be made at the expense of efficiency (IC 1997b). In the first instance the track owner could abuse its market power and charge access prices that are too high — above stand alone cost (the total cost of supplying the infrastructure) — especially when the operator is in a weak bargaining position and has no other transport alternatives.

Alternatively, when there are significant monopoly profits available in the rail market (in both above and below track operations), the track owner and train operator may agree on terms and conditions that promote monopoly profits rather than economic efficiency.[8] As King and Maddock noted:

> … firms will negotiate access prices and conditions that suit them, not those which increase social well being … (King and Maddock 1996, p. 97)

In this case negotiation between the track owner and train operator will involve:

> … trying to seize as large a share of monopoly profits as possible, with no party interested in competition that may benefit consumers but reduce profits. (King 1997, p. 276)

In addition, commercial negotiations may occur irregularly and may result in contractual arrangements for specific train schedules over different lengths of time. Consequently it may be difficult to negotiate with all train operators over all schedules and segments of the network simultaneously, in order to improve the efficiency over the entire network.

Market mechanisms

An important element of competition between train operators is competition for schedules (chapter 6). However, current access arrangements limit this form of competition.

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[7] Under this pricing regime, operators whose derived demand for the service is not responsive to price changes would be charged higher prices while those operators who are quite price responsive would be charged lower prices.

[8] This is not a likely problem in most rail markets in Australia as very few make significant monopoly profits.

For the interstate network, the ARTC's 'one stop shop' role appears limited to allocating excess capacity to new entrants. The Rail Access Corporation (RAC) noted that ARTC and itself:

> … each have rights to sell our uncommitted capacity, ARTC for interstate purposes or RAC for intrastate purposes, and there will be an iterative process in the agreement under which we negotiate and agree those paths in a practical sense. (trans., p. 1118)

FreightCorp noted that in relation to current approaches:

> The issue of allocation of train paths has not been adequately dealt with in any of the jurisdictions in which FreightCorp currently operates. The solution has generally been to allow existing users to retain their path allocations ('grandfathering'), with additional paths for new entrants fitted around these. (sub. DR123, p. 2)

FreightCorp then argued that:

> Grandfathering favours incumbents over new entrants. As the Commission recognises, in some circumstances this can be a deterrent to the growth of competition from new entrants … Grandfathering allocations leads to inefficient use of the infrastructure. As infrastructure owners are unable to amend the paths provided to existing users, new paths have to be scheduled around these. (sub. DR123, pp. 2,3)

Market-based mechanisms, such as auctioning and capacity transfer arrangements, can be used to promote competition between train operators for train schedules.

Auctioning mechanisms

Auctioning provides a market mechanism for the initial allocation of schedules to train operators. Although auctioning is not currently used in Australian rail markets, it has been proposed as a future option — especially in networks which are or become more congested as a result of new entry and increased activity. As the market for schedules develops, the pricing and allocation of schedules is likely to evolve from posted and negotiated prices to more market-based mechanisms.

The main advantages of auctioning models over the posted price and negotiated price approaches are that they:

- allow for greater flexibility in determining prices and conditions;
- may provide information on the highest value and best use of the track; and
- provide indicators of where investment in the track may be justified.

For example, in a well designed auction covering interstate operations, bidders would reveal the true valuation of their use of the track. In principle, this might be achieved by getting all train operators — both interstate and intrastate users of the interstate network — to bid simultaneously for individual train schedules they are

seeking.[9] This would include simultaneously assessing bids for both the use of the interstate track by both interstate and intrastate operators and identifying the operator which values particular schedules most highly.

The bids would include the necessary information for the market manager to be able to maximise the profit of the entire network by choosing the optimal mix of train schedules. Information required may include axle load, train speed, origin-destination and any stopover requirements.

The market manager could use a network optimising program that allocated train schedules subject to bid prices, the schedules being mutually exclusive and the bid price exceeding the cost of supplying the service. Bidders could submit a number of bids, each with different prices and train paths, to reflect their valuation of the alternative schedules they are prepared to purchase.

There could be spot pricing (through a bidding process and trading) or negotiation for the short term allocation of remaining schedules. The Commission has also considered these issues in relation to the pricing and allocation of airline slots (PC 1998b).

The market manager could also have a role in identifying and facilitating investment in the network. The market manager could disseminate data regarding network utilisation and identify areas where additional investment in the network may be justified (chapter 10).

Several participants were critical of proposals to auction train schedules. The practical difficulties of auctioning schedules was raised by Great Southern Railway. It noted that:

> … we think it will be difficult to devise a method for bidding for paths, given that different trains have different characteristics and so require different types of paths … To our knowledge, no country in the world has devised a working method for selling train paths by competitive bidding. (sub. DR95, p. 4)

NSW Government noted that establishing an auctioning mechanism would entail high set up and familiarisation costs.

[9] Train schedules here may be defined as a capacity to move a certain volume of freight within a specified period of time, rather than a rigid time schedule.

NRC (sub. DR117) acknowledged that in theory auctioning provides information on the value of paths by actual and potential users. However, it referred also to practical difficulties as powerful arguments against the auctioning approach. These included:

- that where there is a need for a new train path, the market will be such that it will be rare for more than one operator to be in a position to bid for the path;
- existing long term business arrangements and contracts would be disrupted leading to uncertainty; and
- strong interactions between time-paths on networks make it difficult coordinating auctions of a continuous path across a corridor.

The NSW Government also noted the difficulty with small numbers of potential bidders for some paths:

> … the benefits in terms of improved allocation of train paths and providing better incentives for investment in track would not be great, given the small number of bidders likely to be involved for any given bundle of train paths. (sub. DR128, p. 44)

In cases where there is only one operator seeking a new path, RAC argued that new paths could be accommodated with only modest investment in the network without the need to auction paths:

> To the extent that the market is not met, this reflects under investment in the network. The Sydney-Melbourne business provides a good example. Rail currently has somewhere in the order of 20% of this market. This market share is achieved with a single 1,500 metre train per day. Even in the unlikely event that rail was able to secure 100% of the market, this would still only represent five 1,500 metre trains per day. If the assumption is further tightened so that the entire market wanted to be serviced overnight, this would still only require that the 5 trains leave at half hour intervals. Such a scenario is readily achievable with modest investment in the infrastructure. (sub. DR102, pp. 22-23)

The need for greater certainty was raised as an objection to auctioning paths by several participants. RAC argued that one of its concerns with auctioning was:

> … that it may have a negative impact on the market. If a rail operator needs to invest time and resources in developing a market, it will only do so if it has reasonable certainty over its train path. Under an auctioning system there is a risk that operators will be discouraged from market development. (sub. DR102, p. 23)

Similarly, SCT argued:

> The provision of spot pricing, like auctioning, would give rise to a great deal of uncertainty in the market which in turn would not allow investment to take place in the rail industry … The use of spot pricing and auctioning techniques could … give rise to

> uncertainty insofar as the investment plans of another operator are concerned. (sub. DR100, p. 4)

The difficulty of auctioning a continuous path across a corridor is not to be understated. NRC argued that:

> There are strong inter-actions between time-paths on the network, both 'vertically' (between time-paths on the same track), and 'horizontally' (between time-paths on adjacent sections of track, which are administered by different access providers). The practical difficulties of coordinating auction of a continuous path across a whole corridor (eg Sydney-Perth) would make an auction impossible. (sub. DR117, p. 16)

Auctioning may also be inefficient. Large incumbent operators with 'deep pockets' could dominate the market by outbidding smaller or new operators. Although this may reflect efficient bidding (and therefore efficient outcomes), it may also reflect the abuse of market power (and therefore inefficient outcomes). SCT concurred:

> The Commission is quite correct in pointing out that auctioning may be an inefficient process because large operators could abuse their market power etc. (sub. DR100, p. 3)

The practical issues raised by participants present challenges to the development of a path auctioning system. However, they are not sufficient to rule out the concept. Appropriate design and implementation of an auctioning system can overcome many of these issues. An effective auctioning system will provide information on individual users valuation of train paths and facilitate the efficient development of the rail industry.

Arguments relating to uncertainty are not arguments against auctioning *per se*, but for train paths to be allocated for appropriate time periods and to provide protection for pre-existing contracts. ARTC noted that auctioning processes can be such that:

> … the time frames for which paths can be contracted can be quite flexible, subject to 'use it or lose it' provisions, enabling certainty of business to be established. Secondary trading of train paths also enables the owner of the path to enhance the returns available to the owner from a given path. (sub. DR97, p. 10)

The network manager responsible for the auctioning process would be required to trade off the individual operator's desire for certainty and longer term paths with the system wide efficiency gains from facilitating the possibility of new entry.

The practical problems associated with auctioning and allocating paths have yet to be resolved. However more powerful computer models currently being developed to allocate train paths may assist in overcoming some of these difficulties. (sub. DR103; sub. DR113).

Capacity transfer mechanisms

Capacity transfer mechanisms would permit the existing holders of train schedules to transfer or sell them to other railways (or possibly other organisations). Such mechanisms may facilitate the transfer, without payment, of schedules (a largely administrative approach) or encourage the development of markets for the sale of schedules at commercially negotiated prices. Either mechanism is more flexible, in terms of freeing up schedules for new entrants, than posted prices or negotiated pricing arrangements discussed above.

Capacity transfer mechanisms provide opportunities to 'free up' the allocation of train schedules. The NSW Minerals Council argued in favour of a market-based trading mechanism for schedules:

> The Council sees considerable scope for capacity trading and the ultimate development of secondary markets involving 'derivatives', to aid price discovery and transparency and serve as a competitive discipline on the monopoly seller of rail access. (sub. DR104, p. 6)

As well as path holders voluntarily trading excess requirements, capacity trading arrangements could contain 'use it or lose it' provisions. An operator could be required to surrender unused paths to the access provider or offer them for sale to other train operators. This would limit the ability of incumbents to restrict entry and competition by hoarding train paths.

A draft capacity transfer policy for inclusion in the NSW rail access regime was issued by the NSW Government for comment in June 1999 (box 8.6). It includes provisions for the transfer of access rights and the relinquishment of unused schedules to RAC.

The draft RAC policy appears to be based largely on administrative processes. Unused schedules are not sold by operators but are reallocated by RAC to operators in accordance with its established conditions for offering access. It is unclear whether the transfer of access rights between operators would involve payment.

The NSW Minerals Council expressed concern that elements of the draft RAC policy would inhibit the development of an effective market-based approach. In particular it noted limitations on who could trade capacity, the nature of access rights offered and the central role of RAC (as both broker and owner) (NSW Minerals Council, pers. comm., 26 July 1999).

Box 8.6 **Draft NSW capacity transfer policy**

The RAC has issued a draft capacity transfer policy to apply to the NSW rail network. The objective of the policy:

> … is to facilitate the optimum efficient utilisation of the NSW Rail Network by rail operators through the establishment of effective mechanisms for the transfer of access rights between operators. (RAC 1999, p. 2)

The three principles guiding the development of the policy state:

> a) that RAC have the power, where appropriate, to ensure that a rail operator does not retain the right to use timepaths that are not being utilised in circumstances when they can be allocated to another rail operator;
>
> b) where a rail operator is not utilising capacity and surrenders the unutilised capacity, and the access fees payable to RAC are not based on usage of the NSW Rail Network, it may be necessary to adjust the access fees; and
>
> c) where a rail operator seeks access to capacity that is already utilised by another rail operator, RAC will approach the other rail operator to seek to negotiate an amendment to its agreement so as to facilitate the rail operations of the prospective operator. (RAC 1999, p. 2)

RAC's role is to negotiate access rights and pro-actively facilitate the transfer of access rights between operators where there is agreement between the operators to do so.

Rail operators are free to voluntarily reduce their access rights at any time. To facilitate the relinquishment of unutilised access rights, RAC may include provisions in access agreements requiring the payment of path reservation fees or the relinquishment of access rights if they are not used for a reasonable time ('use it or lose it').

Operators are also free to transfer part or all of their access rights to another operator, provided the new operator accepts the characteristics associated with those rights. If the new operator wishes to change the characteristics of the access right (for example, seek a higher axleload) RAC is required to enter negotiations with the new operator to agree, if practical, to the changed characteristics.

In the case of disputes between RAC and existing or prospective operators these will be subject to the dispute resolution mechanisms contained in the relevant access agreement. These may include referral of disputes to IPART for arbitration.

Source: RAC (1999).

Market-based trading is preferred to administrative transfer arrangements to ensure schedules are obtained by operators who most value the use of the track.

It is not apparent that existing access regimes include market-based mechanisms for allocating and transferring schedules. The introduction of such mechanisms would be particularly relevant to the interstate network and main coal lines.

RECOMMENDATION 8.1

The pricing and allocation of train schedules should reflect the value that users place on the track. To encourage this, the Commonwealth Government should establish a process to investigate the feasibility of developing a market approach for allocating schedules or transferring capacity on the interstate network.

8.5 Costing methodology

There are a number of costing issues relating to the establishment of access prices. An otherwise well designed access regime may result in inefficient access prices if costing issues are addressed inappropriately. Some participants commented on the methods currently used to measure costs and the lack of transparency in determining and publishing costs. Similar concerns have been expressed by participants in the Commission's report *The Australian Black Coal Industry* (PC 1998a).

The methods of measuring the costs of capital in rail infrastructure vary widely with:

- the choices of the method of asset valuation (historical, deprival or other valuation methods); and
- the rate of return (nominal or real rates).

Valuation of assets

Rail transport entails large capital expenditure on assets, particularly track and rollingstock. Different approaches to asset valuation may significantly affect the value of assets and the estimation of costs.

Currently, the method of valuing assets differs across jurisdictions and ranges from deprival methods, to replacement costs and historical costs.

The choice of asset valuation method is a case by case decision and largely depends on the objectives for which the asset valuations are sought (CCNCO 1998). It also depends upon the assets to be valued. Easton argued that the:

> … method of valuation should be determined by the nature and characteristics of the asset, and certain other considerations … particularly in regard to the difficulty of assessing replacement value … (trans., p. 830)

In this section, asset valuation is considered from the perspective of setting prices for access to track infrastructure — where issues such as the valuation of 'once-off' assets including the provision of track corridors arise.

In the context of setting access prices, several participants argued that historical cost was the most appropriate form of asset valuation for government-owned railways. This is because historical values are more transparent and may be simpler to administer than other approaches, especially for long lived assets. Easton argued that with historical cost valuation:

> … there is no subjectivity involved, valuations are reliable in the sense that they represent actual expenditures and, as such, they are verifiable. For long life assets, including sunk capital, these are considered significant advantages [over other asset valuation methods] … Furthermore there is no need for time consuming and possibly costly procedures to arrive at alternative costs, which in most instances (for rail specific assets at least) involve subjective assumptions and even speculation. (Easton 1996, p. 93)

The characteristics of the assets are an important consideration. Easton has argued:

> I think there are some cases in which the nature of characteristics of the asset lends itself to a treatment of other than historical cost, but please not deprival value. (trans., p. 844)

King (1996) has also suggested that historical cost is, on balance, the more appropriate valuation method, arguing that it is easy to administer, transparent, less subjective than replacement cost, and provides adequate incentives for operation and investment.

However, the use of historical cost may pose additional problems, particularly in periods of inflation, technological change or changes in supply and demand conditions. The Steering Committee on National Performance Monitoring of Government Trading Enterprises (SCNPMGTE) suggested that in times of increasing prices, the use of historical cost is likely to result in:

- the understatement of the value of the assets;
- the understatement of expenses; and
- for commercial entities, the overstatement of profits and returns on assets (SCNPMGTE 1994).

In addition, in its draft guide to access undertakings the ACCC suggested that:

> Before accepting the historical cost approach to asset valuation as part of pricing principles included in an undertaking, the Commission will need to be satisfied that gold plating and over investment is not likely to occur. (ACCC 1997b, p. 41)

Other valuation methods may better capture the value of the economic services in the asset and so be more appropriate. IPART has suggested an alternative asset valuation methodology. IPART has recommended that a depreciated optimised replacement cost (DORC) methodology be used for valuing RAC assets when setting ceiling prices under the NSW access regime.[10] IPART stated that:

> DORC is the replacement cost of an 'optimised' system, less accumulated depreciation. An optimised system is a re-configured system using modern technology designed to serve the current load with current technology, with some allowances for growth. This method excludes any unused or under utilised assets and allows for potential cost savings that may have resulted from technological improvement. (IPART 1999a, p. 28).

However, there is not universal support for the DORC valuation methodology. The NSW Minerals Council noted that:

> The theoretical appeal of the DORC approach is undeniable. However its practical application can present problems on some occasions. (sub. DR104, p. 8)

It also argued that the DORC approach requires an:

> … exhaustive and computationally unwieldy 'optimisation' process to establish the appropriate railway configuration for each user or group of users. (sub. DR104, p. 8)

Similarly, the difficulty of specifying the optimal configuration was highlighted by Westrail:

> … DORC can lead to protracted negotiations as to what is the optimum configuration. The benefit of DORC, which is principally alleged to be avoiding 'gold plating' or over investment in the infrastructure can be achieved in an access regime requiring demonstration from the owner that the infrastructure is required for the task. (sub. DR107, p. 7)

Easton argued that the nature of the assets (especially asset life) is important in assessing the validity of applying the DORC methodology:

> The DORC approach would make more sense, and I use that word deliberately, if renewals of like by like are a capital charge … [but] What's the justification for valuing at replacement value if the assets or substantial slabs of it never have to be replaced? (trans., p. 832)

There is no single asset valuation methodology which is clearly preferred in all situations. The use for which the valuation is sought and the characteristics of the assets, especially their frequency of replacement, influence the selection of an appropriate valuation methodology.

[10] By virtue of Schedule 3 (iv) of the NSW rail access regime, this recommendation and that relating to the maximum rate of return took effect without further action on the sixtieth day after the IPART report was presented to the Premier of New South Wales.

The appropriate asset valuation methodology should be determined on a case by case basis, depending upon the purpose for which the valuation is required and the characteristics of the assets.

Rate of return

Several participants argued that existing access regimes applied non-commercial rates of return to assets which inflated asset prices. The NSW access regime used nominal rates of return in setting a ceiling for access charges to rail infrastructure. The ceiling rate of return was 14 per cent nominal post-tax on the replacement value of assets. Many participants commented that this was too high, given the sorts of risks associated with the business.

IPART (1999c) recommended that the maximum rate of return for the NSW regime be set at a pre-tax real return of 8 per cent. This change was automatically incorporated into the NSW rail regime. IPART also recommended that the NSW Government consider creating a process for revising the maximum rate of return at periodic intervals, indicating that three yearly revisions were appropriate (IPART 1999c).

Participants noted that the rate of return recommended by IPART was not necessarily applicable to all rail networks, and may not be sufficient to attract private sector investment. ARTC noted that IPART's recommendation was:

> … relative to a set of circumstances presented to a particular market, so I wouldn't want that sort of thing to become a kind of general rule framework … but in New South Wales the Commission was looking at an area that had a sunken investment, had a high-yield return base on it, and was a very secure risk market … I think you would get a different decision in different locations, so I don't think, if that is a general rule, it would necessarily flow on. (trans., p. 819)

The rate of return which infrastructure owners are permitted to earn on assets can affect the access charges faced by train operators. Higher permitted rates of return are likely to lead to higher access charges. However, if returns are set too low investment may be inhibited. Regulators will need to continually review rate of return policy.

8.6 Complexity of operating on the interstate network

Participants noted the complexity of operating on the interstate network. Difficulties arise because this network is owned or managed by several authorities, each operating under different access regimes which reflect the nature of the markets that

operate within state boundaries. This creates uncertainty and adds to the cost of rail operators who may wish to buy slots from origin to destination, not just from border to border.

In order to reduce the complexity ARTC commenced operations on 1 July 1998 to provide a 'one stop shop' for access to the interstate network (box 8.7).

Box 8.7 **The Australian Rail Track Corporation**

The ARTC was incorporated in February 1998 and commenced operations on 1 July 1998. It is fully owned by the Commonwealth Government through shareholder representatives of the Departments of Transport and Regional Services, and Finance and Administration.

It was established to provide a 'one stop shop' for national rail operators, and the States have entered negotiations with ARTC over access arrangements.

The main purpose of ARTC is to 'facilitate a commercially viable Australian rail industry through the introduction of new infrastructure and access arrangements, contributing to an efficient national transport system' (ARTC 1998, p. 1). In order to do this, ARTC has responsibility for management of access and track maintenance in South Australia (and parts of New South Wales, Western Australia and the Northern Territory) as track owner and in Victoria as track manager via a lease agreement. ARTC is available to act as a retail broker for access in Queensland, New South Wales and Western Australia.

Sources: ARTC 1998; sub. 74; sub. 76.

Currently ARTC's terms and conditions only apply to the track that it owns or manages. Both New South Wales and Western Australia have indicated that they will not allow ARTC to own sections of the interstate track within their respective jurisdictions (HORSCCTMR 1998b). Instead, ARTC must negotiate access and exclusive agency rights with these jurisdictions and with Queensland (trans., p. 570). ARTC is currently negotiating draft wholesale agreements with these jurisdictions and has indicated that the negotiations are proceeding to an advanced stage (sub. DR97 and appendix F).

NRC (sub. DR117) argued that the 'one stop shop' approach would create an additional layer through which operators had to seek access rather than dealing directly with the access provider. NRC envisaged problems with this approach including:

- pricing being shrouded in two layers of secrecy and confidentiality;
- delays in negotiating train paths through intermediaries;

- provisions for indemnities and warranties would be more complex — with the ability of ARTC to enforce performance warranties on behalf of the access user being questionable; and
- increased complexity in the day to day management of train paths by interposing ARTC.

In relation to the last problem, Affleck (NRC) argued:

> Day to day management of train paths … would be complicated by interposing a middleman. It would be too easy for the ultimate access provider to 'pass the buck' to the middleman, which in spite of its best intentions would be unable to address the detailed operational issues which arise every day. (Affleck 1999, p. 11)

These problems led NRC to conclude:

> For all of the above difficulties and others, National Rail and other rail operators have a strong preference to continue to deal directly with the real access providers, both when negotiating contracts for access and when managing the on-going use of access. The problems in dealing with several entities to obtain access are minor compared with those listed above. (sub. DR117, p. 17)

However, while a large incumbent operator such as NRC may be able to deal directly with multiple access providers, this is likely to be more difficult and costly for new entrants or smaller operators. The complexity of existing arrangements can hinder their ability to respond quickly to commercial opportunities — further entrenching the position of incumbents.

The creation of a market manager on the interstate network (chapters 6 and 10) would overcome any problems relating to the day to day operation of the system by vesting this responsibility within one organisation.

In the meantime, ARTC has encouraged discussions and cooperation between jurisdictions. As part of these discussions ARTC is developing an industry code to provide a common framework and set of rules for access to the interstate network which would apply regardless of whether it owns or manages the track.