

INDUSTRY COMMISSION
SUBMISSION TO THE
NATIONAL COMPETITION
COUNCIL ON SPECIALIZED
CONTAINER TRANSPORT'S
DECLARATION APPLICATION

May 1997

© Commonwealth of Australia 1997

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, this work may be reproduced in whole or in part for study or training purposes, subject to the inclusion of an acknowledgment of the source. Reproduction for commercial usage or sale requires prior written permission from the Australian Government Publishing Service. Requests and inquiries concerning reproduction and rights should be addressed to the Manager, Commonwealth Information Services, Australian Government Publishing Service, GPO Box 84, Canberra, ACT, 2601.

ISBN 0 644 39705 5

Industry Commission
Level 3 Nature Conservation House
Cnr Emu Bank and Benjamin Way
Belconnen ACT 2616

Copies of this submission are available from Margaret DiMichiel by telephone on (06) 240 3214 or fax (06) 240 3311.

Forming the Productivity Commission

The Industry Commission, the former Bureau of Industry Economics and the Economic Planning Advisory Commission have amalgamated on an administrative basis to prepare for the formation of the Productivity Commission. Legislation formally establishing the new Commission is before Parliament.

CONTENTS

	Page
ABBREVIATIONS	iii
SUMMARY	v
1 INTRODUCTION	1
1.1 Background	2
1.2 SCT's declaration application	5
1.3 Criteria for declaration	6
1.4 Structure of this submission	7
2 ESSENTIAL FACILITY CONSIDERATIONS	9
2.1 Natural monopoly	10
2.2 Competition in related markets	12
2.2.1 The bulk freight market	17
2.2.2 The non-bulk freight market	19
3 THE NSW RAIL ACCESS REGIME	25
3.1 SCT's concerns	25
3.2 Some pricing issues raised by SCT	26
3.2.1 Inter-network access price differences	27
3.2.2 Infrastructure pricing	27
3.3 Rail and road equity issues	31
3.4 Facilitating access through commercial negotiation	34
3.4.1 Negotiation under the NSW Code	35
3.5 The Code's coal pricing principles and SCT's application	40
APPENDIX A: FREIGHT TRANSPORT — SOME MODAL CHARACTERISTICS	43
REFERENCES	47

LIST OF BOXES, FIGURES AND TABLES

Box 1.1	Important aspects of the RAC's operating environment	3
Box 2.1	Some potential costs arising from mandating access to "non-essential facilities" under the National Regime	13
Box 2.2	Competition in the North American non-bulk freight market	20
Box 3.1	Some sources of differences in railway track costs	28
Box 3.2	CSOs and the RAC	39
Box 3.3	Coal Rail Freight Rates and Mineral Royalties	42
Figure 2.1	Comparative rail and road door-to-door freight rates, 1994	22
Figure A1	International comparisons of unstandardised line haul rail general freight rates, 1993-94	45
Table 1.1	The NSW Code — Access Agreements with the RAC	5
Table 2.1	Quarterly Freight Movements by mode, by type and by freight corridor ('000 tonnes)	16
Table 3.1	Alternative road user charges and road expenditures, by vehicle class (\$million/year)	33
Table A1	Published air freight rates for general shipments of less than 45 kg, December 1993	44

ABBREVIATIONS

ACCC	Australian Competition & Consumer Commission
ARA	Australian Rail Authority
BIE	Bureau of Industry Economics
BTCE	Bureau of Transport and Communications Economics
CPA	Competition Principles Agreement
CSOs	Community service obligations
FreightCorp	Freight Rail Corporation of New South Wales
IC	Industry Commission
ISC	Inter-State Commission
IPART	Independent Pricing and Regulatory Tribunal
LCL	Less than a car load
NCC	National Competition Council
NRC	National Rail Corporation
NRTC	National Road Transport Commission
NSW	New South Wales
RAC	Rail Access Corporation of New South Wales
RSA	Railway Services Authority
SCI	Statement of Corporate Intent
SCT	Specialized Container Transport
SOC	State Owned Corporation
SRA	State Rail Authority of New South Wales
TPA	Trade Practices Act

SUMMARY

This submission discusses a number of issues relevant to the National Competition Council's (NCC) consideration of Specialized Container Transport's (SCT) application for declaration of the Sydney—Broken Hill railway track service.

The Sydney—Broken Hill railway track service is provided by the recently formed government owned Rail Access Corporation (RAC) of New South Wales (NSW). Third party access to this service is covered by the NSW Rail Access Regime (hereafter the NSW Code). SCT — which seeks access to provide an inter-state rail service between Sydney and Perth — claims that the NSW Code is not effective.

The NCC is required to assess SCT's application and make a recommendation to the NSW Premier. Before making a recommendation, the NCC must be satisfied that declaration would satisfy criteria set down in Part IIIA of the Trade Practices Act (TPA).

This submission does not canvas all issues relevant to the NCC's considerations. Hence, it does not conclude whether or not the services which are the subject of SCT's application should be declared. It does, however, seek to provide some insights to assist the NCC's declaration assessment — mainly in relation to:

- natural monopoly considerations;
- the affect of access on competition in related markets; and
- pricing structures.

The Commission believes that many of these issues will also be relevant to other applications for access to railway infrastructure.

Natural monopoly

In practice, it is difficult to establish empirically the existence of a natural monopoly. However, the Sydney—Broken Hill rail track, along with NSW railway track network as a whole, has a number of characteristics which can be associated with a natural monopoly, including:

- substantial fixed costs and low variable costs;

- the capacity to carry significantly more rail traffic (ie much of the track network has excess capacity); and
- synergies (ie economies of scope) in providing rail services to different rail operators (eg passenger and freight).

These characteristics suggest there is some *prima facie* evidence to support a claim that, in the provision of Sydney—Broken Hill railway track services, the rail infrastructure covered by SCT’s application is a natural monopoly.

Access to railway tracks and competition

The Commission has explored how access to the Sydney—Broken Hill railway track service might affect competition for the transport of bulk and non-bulk (inter-state and intra-state) freight.

There are currently only two operators providing *rail* freight transportation services in NSW — the government owned National Rail Corporation (NRC) (inter-state) and the NSW government owned FreightCorp (intra-state). Access to the Sydney—Broken Hill railway track service could expose the NRC and FreightCorp to competition from new rail operators — such as SCT.

The benefits of this additional competition depend significantly on the strength of the competition from other freight transport modes (eg air, sea and road). At present, competitive pressures vary considerably between and within the bulk freight (ie high volume ‘unpacked’ commodities and minerals) and non-bulk freight (ie all other freight) markets (section 2.2).

The available data, although limited, indicate that, currently, the volume of bulk freight moved between Sydney and Perth is very low, with virtually all carried by sea. In contrast, there appear to be few viable alternatives to rail for the transportation of bulk freight in the Sydney—Broken Hill transport corridor. In these circumstances, mandating access is more likely to promote competition in the transport of bulk freight in the Sydney—Broken Hill transport corridor than between Sydney and Perth. The Commission has not been able to gauge the potential significance of this because of a lack of data on the level of intra-state bulk freight transported in this corridor.

In contrast to bulk freight, there is a considerable volume of non-bulk freight transported between Sydney and Perth.¹ However, there is already vigorous competition between transport modes for much of the non-bulk freight task

¹ Data on intra-state volumes of non-bulk freight carried in the Sydney-Broken Hill corridor are not available.

(inter-state and intra-state). This suggests that access to the Sydney—Broken Hill railway track may not substantially increase competition for most non-bulk freight. This is not to deny that access may promote a substantial increase in competition for *some* specialised non-bulk freight which is well suited to transport by rail. Reliable estimates of the current size of this specialised market are not available.

Price discrimination and access negotiations

Price discrimination allows a utility with natural monopoly characteristics to efficiently recover costs (operating and capital) without significantly discouraging the use of the infrastructure. This can result in different access prices for individual users (section 3.2).

Under the NSW Code, the RAC has the flexibility to discriminate between users and negotiate different access prices. However, SCT claims that this flexibility has undermined its efforts to negotiate access on a basis that would enable it to compete in the freight transport market.

While flexibility can facilitate the implementation of efficient pricing structures, there is the danger that it will support monopoly behaviour. In this context, the Commission has some concerns that the pricing flexibility available to the RAC under the Code may not be conducive to “efficient” negotiation outcomes (section 3.4):

- the financial caps established in the Code are very broad and the RAC has considerable pricing flexibility to set prices within those caps without the “oversight” of an independent regulator;
- the Code does not appear to explicitly incorporate a mechanism designed to ensure that the RAC pursues practices to minimise costs and negotiate prices based on efficient costs; and
- as the RAC appears to be operating well below the financial caps imposed by the Code, there may be few constraints on the RAC’s ability to pursue monopoly strategies on many lines.

In examining these issues, other factors need to be considered, including the role of:

- inter-modal competition in reducing the scope for the RAC to pursue monopoly strategies;

- administrative mechanisms, such as the Statement of Corporate Intent process required under the NSW State Owned Corporations Act, in creating pressures for the RAC to perform efficiently; and
- arbitration to effectively address the potential monopoly issues identified.

Implications of wider industry reform

The Commission understands that many of the government related costs and revenues (eg CSO arrangements, capital structure) associated with the wider NSW rail industry reform program are not fully resolved. The resolution of these matters is a transitional issue. Nevertheless, while these issues remain unresolved, the RAC does not have full information about its costs and revenues and, as a result, cannot have an appropriate basis for negotiating access. The sound resolution of these issues is necessary in order to improve the prospect of successful access negotiations — irrespective of whether the NSW rail network is subject to the NSW Code or the National Access Regime (section 3.4).

These outstanding reform issues, coupled with many of the unavoidable uncertainties associated with the introduction and operation of access arrangements, point to a need for the incorporation of monitoring and review processes for any new access regimes.

1 INTRODUCTION

In February 1997, Specialized Container Transport (SCT) made an application to the National Competition Council (NCC) seeking a declaration recommendation for the Sydney—Broken Hill railway track service. This service is provided by the recently formed Rail Access Corporation (RAC) of New South Wales. A third party access regime to the NSW rail network managed by the RAC has been in place since August 1996. SCT claims that the NSW Rail Access Regime (hereafter the NSW Code) is not effective and that the service meets the other threshold tests for declaration. The NCC is required to assess SCT's application and make a recommendation to the NSW Premier.

In this submission, the Commission discusses a number of issues relevant to the NCC's consideration of SCT's application. Access issues have also been discussed in a number of other Commission publications (IC 1995, 1997a, 1997b).

The Commission believes that many issues discussed in this submission will also be relevant to other railway access considerations. These include:

- the natural monopoly characteristics of the rail track network;
- the complexities of assessing competition prospects within the rail industry and between the rail industry and other transport modes;
- the tensions between the potential efficiency benefits of allowing a rail network business to price discriminate and the scope price discrimination provides for monopoly behaviour; and
- the interaction between the implementation of an effective access regime and wider industry reforms.

The issues discussed in the submission are complex and in many instances the answers are not clear cut. It is likely that the appropriate approach to particular issues will become clearer with time, as access arrangements come into force and as new applications for access are dealt with by the NCC and the Australian Competition and Consumer Commission (ACCC). For this reason, the views expressed in this submission should be considered as preliminary.

This introductory chapter provides background information on the RAC, SCT's application and the factors the NCC is required to consider under Part IIIA of the Trade Practices Act (TPA) in assessing the application.

1.1 Background

In July 1996, the NSW Government announced major changes to the structure and operation of the State's rail industry. The vertically integrated State Rail Authority, which was responsible for almost all aspects of the State's rail industry, was separated into four separate government owned entities:

- the Rail Access Corporation (RAC), responsible for managing the track network and providing access to users on a commercial basis (see Box 1.1);
- the Freight Rail Corporation (FreightCorp), a commercial freight train operator;
- the Railway Services Authority (RSA), which supplies rail infrastructure and rolling stock goods and services (including maintenance, construction and repairs to the railway industry in general); and
- a reformed State Rail Authority (SRA), primarily responsible for passenger train operations, made up of CityRail, Countrylink and a passenger rolling stock maintenance group.

The RAC

The RAC has been established as a government business that owns, and is responsible for, the maintenance and sale of access to all publicly owned rail infrastructure facilities.¹ In managing these rail infrastructure facilities, the Government expects that the RAC will behave commercially — operating as efficiently and profitably as possible. While the RAC has considerable flexibility in pursuing its commercial objectives, it must negotiate access arrangements within the parameters outlined under the NSW Code. Further details regarding important aspects of the RAC's operating environment are provided in Box 1.1.

The rail infrastructure network managed by the RAC is used by rail operators to provide commercial and/or non-commercial rail transport services. Although they have a commercial focus, both the SRA and FreightCorp provide “non-commercial” rail services. These community service obligations (CSOs) are provided at the direction of the NSW Government (eg certain passenger services provided by CityRail and Countrylink).

¹ Rail infrastructure facilities have been defined to include railway track and supporting structures as well as signalling systems, seaboard coal terminals, overhead electrical power supply systems and trackside fencing.

Box 1.1: Important aspects of the RAC's operating environment

The RAC has been established as a statutory state owned corporation under the NSW *State Owned Corporations Act 1989* (SOC Act). This Act imposes accountability and reporting arrangements on the RAC, as well as measures to ensure that it operates in a competitively neutral environment. The Act establishes a commercial relationship between the RAC and the Government and specifies, in broad terms, the RAC's commercial objective (section 20E(1)(a)):

... to be a successful business and, to this end:

- (i) to operate at least as efficiently as any comparable businesses, and
- (ii) to maximise the net worth of the State's investment in the SOC ...

This commercial objective is reproduced in the Transport Administration Act 1988 (as amended) (section 19D(1)(c)). This Act also specifies the RAC's core functions (sections 19D and 19E):

- to hold, manage and establish rail infrastructure facilities on behalf of the state; and
- to provide access to existing and new passenger and freight rail services. In providing access, the RAC must, in a manner consistent with the NSW Rail Access Regime (see below): maintain an access pricing policy; compile a master timetable for allocating train paths; establish systems to efficiently and impartially allocate paths; and apply standards for prioritising train path allocation and resolution of conflicts over track use.

The RAC's functions do not include the management of other rail related infrastructure such as stations, freight depots and rolling stock maintenance facilities. Moreover, the RAC is prohibited from running passenger or freight train services.

The NSW Rail Access Regime

The NSW Rail Access Regime (hereafter the NSW Code) came into effect in August 1996. The NSW Code outlines the rights and obligations of the RAC and train operators seeking access to the NSW railway track network. It specifies: the nature and scope of negotiations; the pricing principles to be applied; and the broad nature of access agreements. Agreements under the Code must be registered with the NSW Independent Pricing and Regulatory Tribunal (IPART). Where agreement cannot be reached, IPART can act as an arbitrator to resolve a dispute.

Under the National Access Regime arrangements, a state or territory Government can request the NCC to recommend to the Commonwealth Treasurer that an access regime is effective. If the Council makes such a recommendation, and the Treasurer accepts the recommendation, the regime is "certified" as "effective". Where an "effective" regime exists, the terms and conditions of access are exclusively governed by that regime rather than the National Access Regime. The NSW Government has not applied to have the NSW Code "certified".

The NSW Government is proposing to directly fund rail operators for the cost of CSO services that it requires them to provide (Langton 1996). These arrangements should enable operators such as the SRA and FreightCorp to pay the RAC for access to the rail network. Notwithstanding these arrangements, there are components of the RAC's rail network (eg specific lines) that may not be commercially viable. The RAC is not able to wind down and eventually close non-commercial lines without approval from the NSW Parliament. Where the Government requires that such lines are maintained, it will only require the RAC to "break even". On "commercial" lines, the RAC is expected to achieve an appropriate commercial return and pay dividends to the NSW Government.

In pursuing its commercial objectives, the newly formed RAC is expected to make cost savings by operating more efficiently. It is also expected to encourage and facilitate greater use of the rail network by existing and/or new freight and non-freight rail operators. With many components of the rail network managed by the RAC being under-utilised,² the potential scope for more rail traffic is likely to be considerable.

Nevertheless, the terms and conditions of access offered by the RAC under the Code must be acceptable to rail operators if greater use of the network is to be achieved. Like the RAC, current and prospective rail operators (including the Government owned operators FreightCorp and the SRA) will be striving to achieve satisfactory commercial results. To do so, these rail operators must provide a rail transport service that meets the needs (price and non-price factors such as reliability) of their clients. If these clients are unhappy with the rail transport service offered, they may, depending on the nature of the transport task, explore the option of using alternate transport modes (eg road, air and sea).

To date the RAC has been successful in negotiating three access agreements under the NSW Code (Table 1.1). All three agreements are with government owned businesses that had access to the track prior to the introduction of the NSW Code. Two of these agreements are with the new rail businesses formed when the NSW Government separated the former SRA's rail operations from track operations. The third agreement is with the National Rail Corporation (NRC).³ No details are available on the access terms and conditions associated

² In the second reading speech of the *Transport Administration Amendment (Rail Corporatisation and Restructuring) Bill 1996*, the NSW Minister for Transport said there is ample capacity for both passenger services and freight operators in most parts of the RAC's network. The Minister also noted that, where freight is a significant activity, separate infrastructure is often provided.

³ The NRC was established in 1991–92. It took over the functions and assets of five mainland Governments' rail authorities where they related to interstate freight. The

with these agreements and it is not known whether all the key elements of these arrangements have been resolved. Indeed, while the NRC access agreement commenced in June 1996, the level of charges associated with the NRC agreement were not finalised until March 1997. This resolution followed some initial arbitration discussions with the Independent Pricing and Regulatory Tribunal (IPART) of New South Wales.

Table 1.1: The NSW Code — Access Agreements with the RAC

<i>Access seeker</i>	<i>Service Provided</i>	<i>Agreement Date</i>
Freight Rail Corporation	Control and management of access	28 June 1996
National Rail Corporation	Control and management of access	1 July 1996
State Rail Authority	Control and management of access	15 July 1996

Source: IPART Access Agreement Register.

1.2 SCT's declaration application

SCT is a freight forwarder specialising in warehousing, distribution and inter-state freight. The company has warehousing facilities in Brisbane, Sydney, Melbourne, Adelaide and Perth. In 1995, SCT became the first private operator of inter-state freight trains when it commenced operations on the Melbourne—Perth route. The main reason for SCT's move into the inter-state freight train business was the NRC's withdrawal of freight van services on the eastern states—Perth route.

SCT began negotiations for access to the Sydney—Broken Hill railway track service in September 1995. These negotiations commenced with Railnet (part of the former SRA) and continued with the RAC. SCT has been attempting to obtain an access arrangement that would enable it to use the services of the standard gauge railway and associated facilities to transit between Sydney and Broken Hill on the network via Lithgow. As a back up to this preferred service, the company also requested an option to access the Sydney—Cootamundra—Parkes—Broken Hill route. Access to either one of these services would allow SCT to provide a two-way transcontinental rail freight service between Sydney and Perth.

Corporation, which commenced operations in 1993, provides a 'one-stop shop' for interstate rail freight customers and is intended to act as a catalyst for wider microeconomic reform of rail transport (NRC 1996).

SCT and the RAC have been unable to come to an agreement on an access arrangement. Inability to arrive at an agreed access price has been a major stumbling block to the negotiations. SCT believes that a realistic price for access to the RAC track would have regard to the access prices it pays authorities on the Melbourne—Perth route. SCT claims that the prices offered by the RAC under the NSW Code are some three to four times higher than these access prices.

In February 1997, SCT lodged a declaration application with the NCC under Section 44F of the TPA seeking declaration of the Sydney—Broken Hill railway track service.⁴ If the service is declared, it will be subject to access arrangements under the National Access Regime rather than the NSW Code. Once a service is declared, the infrastructure provider must negotiate with SCT and any other party wanting access to the declared service. If the negotiating parties cannot reach an agreement, arbitration may be sought from the ACCC.

In support of its application, SCT argues that access would promote rail-to-rail competition as it would provide an entirely new freight train service on the route. SCT also claims that access would promote inter modal competition, as its service would be additional to the road and sea services between Sydney and Perth. It also argues that it would be uneconomical for anyone to develop another railway track facility to provide the service, drawing attention to, among other things, the excess capacity on the existing track and the difficulty or impossibility of developing and financing another facility.

SCT acknowledges that the services it requires access to are already the subject of the NSW Code. However, the company believes that there is no evidence to support a claim that the NSW Rail Access Regime is effective.

1.3 Criteria for declaration

Prior to making any recommendation on SCT's application for declaration, Part IIIA, Section 44G(2) of the TPA requires the NCC to be satisfied that declaration would satisfy the following six criteria:

- (a) that access (or increased access) to the service would promote 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;

⁴ Any person, including a third party seeking access for themselves, an infrastructure owner or operator or a Minister, may apply for an infrastructure service to be declared.

(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.

(d) that access to the service can be provided without undue risk to human health or safety;

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

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

1.4 Structure of this submission

The remainder of this submission is structured as follows. Chapter two discusses issues relating to two key criteria tests that must be considered by the NCC in assessing SCT's declaration application:

- whether access would promote competition in at least one (other) market (44G(2)a); and
- whether it would be uneconomical for anyone to develop another facility (44G(2)b).

If these two criteria are satisfied, the infrastructure in question can be classified as an "essential facility". Chapter three discusses issues relevant to an assessment of whether the access arrangements provided under the NSW Code are effective.

2 ESSENTIAL FACILITY CONSIDERATIONS

There are two distinguishing features of the class of facility covered by Part IIIA of the Trade Practices Act (TPA). The first relates to monopoly characteristics that enable a single facility to satisfy all demand for the particular services provided by a facility at a lower cost than two or more facilities. The second is that the facility holds a strategic position in an industry, such that access to its service(s) is a prerequisite for effective competition in an upstream or downstream market. Infrastructure characterised by these two distinguishing features is often referred to as an “essential facility”.

In practice, two “tests” set out in the TPA establish whether a particular facility is “essential”:

- whether access would promote competition in at least one (other) market (44G(2)a); and
- whether it would be uneconomical for anyone to develop another facility (44G(2)b).¹

The consideration of these two tests raises a variety of complex issues. These issues include, but are not limited to: the extent to which the facility (in this case the Sydney—Broken Hill railway track) exhibits natural monopoly characteristics; the nature of the related market(s) in which competition may arise or increase as a result of access; and the magnitude of the change in competition which may be promoted by access to the particular service provided by the facility.

This chapter discusses a range of matters that are relevant to the NCC’s consideration of these issues in the context of SCT’s declaration application. The discussion may also be relevant to the NCC’s consideration of other railway track declaration or certification applications. Section 2.1 examines

¹ In its Draft Guide to Part IIIA, the NCC suggests that the test set down in Section 44G(2)(b) could be interpreted in a way that results in non-natural monopoly infrastructure being subject to a national access regime. The Commission acknowledges that the wording of the test when considered literally could be met by certain non-natural monopoly infrastructure. However, from a policy perspective, the Commission believes that mandatory access arrangements in a national access regime should *only* be applied to infrastructure with natural monopoly characteristics. This issue, and the reasoning behind the Commission’s view, was discussed in more detail in the Commission’s earlier submission to the NCC (IC 1997a).

whether the railway industry exhibits characteristics that are commonly associated with natural monopolies. Section 2.2 discusses the impact that access to the railway track infrastructure could have on competition in a related market.

2.1 Natural monopoly

Natural monopoly was an important concern underlying Australian governments' recent initiatives to allow third party access to certain infrastructure. This is because the presence of a natural monopoly operator can stifle moves to promote competition in related markets and the duplication of the monopoly infrastructure to counter this could be sub-optimal.

Determining whether a firm or an activity is a natural monopoly is an extremely complex task.² A natural monopoly exists when one firm can supply a market at a lower cost than two or more firms. In the single product case, strong economies of scale are sufficient for natural monopoly. However, a multi-product natural monopoly industry is generally characterised by economies of scale and/or scope. Clearly, what is crucial here is definition of the "product" or "service" and of the "market".

Put simply, economies of scale exist if the marginal costs of production are less than the average costs of production. Economies of scale are often associated with substantial fixed costs. Economies of scope exist if a firm using cost minimising technology can produce two or more goods at a lower cost than if different firms specialise to produce each good or service.

Natural monopoly and the rail industry

SCT has requested that the NCC recommend declaration of the Sydney—Broken Hill railway track service. In support of its declaration application, SCT argues that it would be manifestly uneconomic to develop a totally new railway track between Sydney and Broken Hill as there is ample capacity on the existing track. SCT points out that: railway construction and extension is extremely protracted and costly; there is no Australian precedent for two vertically integrated railways servicing the same center; and the development of another railway line could not be financed.

² Theoretically, the existence of a strictly subadditive cost function is sufficient to identify whether a firm is a natural monopoly. However, in practice, the information required to undertake this analysis is seldom available.

The arguments advanced by SCT imply that, in its view, in the provision of railway track services, the Sydney—Broken Hill railway track infrastructure is a natural monopoly. Indeed, SCT argues that the railway track network in question would satisfy Section 44(G)2b of the TPA.

Many economists consider that railways exhibit natural monopoly features. However, the Industry Commission's review of the natural monopoly literature in a 1991 inquiry into rail transport found there was no *conclusive* evidence of natural monopoly in the railway industry — ie the railway system *as a whole* covering track and rolling stock. Nonetheless, the review did find some support for the notion that, in the provision of railway track services, the *track* and *associated infrastructure* exhibit economies of scale and scope.

However, the likelihood of a particular railway track network exhibiting natural monopoly characteristics depends on features that can vary considerably between networks. For instance, the existence of economies of scale and scope reflect, *inter alia*, the available technology and the level of demand. Thus, the infrastructure used to provide rail transport services could exhibit natural monopoly characteristics in one location, but not in another location. For this reason, caution should be exercised when using overseas evidence to assess whether the railway track subject to SCT's application is a natural monopoly.

The Commission's view

The Commission recognises it is a difficult exercise to establish empirically the existence of a natural monopoly. Certainly, the railway track between Sydney and Broken Hill involves substantial fixed costs (many of which are sunk) and relatively low variable costs. In addition, there appears to be excess capacity which is, in part, due to the “lumpy” or indivisible nature of track investments.³ The ability of the track to provide multiple services (eg passenger and freight) also suggests the track exhibits economies of scope. These characteristics suggest there is some *prima facie* evidence to support a claim that, in the provision of Sydney—Broken Hill railway track services, the railway track infrastructure covered by SCT's application is a natural monopoly. However, if the service were to be defined more broadly, for example, as Sydney—Perth rail track services (where a competing track service via Melbourne exists), the conclusion may be different.

The presence of natural monopoly, in itself, does not establish the case for government intervention. As King and Maddock comment (1996, p.76):

³ The RAC has advised the Commission that, subject to detailed timetabling, there is spare capacity for SCT's proposed service.

... even where a necessary input to final production is the product or service of a facility with natural monopoly technology, it does not follow that access to that product or service is ‘essential’ to compete in a particular market. Natural monopoly technology may be a necessary condition for a facility to be deemed essential, but it is not sufficient.

In the case of railway track infrastructure, mandated access may not be justified if competing modes of transport provide sufficient competition in downstream markets. This competition would minimise the loss of economic efficiency normally associated with monopoly power. In this instance, the potential costs associated with applying the national access regime to facilities which are not “essential” could be avoided (Box 2.1). The broader issue of whether mandated access to the service of the Sydney—Broken Hill railway track will promote competition in a related market is considered in the following section.

2.2 Competition in related markets

Railway track services are an important input into the provision of rail transport services by rail operators. The transport services that can be supplied by rail operators are varied. At a relatively broad level, the services include: urban passenger; urban freight; and intra-state and inter-state, freight and passenger services.

The specific access services in SCT’s application relate only to freight. SCT requested that the NCC recommend declaration of the Sydney—Broken Hill railway track infrastructure to allow it to:

... run freight trains providing a two-way transcontinental service between Sydney and Perth ... the [main] facility in respect of which declaration is sought is the standard gauge railway along the Sydney, Lithgow, Parkes, Broken Hill route (SCT 1997a, p.2).

Railway track infrastructure can be used by rail operators to carry a variety of freight. Freight can be classified into two broad categories — bulk and non-bulk.⁴

Put simply, the bulk freight task can be classified as the transportation of high volume, ‘unpacked’ commodities and minerals which, broadly, take on the shape of the vessel in which they are carried. Bulk freight includes the transport

⁴ Note that some commodities can be transported in either bulk or non-bulk (packaged) forms (for example, cement, fertilisers and petroleum products). Moreover, some goods (for example, steel and logs) are classified differently by different rail systems.

Box 2.1: Some potential costs arising from mandating access to “non-essential facilities” under the National Regime

The National Access Regime created by Part IIIA of the Trade Practices Act relates to all sectors of the economy, not just the public sector. When proposing the establishment of a general access regime, the Hilmer Committee (1993, p.260) said that the:

... new access regime [will be] potentially applicable to any sector of the economy. In practice, however, such a regime should be applied sparingly, focussing on key sectors of strategic significance to the nation. Concerns over access to facilities that do not share these features should continue to be addressed under the general conduct rules.

The Committee argued that mandatory access was only appropriate for a natural monopoly facility which occupied a strategic position in an industry. In large part, the Committee’s views reflect an awareness that access regimes involve costs as well as benefits.

The potential costs associated with mandating access to a natural monopoly facility which is not essential to competition in another market include the disincentives such an action could create for investment. In this regard, the Hilmer Committee (1993, p.248) noted:

... 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.

Some of these potential costs are not always readily apparent. This point is particularly relevant in the context of the wider costs associated with setting a precedent. Precedents once set can have far reaching and unintended impacts on other firm’s investment incentives and on the efficient allocation of resources.

There is a risk that widening the range of infrastructure that could be potentially covered by Part IIIA will affect the value of existing assets and increase uncertainty about expected returns from future investments. In particular, perceptions of sovereign risk will be unnecessarily increased. This could arise if privately owned firms planning to invest in some specialised (but not essential) infrastructure are concerned that their property rights could be eroded. If this occurs, incentives to invest will be reduced. In addition, the requirement to negotiate and the threat of arbitration provides access seekers with the opportunity to secure more favourable conditions than otherwise. This could reduce investment returns and may undermine future investment.

For many infrastructure facilities, the economy wide costs of mandating access to non-essential facilities could outweigh any benefits. We should also be mindful that, in the case of non-essential infrastructure, the benefits can often be achieved with other pro-competitive instruments — such as deregulation and the TPA’s general conduct rules.

of: coal; grains; iron ore; other ores and minerals; concentrates; coke; limestone; gypsum; sand, gravel; stone; clinker; quarry products; most fertilisers; most petroleum products; most cement and most sugar.

The non-bulk task covers all other freight — general freight, express freight and specialist freight. Non-bulk freight includes: containers; livestock; timber; laden or unladen road trailers (with or without prime movers (piggyback)); paper; small volume freight (commonly classified as less than a car load (LCL));⁵ and motor vehicles (IC 1991 and BIE 1995a).

SCT's application does not specify the nature of the freight it wishes to carry by rail on the Sydney—Broken Hill route. However, information from SCT's recent submission to IPART (SCT 1997b) and from Mason (1995) suggests that SCT's *current* rail operations between Melbourne and Perth and its proposed operations between Sydney and Perth primarily involve the transport of freight on pallets using vans rather than containers. SCT believes that much of the freight it carries is not amenable to economical containerisation.⁶ If this is correct, it would appear that SCT is *currently* operating in a niche in the non-bulk segment of the inter-state freight market. However, the freight that could be transported via access to the Sydney—Broken Hill railway track could, in principle, be either bulk or non-bulk freight.

Access to the services of the Sydney—Broken Hill track for the transport of freight could potentially lead to SCT, or other rail operators, servicing inter-state long haul markets, such as Sydney—Perth, and Sydney—Adelaide. It could also lead to intra-state competition in the transport of freight on medium and shorter haul routes, that is, in the Sydney—Broken Hill transport corridor.

Freight transport options and the freight task

To varying degrees, rail freight operators face competition from a variety of other transport modes including road, sea and air. In many instances, there is competition within these modes.

The choice of transport mode depends on a number of factors relating to the nature of the freight (value, durability, fragility, size etc), the characteristics of

⁵ There has been a tendency in recent years for LCL freight to be increasingly carried by road. In 1995, the NRC ceased supplying rail services using the louvre vans commonly used for LCL freight.

⁶ This is because much of SCT's current freight task is transported on pallets. The physical dimensions of pallets means that they cannot completely fill a container. For example, a container may only be 1.9 pallets wide (Mason 1995).

the markets in which the freight is finally sold and various features of the different transport modes. As noted by Telford (1989, pp.2–5):

When a company or individual decides to move their product to a customer locally, inter-state, or even overseas they do not choose the mode of transport they choose a service. The criteria for choosing that service is made up of several significant factors:

- freight rates ...;
- reliability of service ...;
- transit times ...;
- security ...;
- product care ...;
- customer service and attention ...

The mode of transport is chosen to fit the service ...

There are often substantial differences in freight rates and service quality between the alternative transport modes (Appendix A). For example, on a comparative door-to-door basis, general (non-bulk) rail freight rates tend to be lower than trucking rates. On the other hand, air transport rates are relatively high and coastal shipping rates are relatively low. These differences, in part, are correlated with differences in the quality of service (reliability, timeliness, etc). For example, the freight rate differentials between road and rail have been attributed to differences in service quality. ‘Rail’s main problem is that freight trains run to schedule less frequently than do trucks’ (BIE 1995a, p.42).

Unfortunately, there is very little data available on the nature (eg modal shares, freight, volumes and types) of the freight task which could be serviced by access to the Sydney—Broken Hill railway track. The Australian Bureau of Statistics (ABS) has undertaken some experimental survey estimates of the volume and modal shares of freight transported between Sydney and Perth. However, due to the quality of the road transport data, this survey has been suspended. Nonetheless, these data represent the best available information on the freight task. Thus, the most recent inter modal data from this survey are presented in Table 2.1. Data on the freight task between Melbourne and Perth is also shown.

The ABS data show that the current movements of bulk freight between Sydney and Perth are very low and all carried by sea. On the other hand, there appears to be relatively substantial movements of non-bulk freight. Nonetheless, given the experimental nature of these data, they should only be treated as indicative of the Sydney—Perth freight which could be affected by access to the Sydney—Broken Hill railway track.

Table 2.1: Quarterly Freight Movements by mode, by type and by freight corridor^a
 ('000 tonnes)

	Bulk				Non-bulk				Total	
	Rail	Road	Sea	Air	Total	Rail	Road	Sea		Air
Sydney-Perth										
December 1994	0	0	0	0	0	87	93	13	2	195
March 1995	0	0	0	0	0	67	77	16	2	162
June 1995	0	0	0	0	0	82	44	14	2	142
September 1995	0	0	31	0	31	82	**	12	2	
Perth-Sydney										
December 1994	0	0	0	0	0	61	**	0	1	
March 1995	0	0	0	0	0	40	**	3	1	
June 1995	0	0	29	0	29	40	20	1	1	62
September 1995	0	0	0	0	0	48	**	1	1	
Melbourne-Perth										
December 1994	0	n.p.	0	0	0	91	113	14	2	220
March 1995	0	0	0	0	0	56	116	33	3	208
June 1995	0	0	0	0	0	96	60	20	2	178
September 1995	0	0	0	0	0	95	87	25	3	210
Perth-Melbourne										
December 1994	0	0	0	0	0	62	63	0	2	127
March 1995	0	0	21	0	21	35	**	3	2	
June 1995	0	0	0	0	0	47	24	1	2	74
September 1995	0	0	2	0	2	41	**	0	2	

(a) Estimates presented in bold had a relative standard error of between 25 per cent and 49.9 per cent. Where cells report ** the relative standard error for the data was higher than 49.9 per cent and is not available for publication.

n.p. data is not available for publication.

Source: ABS unpublished data.

Against this background, it is evident that the potential competition impacts of access to the rail services provided by the Sydney—Broken Hill railway track infrastructure depends on the related market being considered. The Commission has previously noted (IC 1995, 1997a) that it sees merits in taking a relatively broad view of “related markets” for such assessments.⁷ As a consequence, the Commission has explored how access to the Sydney—Broken Hill railway track service might affect competition for the transport of bulk and non-bulk (inter-state and intra-state) freight.

2.2.1 The bulk freight market

The bulk freight market is a separate and distinct market from the non-bulk market (see BTCE 1990 and ISC 1987). In this market rail and sea transport are generally accepted as having a cost advantage in the transport of bulk commodities over relatively long distances.⁸ For example, Friedlaender and Spady (1981) advanced the hypothesis that, in a competitive equilibrium, rail would predominantly carry high volume or bulk commodities and largely perform a “wholesaling” function between traffic centers. In this equilibrium situation, they hypothesise that the road freight industry would undertake a “retailing” function carrying smaller volumes to geographically dispersed areas. They also point out that:

... the notion that railroads should concentrate upon wholesale or linehaul operations that require relatively little switching and consolidation is not new and is widely held by transportation analysts (Friedlaender and Spady 1981, p.69).

The Commission is not aware of any Australian empirical studies of the degree of competition between freight transport modes in the bulk or non-bulk freight markets. However, the Commission’s inquiry into rail transport assessed that, for many bulk commodities, rail transport had such cost advantages that road transport was not a viable competitor (IC 1991). This is not to say that road places no competitive discipline in the bulk freight transport market. In some instances, for example short hauls, road transport could be a viable option (see

⁷ Market definition can encompass four components: the relevant temporal dimension; the relevant functional market; the relevant product market; and the relevant geographic market.

⁸ The principal task of Australia’s coastal shipping industry is the transport of bulk commodities over very long distances. For example, in 1993–94, bulk cargoes represented 91.5 per cent of the coastal fleet’s tonnage (DoT 1994).

Oum 1979, discussed in Box 2.2). However, in other instances, rail's advantages can give it a high degree of monopoly power.

Water or sea transport is also generally regarded as having a comparative advantage in carrying bulk commodities. Indeed, the available data for bulk freight suggest that sea transport dominates the Perth—Sydney route. Competition between these transport modes places a discipline on rail. A United States study supports this finding for the transport of three *bulk* commodities — corn, soybeans and wheat (MacDonald 1987). The study found that competition between water transport and rail transport, as well as competition from alternative railways, had a strong influence on the freight rates charged by railways for the transport of bulk commodities.

However, in many instances in Australia, rail and sea transport cannot be substitutes — notably where the origin or destination is an inland location. In some instances they are complements (for example, in the Pilbara, iron ore is railed to the nearest port and then shipped to the east coast). That said, it is feasible that rail could compete with sea for the transport of certain bulk freight between Sydney and Perth.

The Commission's view

The data available to the Commission indicate that the bulk freight task between Sydney and Perth is dominated by sea and the tonnage transported is relatively low and infrequent (Table 2.1). In this instance, the costs of declaring the services of the Sydney—Broken Hill railway track may exceed the benefits to the economy of promoting competition. Notwithstanding this, access could facilitate the entrance of new operators carrying bulk freight new to the route.

On the other hand, there are often few viable alternatives to rail for the intra-state transportation of bulk freight in the Sydney—Broken Hill transport corridor. Hence, mandating access to the Sydney—Broken Hill railway track *could* substantially promote competition for the transport of bulk freight. Unfortunately, data on the level or modal composition of bulk freight transported in this corridor are not available. However, the RAC (1997) notes that FreightCorp transports 'bulk freight (namely grain)' intra-state on the lines which are the subject of SCT's declaration application.

2.2.2 The non-bulk freight market

The majority of the freight transported between Sydney and Perth is non-bulk. All major transport modes operate in the Sydney—Perth non-bulk freight market. And ABS survey data indicates that rail plays a major role (Table 2.1).

Currently, the government owned NRC is the sole supplier of non-bulk rail freight services between Sydney and Perth. The NSW FreightCorp, a state owned corporation, is the sole provider of intra-state non-bulk rail services. Thus, access to the Sydney—Broken Hill railway track would provide scope for additional rail operators to supply inter-state and intra-state non-bulk rail freight services. However, the impact of rail access for competition in the Sydney—Perth and Sydney—Broken Hill non-bulk freight markets is clouded by the potential for this freight to be transported by other modes and, in the case of Sydney—Perth, by other routes. Indeed, it has been argued that freight rates for the non-bulk freight task are ‘... very much influenced by the competitive pressures of road transport. Road freight charges effectively set an upper limit ...’ (IC 1991, p.292). The BIE (1995a, p.10) reached a similar conclusion, noting that ‘Non-bulk rail freight faces fierce competition from road transport’.

Is the non-bulk market already competitive?

If non-bulk rail freight rates are substantially influenced, or at least capped, by the price and quality of the highly competitive road transport industry, then the ability for rail access to substantially promote competition in the non-bulk freight market must be questioned.

As noted above, the Commission is not aware of any Australian empirical studies of the degree of competition between freight transport modes. However, two North American studies focusing on competition in freight transport, primarily non-bulk freight, suggest that in this market segment rail transport faces relatively strong competition from road transport. However, as might be expected, the extent of inter-modal competition varied between commodities and between transport corridors (Box 2.2).

There is some qualitative evidence that competition for the transport of non-bulk freight in the Australian market is strong. For example, SCT in its submission to IPART’s recent arbitration on NRC access to the NSW rail network SCT said:

We require an access price that makes the operation of trains economically-competitive with alternative modes of freight (generally road but sometimes sea) (SCT 1997b, p.1).

With “smart” operations, rail can match the service level of road transport and this would seem to be the natural competition (SCT 1997b, p.12).

Box 2.2: Competition in the North American non-bulk freight market

Buckley and Westbrook (1991) examined competition between rail and truck in the market for the transportation of *non-bulk* commodities — fresh fruit and vegetables. They found that the fruit and vegetable transportation market was highly competitive with very strong substitution possibilities between rail and truck services. The substitution possibilities varied across the commodities with the most delicate commodities (for example, lettuce) being less likely to substitute between modes. The origin and destination of the transport task also impacted on the level of inter-modal competition.

Oum (1979) examined Canadian inter-city rail and road freight transport for eight commodities. He found that the elasticity of rail-truck substitution varies from commodity to commodity and from route to route. In the high value freight market (fruit and vegetables, metal fabricated products) competition between rail and truck was only significant for medium and long hauls, trucks dominated the short hauls. In contrast, in the relatively low value market (chemicals and fuel oil) effective road and rail competition was only evident for short hauls with rail dominating the medium and long hauls.

Oum also found that, in instances where a commodity is most efficiently handled by rail (for example, lumber and flooring), accessibility to a rail service was the major determinant of modal choice in Canada. In this segment of the Canadian freight market, rail and truck competition was absent, even on short hauls.

The NRC’s annual report also provides useful insights into the competitive pressures faced in the non-bulk market segments in which it competes. For example, the NRC argues that the long-distance general freight industry operates with low volumes and low margins. In regard to the competition faced by its primarily non-bulk ‘Intermodal’ business in 1995–96 the NRC (1996, p.12) reported that:

Strong cost-down pressures from customers, advancing road transport technology, growing availability of coastal shipping under single voyage permits and the beginning of open access on the rail network all affected Intermodal [one of the NRC business lines].

The NRC also considers that the major competitors for its 'Trailerail' business — which operates in the non-bulk market segment — are road operators. Indeed:

When necessary, Trailerail is able to linehaul trailers by road to meet tight arrival requirements. Road haulage can also be quickly substituted in the event of incidents affecting the rail service (NRC 1996, p.14).

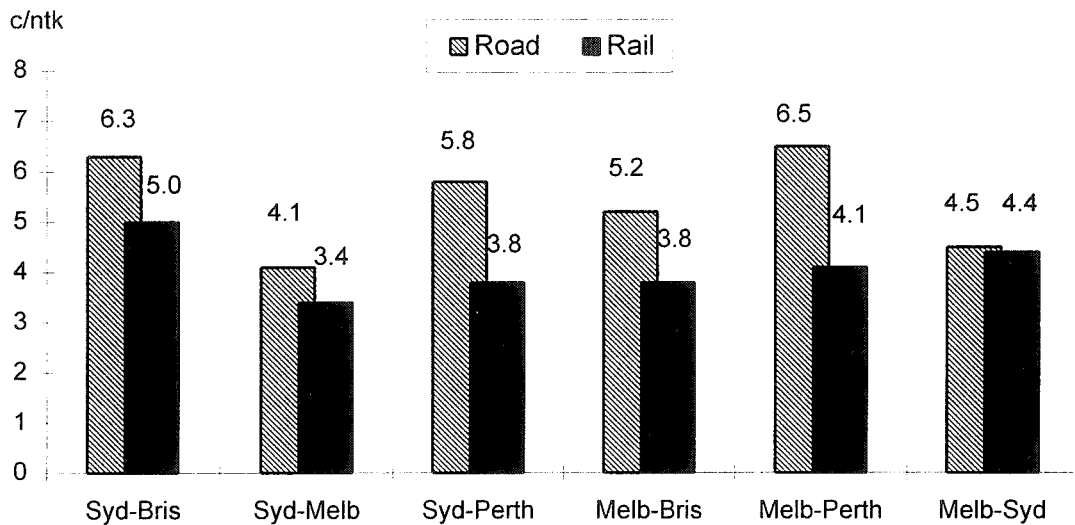
In contrast to the relatively mobile 'Intermodal' and 'Trailerail' customers, the NRC (1996, p.6) believes that its 'major industrial customers have strong incentives to build long-term partnerships'. The need for longer term relationships with major industrial customers reflects the more specialised and, often, "bulkier" nature of their non-bulk freight task. Thus, it is feasible that, for some non-bulk freight, rail is the preferred transport mode. This could provide the rail operators with a substantial degree of market power in this segment of the non-bulk freight market (see Oum's findings regarding such specialised freight, discussed in Box 2.2).

Steel may fall into this specialised non-bulk category. BHP (1997) notes that rail is the predominant mode for the transport of steel products in the "East-West" and return rail corridors. BHP Transport has contracted with the NRC's 'SteelLink' business for this service.⁹

Benchmarking undertaken by the BIE sheds some light on rails' competitiveness compared to road. The BIE's benchmarking suggests that rail non-bulk freight is currently price competitive with road (Figure 2.1). However, rail is less competitive in respect to service qualities such as reliability. Nonetheless, Australian railways' productivity and quality of service is beginning to slowly improve. If rail operations were operated efficiently in terms of cost and quality (timeliness, reliability etc), their new "efficient" cost structures could make rail a competitive force for many segments of the non-bulk long haul freight market. In this instance, competition from other rail freight operators could enhance competitive pressures.

⁹ The NRC's SteelLink business commenced a new specialised container service linehauling steel products between major steel production and warehousing facilities in all mainland states. Operations include the transport of steel products from Newcastle to Perth. SteelLink trains also carry other industrial products requiring direct siding-to-siding movements (NRC 1996).

Figure 2.1: Comparative rail and road door-to-door freight rates, 1994



Source: BIE 1995a.

There is some evidence that rail access on the Melbourne to Perth corridor is already having this effect. The Commission notes that the NRC (1996, p.6) when commenting on the new rail services provided by SCT and TNT on the Melbourne/Adelaide/Perth corridor, said:

This competition has inevitably reduced National Rail's market share and reduced rates in the market.

In relation to its Melbourne—Perth rail freight operations, SCT has been reported as saying:

... we have had an unexpectedly-high enquiry rate from sources new to SCT requesting that we provide a rail service to and from Perth. Some of this is undoubtedly freight that is presently being carried by the NRC. However, much of it is not. With our certain two and a half day transit time (out on Friday night, received by early Monday morning, delivery Monday) SCT can now match the performance of road. In fact the single largest query so far received by SCT is for freight which presently does not travel from Melbourne to Perth on rail (Mason 1995, p.11).

The Commission's view

Access to the Sydney—Broken Hill track provides scope for additional rail operators to supply non-bulk rail freight services. Currently, for inter-state movements, the government owned NRC is the only rail operator providing rail freight services between Sydney and Perth via Broken Hill while, for intra-state movements, the NSW Government owned FreightCorp is the only rail operator.

Access would thus be expected to intensify rail to rail competition for the transport of non-bulk freight.

However, the statements by SCT and NRC and the empirical evidence to hand suggest that there is already a substantial level of competition in most segments of the non-bulk freight markets supplied by rail. For most non-bulk freight it would appear that, at this stage in the reform process, road freight transport places a cap on rail freight rates. Hence, it is unlikely that access would substantially increase competition in most segments of the non-bulk market.

The opportunity for increased rail to rail competition to substantially impact on the non-bulk freight market will be enhanced if there are segments of this market which see rail as the preferred transport mode. The non-bulk freight transported by the NRC's 'SteelLink' business may fall into this category. Unfortunately, the Commission does not have the information necessary to make an assessment of the impact of rail access in these more specialised non-bulk freight tasks.

The Commission also notes that the competitiveness of rail in transporting non-bulk freight could increase in future years. The entry of a new operator could contribute to this increase. If substantial improvements were made in the efficiency of rail operations, it is conceivable that an access arrangement could enhance competitive pressures in the transport of all non-bulk freight. On the other hand, efficiency improvements are also likely in other transport modes. For instance, mooted reforms to coastal shipping could substantially add to the strength of competition in certain segments of the bulk and non-bulk freight transport market.

3 THE NSW RAIL ACCESS REGIME

This chapter focuses on a number of issues raised by SCT in relation to the effectiveness of the NSW Code. In particular, it considers issues related to SCT's concerns regarding commercial negotiations and access pricing principles. The chapter also raises some other matters arising from the SCT application. Many of the issues discussed are also likely to be relevant to the NCC's assessments of other public sector access regimes.

3.1 SCT's concerns

SCT, in support of its claim that the NSW Code is ineffective, points to the failure of the negotiation process in respect to its request for access to the Sydney—Broken Hill railway track. SCT (1997a, p.4) argues that for the NSW Code to be effective:

... (1) there must be evidence of access to RAC track being successfully negotiated or arbitrated under the regime; (2) there must be evidence of a willingness by RAC to negotiate access; and (3) pricing principles in the regime must be useful and valid.

SCT considers that the Code fails on all three accounts. It draws attention to the time consuming and costly process associated with the arbitration hearing [then] underway between the National Rail Corporation and the RAC.¹

SCT claims that, in its experience, there has been no willingness on the part of the RAC to negotiate. SCT(1997a, p.5) also claims:

... the pricing principle contained in the NSW regime, namely [that the] negotiated access price fall between a “ceiling” and a “floor” is to an applicant, quite useless for it gives no guidance as to where between these two extremes the price is to be struck; the extremes themselves are vague and difficult to establish; and in the context of freight train operations in NSW, which are marginal at best and present no significant opportunity for return on capital, they are utterly unrealistic.

¹ This dispute was settled in March 1997. After some initial arbitration, the parties negotiated an access price. IPART considered that the proposed basis for resolution was reasonable and made a consent award to determine the dispute. The negotiated access price is commercial-in-confidence (IPART 1997).

A realistic price for access to RAC track on the Sydney-Perth route would have regard to the prices established by negotiation and agreement with the rail authorities on the Melbourne-Perth route.

... Finally, although not directly relevant to the service proposed by SCT, the NSW regime is also marred by a set of pricing principles for the carriage of coal which effectively enables prices to be unilaterally fixed by the RAC or the NSW Government. SCT is concerned that these principles could have some influence on the route for which it seeks access since coal is carried on the Blue Mountains to Sydney portion of the route.

SCT also drew the NCC's attention to a number of concerns it had raised in a submission to IPART about the arbitration of rail access between the NRC and the RAC (SCT 1997b). In that submission, SCT argued, amongst other things, that:

We require an access price that makes the operation of trains economically-competitive with alternative modes of freight (SCT 1997b, p.1).

Assuming that competition is required and/or desired, then rail access charges must therefore be the balancing item after subtracting the above rail costs from the market value of the freighting exercise (set by its alternatives). In this context, it is not unlike the resources rent that can be extracted by the crown from a potential minerals miner (SCT 1997b, p.2).

SCT also argued that all rail operators should face identical access prices and that the pricing mechanism should have a fixed and a variable component. According to SCT, the fixed component on the Sydney—Broken Hill corridor should be set at \$4 800 with a variable component of 0.15 cents per gross tonne kilometre (c/gtk), producing an average price of 0.3c/gtk (SCT 1997b).

SCT's application raises many important issues in relation to the negotiation and pricing of access to railway track infrastructure. The following section considers some pricing issues raised by SCT. Section 3.3 briefly considers some rail and road equity issues in the context of access prices. Section 3.4 discusses the effectiveness of commercial negotiations in the context of the NSW Code and access to infrastructure more generally. Section 3.5 briefly discusses the NSW Code's coal freight pricing principles.

3.2 Some pricing issues raised by SCT

SCT's primary concerns about the effectiveness of the NSW Code appear to revolve around its inability to negotiate an acceptable access price with the RAC. The following sections consider a number of pricing issues raised by SCT.

3.2.1 Inter-network access price differences

SCT suggests that the access prices on other Australian railway track networks are an important consideration for negotiation of an access price on the Sydney—Broken Hill railway track.

To the extent that rail networks compete for business, the RAC would be expected to consider an alternative network's access prices when negotiating with SCT. For instance, where freight transport between Sydney and Perth via Melbourne is a substitute for SCT's proposed Sydney—Broken Hill—Perth service, the cost of access in this alternative transport corridor is likely to influence negotiations on access prices. On the other hand, Australian National's network linking Broken Hill and Perth and the RAC's Sydney—Broken Hill railway track could be viewed as complement services rather than substitutes — having little influence on price negotiations.

There are a range of factors which could lead to differences between SCT's access price on the Australian National Railway network and SCT's access price on the NSW railway track network. For example, the operational costs associated with a railway track depend on a number of factors including the type and age of infrastructure used, the level of congestion, the topography and usage (see Box 3.1). Thus, the fixed and marginal costs associated with the services provided by rail track infrastructure are very likely to vary between sections of a network and between networks. These cost differences can be important considerations in the negotiation of access prices and, in many circumstances, they can lead to differences in access charges between different track networks.

3.2.2 Infrastructure pricing

This section briefly considers some pricing principles which shed light on SCT's other pricing concerns.

The price mechanism plays an integral role in allocating resources in an economy. In theory, equilibrium prices in a perfectly competitive market will equate with the marginal cost of production — which in turn reflects the opportunity cost of supplying the last unit produced. Marginal cost pricing in perfectly competitive markets allows firms to recover all their costs.²

² This discussion makes no distinction between short run and long run marginal costs. Strictly speaking, prices should reflect short run marginal costs where there is excess capacity. Long run marginal cost is relevant when all factors of production are variable — it measures the cost of *expanding* capacity to provide additional unit of service. If infrastructure has a very long life expectancy, and if there is minimal technological change, the difference between short run and long run marginal costs is likely to be small.

Box 3.1: Some sources of differences in railway track costs

The costs associated with a railway track investment are dependent on a number of factors including the value of the land purchased for the right of way, the topography of the route (and thus the need for infrastructure such as bridges and tunnels) and the number of sidings. Clearly these factors will vary from track to track and from network to network. The maintenance and day to day operating costs associated with railway track and associated infrastructure will also vary from line to line. For example:

— *Train control and safe working costs* are a function of the signalling infrastructure used. For example, where train control is under the control of signalmen or safe working staff located at stations, costs are a function of the number of such locations. On the other hand, the costs of centralised train control systems are more closely related to traffic volumes.

— *Track infrastructure maintenance costs* are a function of a range of factors. Track inspections are independent of tonnage. They are almost entirely time and distance-dependent. Track renewal or relaying is almost totally tonnage-dependent, resurfacing is mostly time-dependent at the traffic densities experienced in Australia. Resleepering, ballast cleaning, rail grinding and bridge maintenance are a mix of tonnage and time-dependence. Formation maintenance is largely a function of climate and elapsed time and is only affected to a small degree by usage. Other miscellaneous track maintenance (eg weld replacement, broken or damaged rail replacement) is almost entirely dependent on topography, soil types, rainfall and other weather factors such as wind and temperature.

— *Communications maintenance costs* are a function of the equipment's age and the nature of the technology used. Similarly, *signals maintenance costs* reflect the technology in place and the geographic structure of the network. Signals maintenance costs depend on:

- the type of equipment, which determines the periodic maintenance intervals and work performed;
- equipment age and failure rate, which determines the volume of non-scheduled maintenance; and
- equipment accessibility and maintenance logistics, which affects the cost of undertaking the maintenance.

Source: BIE (1995a).

When the market determined price of a good or service is above its marginal cost, there is an incentive for producers to expand supply up to the point where the selling price equals the marginal cost of production. If firms are operating at

full capacity, a price in excess of marginal cost signals the need for future investment. On the other hand, if the market price is consistently below marginal cost, there is an incentive for higher cost producers to exit the market.

In practice, there are very few, if any, perfectly competitive markets. Certainly the market in which the RAC operates does not exhibit perfect competition. For all practical purposes, the RAC is currently a monopoly supplier of railway track services in NSW. There are substantial fixed costs associated with the provision of railway track services and relatively low variable costs. Excess capacity in most, if not all, of the NSW railway network outside the Sydney metropolitan area, is associated with these features.³ Indeed, as discussed in Chapter two, there is some *prima facie* evidence to suggest that, in the provision of Sydney—Broken railway track services, the railway network covered by SCT's application is a natural monopoly. Consequently, if the RAC employed a pricing structure based only on marginal cost it would not recover total costs.⁴ On the other hand, pricing the use of the Sydney—Broken Hill railway track services at marginal cost is desirable if the network is to be used optimally. In this context, marginal cost pricing sets a lower limit for access to track services. This limit is not sustainable without financial assistance. This pricing dilemma is faced by many forms of infrastructure and has formed the basis of an extensive body of economic literature on public utility pricing.⁵

Some pricing approaches

Essentially, there are two dominant approaches to efficient public utility or natural monopoly pricing — two (or multi-part) pricing and Ramsey-Boiteux pricing.⁶ While these pricing approaches may not always be strictly applicable to rail access in a practical sense, they provide insights against which actual rail pricing arrangements can be considered.

³ In some instances, the costs and the excess capacity faced by the RAC are driven by a NSW Government requirement to keep non-commercial tracks open.

⁴ Costs in this context are assumed to be based on efficient operating practices, and returns to capital are assumed to be based on a sound valuation of the assets.

⁵ The following discussion is based on the presumption that governments are not prepared to finance the deficit arising from the marginal cost pricing of natural monopoly infrastructure.

⁶ For more detail on these pricing approaches see the Industry Commission's recent analysis of the efficient pricing of telecommunications services (IC 1997b) and the BIE's Issues in Infrastructure Pricing report (BIE 1995c).

In its simplest form, a *two-part tariff* is non-discriminatory. It would involve an up front access or entry fee to meet fixed costs and a charge, equal to marginal cost, for each unit of track service used.

A major problem with this approach is that some potential users of the track may be discouraged from entering the market because the entry fee is higher than their preparedness to pay for the service. Ideally, such “potential” customers should not be discouraged from using the track services, so long as their valuation of the service is higher than marginal cost. In circumstances where the service provided to such customers cannot simply be resold to customers prepared to pay a higher price and there is excess capacity — a situation that appears to apply to much of the RAC’s rail track services — it is in the best interests of the infrastructure operator to allow “potential” customers access to the service. To allow for this situation, the price of access could be based on a two part tariff, such that the usage charge per unit equals marginal cost and the entry fee is set to reflect “potential” customers’ preparedness to pay for the service.

Ramsey-Boiteux pricing aims for full cost recovery while, at the same time, minimising any efficiency losses associated with pricing above marginal cost. This approach sets a separate price for each user (or user category) which is based on the price elasticity of demand for a particular service and the revenue needed to recover costs. The divergence from marginal cost for different customers will vary with the price sensitivity of their demand.

The price discrimination associated with both of these pricing approaches allows the public utility to recover costs (including capital costs) while minimising any disruption to consumption patterns caused by a departure from marginal cost pricing. Such discrimination can also allow the RAC to maximise the use of uncongested track.

SCT pricing concerns — an assessment

The *uniform* two part pricing structure SCT proposes is consistent with multi-part pricing theory for situations where marginal cost pricing will not recover average costs.

Nevertheless, the Commission does not support SCT’s claim that pricing and access necessarily has to be identical for all rail operators. As noted above, discriminatory pricing structures can also be consistent with efficient pricing principles. And a pricing approach based on price discrimination principles could conceivably see very different access prices for individual track users. Discriminatory pricing structures would also appear to be consistent with the

CPA clause 6(4)(f) and clause 5.7 of the NSW Code. Neither clause requires the terms and conditions of access to be the same for all access agreements.

The Commission notes that the RAC (1996) in setting out its pricing policy and structure indicates that it will price discriminate in recognition that there are differences between factors specific to particular train movements, customers and traffics. In general, it is anticipated that RAC access prices will be in the form of an additive two-part tariff consisting of:

- a fixed component or network charge which reflects the costs of “provisioning” the network; plus
- a variable component or usage charge reflecting those costs which vary with usage (which will normally be based on gross tonne kilometres).

To minimise the efficiency costs associated with such a pricing structure, the variable component should be as close as possible to the marginal cost imposed on the network by each user. The fixed component could vary from customer to customer depending on the level of costs to be recovered and the elasticities of demand. In the extreme case, where customers have a very low capacity to pay, the fixed component could be close to zero.

While discriminatory pricing can minimise the efficiency losses associated with departing from strict marginal cost pricing, it should be recognised that the same pricing approaches can also be used by a monopolist to support inefficient practices such as cost padding or to provide opportunities for the access provider to earn an above normal return (that is, a monopoly profit). The issue of monopoly pricing in the context of the NSW Code is discussed in section 3.4.1.

3.3 Rail and road equity issues

Some commentators (for example the NRC (1996) and Australian Railway Association in Noonan (1997)) argue that the road transport industry does not meet the full cost of its use of the road network. This under recovery of road costs, it is argued, gives road transport an unfair advantage over other transport modes such as rail. SCT (1997b, p.2) also argues that the competitive alternative of road ‘has the involvement of government rather than being left to market forces’. For this reason, SCT (1997b, p.2) considers that ‘the cost of accessing rail infrastructure should be treated as a balancing item to determine whether rail is a competitive alternative or not’.

The issue of cost recovery for access to the road network is complex. The allocation of road costs is far from clear and the charging mechanisms currently in place are a mix of fixed user charges (registration fees) and taxes (that is, a proportion of the diesel excise is attributed as a charge). The National Road Transport Commission's (NRTC) charter requires it to set registration charges and determine a component of the diesel fuel excise (currently 18 cents per litre) which, in aggregate, recovers expenditures on the nation's roads. However, as the NRTC (1995) acknowledges, there are substantial difficulties associated with charging for roads in this fashion. For example, there is presently a systematic bias in the recovery of road expenditures both between and within vehicle classes.

Nonetheless, the NRTC (1993) estimates that the registration revenue and the 18 cents per litre of the diesel excise paid by heavy vehicles is sufficient, in aggregate, to recover the road network expenditures allocated to heavy vehicles. However, estimates at the vehicle class level show that revenue payments by six vehicle categories (six axle truck, eight axle truck, B-doubles, double road trains, triple road trains and three axle buses) do not fully recover the road expenditures allocated to their classes (see Table 3.1).⁷ Arguably, it is these road freight vehicle classes which are the main competitors of the rail freight sector.

The road-rail equity situation is further complicated by the fact that diesel fuelled trains also pay the same diesel excise used in the NRTC's road user charge calculations.

It is not clear how the cost recovery arrangements for access to the road network are impacting on competition in the transport market. Nonetheless, the Commission considers that concerns over the potential advantages for the road transport sector over other transport providers (eg rail) should be addressed directly. The Commission does not support compensatory action in the form of artificially low (or "subsidised") rail access charges.

A number of factors underlie this view. As discussed in Chapter two, rail freight transport competes with other transport modes, not just rail. If rail access charges are assessed only with reference to road, then there is a strong chance that the competitiveness of these other modes could be unduly affected. Also, given that road damage costs vary between different vehicle types and between different road pavements, any implicit road user subsidy which may exist will

⁷ Estimates of the NRTC charges paid by the remaining thirteen heavy vehicle classes suggest that these classes more than recover the level of road expenditure allocated to their class.

vary between different vehicle types and even between the same vehicle on different hauls.⁸ Hence, a uniform rail access subsidy could be far from neutral between rail and segments of the road transport industry.

Table 3.1: Alternative road user charges and road expenditures, by vehicle class (\$million/year)

<i>Heavy vehicle class</i>	<i>Registration</i>	<i>Diesel excise charges^a</i>	<i>Total NRTC charge</i>	<i>Under or over recovery of allocated expenditure</i>
A6	106.9	282.9	389.7	(17.2)
B-double	3.9	11.9	15.8	(4.8)
Double road train	18.9	39.5	58.5	(19.1)
Triple road train	19.1	40.4	59.5	(20.1)
3 axle buses	2.8	19.9	22.8	(3.5)
All other classes	208.6	488.0	696.6	181.0
Total for all classes	360	883	1 243	116

a Diesel excise charges represent the 18 cents per litre of the diesel fuel excise which is allocated as a road user charge.

b The bracketed amounts indicate under recovery of allocated expenditures for the vehicle class.

Note: Totals may not add due to rounding.

Source: NRTC (1993).

As discussed in Chapter two, SCT appears to face a substantial level of competition in the freight market in which it competes. Consequently, there may be grounds to argue that SCT's capacity to make a significant contribution to the fixed costs associated with access to the services of the Sydney—Broken Hill railway track is limited by competition with road. However, mandating access to rail or subsidising access to rail to 'balance up' the road-rail competition is an inferior policy option which could involve efficiency costs of its own. Access prices for the Sydney—Broken Hill railway track should at a *minimum* reflect the marginal cost associated with that access (see section 3.2.2).

⁸ There is general acceptance that the road damage caused by a vehicle varies and is related to the individual vehicle's axle load and the road characteristics (eg pavement thickness and number and type of bridges).

3.4 Facilitating access through commercial negotiation

The Competition Principles Agreement (CPA) sets out the criteria which need to be considered by the NCC when it assesses the effectiveness of an access regime. Clause 6(4) in the CPA, amongst other things, specifies that:

A State or Territory access regime should incorporate the following principles:

- (a) Wherever possible third party access to a service provided by means of a facility should be on the basis of terms and conditions agreed between the owner of the facility and the person seeking access.
- (b) Where such agreement cannot be reached, Governments should establish a right for persons to negotiate access to a service provided by means of a facility.
- (c) Any right to negotiate access should provide for an enforcement process.

The NCC has previously raised concerns about the efficacy of negotiating access. In its Draft Guide to Part IIIA, the Council said that (1996, p.48):

While clause 6(4)(a) indicates a preference for the commercial negotiation approach (that is, no regulatory intervention), the Council recognises that limiting commercial negotiations, particularly in relation to access charges and essential conditions for access, could sometimes promote better policy outcomes.

In an earlier submission to the Council, the Commission drew attention to the potential for commercial negotiations to allow monopoly behaviour (IC 1997a). The potential for monopoly behaviour will increase when the access provider is vertically integrated and operates in a related downstream or upstream market to the access seeker.

The potential for monopoly behaviour will also be increased if the separation of the monopoly elements of a once vertically integrated organisation — such as the former SRA — is not fully effective in separating the interests of the new operators. In this context, it is pertinent to note that the RAC still has a number of important links with the SRA. For instance, the RAC must use the SRA for the provision of track control and signalling services. In addition, passenger services, which are currently only provided by SRA, have first priority for access to the railway network. Also, because of titling complexities, the SRA nominally holds the title for the land on which the RAC's track stands (Langton 1996).

In its earlier submission, the Commission discussed the role that prescribed access tariffs could play in addressing concerns that commercial negotiations associated with gaining access to essential facilities would entrench monopoly prices. However, the determination of such tariffs can be complex. And there is

a possibility that these tariffs will also include some element of monopoly pricing. This can occur because of the significant information asymmetries between infrastructure operators and regulators. In particular, information asymmetries are likely to exist in relation to the valuation of assets and the determination of costs associated with access. However, as noted in its previous submission, the Commission considers that “regulated negotiation” provides a framework that may assist in overcoming some of the problems in applying the prescribed access tariff approach. This involves a combination of negotiation, coupled with prescribed access tariffs setting the ceiling price for negotiation, and an arbitration process which is independent of the regulator.

More generally, the Commission noted in its previous submission that access regimes should encompass mechanisms to ensure on-going monitoring, error correction and adaptation. This is particularly important in view of the limited Australian experience in the design and operation of access arrangements. The inclusion of such mechanisms in access regimes would allow modification as experience of their impacts is gained. For instance, consistent failure of regulated negotiation may be an indication that the negotiation ceiling may need to be reviewed. Similarly, if access occurs but there is no evidence of changes in the level of competition in related markets, there is a *prima facie* case for reviewing the access pricing arrangements to assess whether the negotiated or arbitrated access prices entrench monopoly.

3.4.1 Negotiation under the NSW Code

The NSW Code contains both general rail pricing principles and coal pricing principles. (The coal pricing principles are discussed in section 3.5.) The general pricing principles establish a band comprising a revenue “ceiling” and a revenue “floor”. Schedule 3 of the NSW Code, amongst other things, specifies:

- (i) Prices will be negotiated so that the following requirements are satisfied:
 - (a) revenue from every Rail Operator or group of Rail Operators must at least meet the direct cost imposed by that Rail Operator or group of Rail Operators; and for any line section or group of line sections, the full incremental costs, including incremental fixed costs, must at least be met by revenue from the Rail Operators of these sections (“*floor test*”);
 - (b) for any Rail Operator or group of Rail Operators, revenue must not exceed the full economic costs of the infrastructure (including reasonable costs of capital, overheads etc) which is required by that Rail Operator or group of Rail Operators on a stand alone basis (“*ceiling test*”); and

(c) total Corporation revenues must not exceed the stand alone economic costs of the entire NSW Rail Network.

(ii) With respect to paragraph (i)(b), full stand alone economic costs include a rate of return on the asset value of the relevant line section (or group of line sections) and on assets which are in the nature of corporate overheads ...

In considering these principles, the Commission has identified a range of issues that it considers will impact on the success of negotiations under the Code in promoting efficient use of the NSW rail infrastructure network. These issues, which are discussed below, concern how the NSW Code deals with monopoly behaviour and the impact of the wider reform program for the NSW rail industry on negotiations under the Code.

Monopoly concerns

The pricing principles provided under the Code are couched in terms of a floor test and a ceiling test. There are some similarities between the approach discussed by the Commission in its earlier submission and the NSW Code, in the sense that the Code sets a ceiling for negotiation. However, under the approach discussed by the Commission, an independent regulator is involved in setting the prescribed ceiling tariff.

Under the Code, the RAC has considerable flexibility within the ceiling and floor revenue limits to negotiate different access prices with different users. As discussed in section 3.2, price discrimination can be an efficient method of covering costs for businesses with natural monopoly characteristics — such as the RAC. However, this pricing flexibility also provides the RAC with considerable bargaining power. Coupled with its monopoly position as the manager of the NSW rail track infrastructure, the RAC could be in a position to exploit its bargaining power in a fashion that is detrimental to access negotiations and the efficient use of the rail network.

The capacity of the RAC to use its market power when setting access prices is, to some extent, constrained by the pricing principles incorporated in the Code. Under the ‘ceiling test’ (Schedule 3 (i)(b)), the revenue earned by the RAC must not exceed the stand alone economic costs of the infrastructure used by an operator or group of operators. For any line or group of lines the Corporation’s stand alone economic costs include a return on the value of the relevant assets. The maximum allowable return is currently set at 14 per cent (nominal, post tax). Under Schedule 3 (i)(c), which acts as a ‘revenue cap’, revenue for the Corporation as a whole must not exceed the stand alone economic costs of the entire NSW rail network.

The limits imposed under the Code are similar to the rate of return regulation approach that has been widely used in the United States to address monopoly concerns. Under the approach, a regulator sets a maximum return that the regulated firm is “allowed” to earn for a prescribed period. The approach normally involves a regulator undertaking a detailed review of costs prior to setting the rate of return target. Efficiency considerations normally comprise an important element of these cost reviews. Based on the review, the regulator sets the rate of return that it considers would enable the regulated firm to price in a fashion to just cover its costs (operating and capital) if it were operating efficiently. One important respect in which the NSW Code differs from rate of return regulation is that the Code does not appear to explicitly encompass an independent review process that considers efficient costs.

There are a number of criticisms of rate of return type regulation (see BIE 1995c). Among other things, it reduces incentives to pursue efficiency improvements and to innovate. It can also encourage cost padding and “gold plating”.

The criticisms of rate of return type regulation raise a number of issues for the effectiveness of the Code in facilitating access. In particular, the Code does not appear to incorporate a mechanism designed to ensure that the RAC pursues efficiency improvements. Where it is not operating efficiently, the cost basis for negotiating access may be inflated — and there appears to be no mechanism in place to prevent the RAC from charging access prices that cover these inflated costs. The resulting difference between the “efficient” and “inefficient” access charge could discourage access.

A specific issue concerning the ability of the Code to limit monopoly pricing behaviour concerns the operating position of the RAC. In particular, the limits would only be expected to have an impact on the negotiation of access prices where the RAC faces the risk that it will exceed the ceiling or revenue cap. However, there are a number of factors that suggest that the RAC is well below the revenue cap, for the business as a whole, and the ceiling, on many lines. First, it is not clear that the RAC will be able to earn *any* positive return on many of its assets — costs associated with RAC’s rail infrastructure previously contributed to the operating deficits incurred by the former SRA (\$747.2 million⁹ in 1995—96). Second, the RAC is only required to break even on non-commercial lines — although commercial train operators using these lines are

⁹ Operating deficit after government contributions to revenue of \$150 million and abnormal items of \$5.4 million as reported in the SRA’s Income and Expenditure Statement (SRA 1996).

charged a commercial rate. Third, there would appear to be considerable excess capacity on many lines. As a consequence, the Code's revenue and ceiling caps may not constrain the RAC's current ability to pursue monopoly strategies on many lines.

The Commission is not in a position to judge whether these concerns represent major issues for negotiation under the Code. A number of factors should be considered in such an assessment. First, as discussed in Chapter two, the RAC faces competition from other transport modes for a variety of transport tasks. This competition reduces the scope for the RAC to pursue monopoly strategies for at least some of its customers. (However, for some customers, particularly bulk freight customers, considerable opportunities for monopoly behaviour may exist.) Second, the NSW Government may set performance targets for the RAC as part of the Statement of Corporate Intent process.¹⁰ This process can be used to set targets that increase the incentives or pressures for the RAC to produce efficiently. Finally, the NSW Code provides for arbitration. Where an operator considers that the prices offered are inappropriate, for whatever reason, they can take their concerns to IPART to seek arbitration.

Impact of wider industry reforms

The application of the Code's pricing principles requires detailed information on the costs and revenues associated with individual lines, line sections and operators use of those lines. In this respect, there are a variety of costs and revenues that are peculiar to the RAC as a NSW Government State Owned Corporation (SOC) (see Chapter one). As a SOC, there are certain "costs" and "revenues" that are "agreed" or "negotiated" between the RAC and the NSW Government. Examples include rate of return requirements, capital structure, debt guarantee fees and CSOs (Box 3.2). In the RAC's case, the CSO arrangements for the activities of the SRA and FreightCorp will also have important implications for its revenues.

The resolution of these issues has important implications for the RAC's revenues and costs and, as a consequence, its approach towards access negotiations under the NSW Code. This is best highlighted by the following CSO example.

¹⁰ Under Section 22 of the *NSW State Owned Corporations Act 1989*, the RAC is required to have a Statement of Corporate Intent (SCI). The SCI represents the performance agreement between the Government and the Board of the SOC. Performance targets are an important component of the SCI. The targets used normally include a range of financial indicators (eg rate of return, liquidity) and non-financial indicators (eg labour productivity, service quality).

Consider the CSO arrangements for an uncommercial line which is used by a commercial operator and a non-commercial operator. The resolution of CSO arrangements in these circumstances is complex. The costs of maintaining the service potential of the track could be attributed to the non-commercial rail operator. This cost allocation would be consistent with the view that the track service potential is only being maintained to support the non-commercial operator's CSO commitment. In these circumstances, any access by commercial users (provided the access charge at least met marginal costs) would represent an efficient use of what would otherwise be unused rail infrastructure. CSO compensation based on this allocation would provide the non-commercial operator with the capacity to pay an access charge that was sufficient to ensure that the service potential of the track was maintained.

Box 3.2: CSOs and the RAC

In the second reading speech of the *Transport Administration Amendment Bill 1996* which led to the formation of the RAC, the Minister discussed the funding of CSOs for non-commercial lines and non-commercial services on some lines. The Minister (Langton, 1996 p.121) said that:

... in some areas, the cost of maintaining the system will be more than the users of rail services can be expected to pay, so if rail services are essential in these areas, they will continue to be supported from public funds. In such cases, there is little merit in increasing the Government's outlays to rail operators so that the Rail Access Corporation can make an artificial profit in order to pay an artificial dividend back to the Government.

Clearly, the Government will only expect Rail Access Corporation to break even on the non-commercial lines, and profits, if any, will only be achieved over a period of years through economies in operating costs. On the other hand, any unsubsidised operators on such lines will pay a full commercial access charge. It follows that the Government does not intend to provide direct financial support to the Rail Access Corporation in respect of any non-commercial services. It will continue to support essential rail operations provided by CityRail, CountryLink and Freight Rail [FreightCorp] by means of carefully targeted community service obligation payments.

Source: Langton (1996).

Alternatively, if the non-commercial operator's CSO compensation did not fully recognise the costs of maintaining the service potential of the track, the access charge it could pay would be reduced. The RAC would then be in a position where it may require CSO compensation. If the RAC did not receive full CSO compensation it may attempt to exploit its monopoly position to generate the

revenue necessary to maintain the tracks' service potential through the commercial operator's access charge. Price discrimination in these circumstances will muddy the true value of the CSO and could see commercial operators subsidising non-commercial services. It could lead to over charging for the commercial operator. Indeed, such over charging could discourage access by a commercial operator.

In this regard, the Commission notes that the RAC (1996, p.1) in its Access Pricing Policy document states that:

... price differentiation will recognise factors specific to particular train movements, customers or traffics. These factors may include but will not necessarily be limited to:

... f) the availability of Government support to particular train movements, customers or traffics ...

It appears that many of the government related costs and revenues (eg CSO arrangements, capital structure, guarantee fees) associated with the RAC, the new SRA and FreightCorp are not fully resolved. For instance, the RAC (1997) notes that it *expects* to have line CSOs for the 1996–97 financial year and thereafter. Similarly, the New South Wales Mineral Council (1997) states that the assets that are to be part of the RAC's facilities are not yet finalised.

The resolution of these government related cost and revenue arrangements is a transitional issue associated with the reform of the NSW rail industry. Nevertheless, while these issues remain unresolved, the RAC does not have full information about its costs and revenues and, as a result, cannot have an appropriate basis for negotiating access. The sound resolution of these issues is necessary in order to improve the prospect of successful access negotiations — irrespective of whether the NSW rail network is subject to the NSW Code or the National Access Regime.

3.5 The Code's coal pricing principles and SCT's application

As noted above, the NSW Code sets out special access pricing principles for coal freight operators. The Code's coal freight access prices are linked to 1995–96 coal haulage revenue and haulage costs and are established by the RAC, rather than by negotiation as required under the CPA. They are calculated with reference to three origin-destination haul categories which may be summarised as follows:

- Category 1: if 1995–96 coal haulage revenue is greater than [1995–96 above rail coal haulage costs — including overheads and a return on assets

(“above rail” coal haulage costs), plus “below rail” access costs based on the “ceiling test”], then the base access price equals the value derived from the “ceiling test”. An adjustment factor which is determined annually by the NSW Government is added to this base access price;

- Category 2: if 1995–96 coal haulage revenue is greater than or equal to [1995–96 “above rail” coal haulage costs plus “below rail” access costs based on the “floor test”], then the access price is the amount by which the 1995–96 coal haulage revenue exceeds 1995–96 “above rail” coal haulage costs; and
- Category 3: if 1995–96 coal haulage revenue is less than [1995–96 “above rail” coal haulage costs plus “below rail” access costs based on the “floor test”], then base the track access price on the “floor test”.

A very preliminary assessment of the NSW Code’s coal freight access pricing principles suggests that they will entrench any mineral royalties or monopoly rents currently paid via coal rail freight rates. In the past, there has been debate about the existence of an “excess” or mineral royalty component in the SRA’s coal rail freight rates (Box 3.3).

The decision to link the coal rail access pricing principles to 1995–96 coal haulage revenue and haulage costs suggests that the NSW Government intends that the RAC should exercise substantial market power in the development of coal haulage access charges. The Commission understands that the Competition Policy Reform Act excludes a government coal carrying service from Part IIIA access arrangements until the year 2000 (NCC 1996). After this date, coal freight access prices will be determined under the general pricing principles discussed above. Thus, under the NSW Code in the transitional period, one access pricing system will apply to the coal currently transported by FreightCorp and another system will apply for the supply of other rail services — even where the same track is being used. It not clear how the operation of the NSW Code’s coal rail access prices will interact with the revenue floor, ceiling and cap in the NSW Code’s general access pricing principles.

From an efficiency perspective, the collection of mineral royalties via a rail access charge clouds the true price of rail track services for coal customers using the track and has the potential to lead to inefficient use of railway track assets. It also reduces the incentive for the NSW Government to introduce more efficient mineral royalty collection mechanisms.

Box 3.3: Coal Rail Freight Rates and Mineral Royalties

In the past, there has been debate about the existence of an “excess” or mineral royalty component in the SRA’s export coal rail freight rates. For example, the NSW Government in its submission to the Commission’s Rail Transport inquiry said that coal rail freight charges did not fully recover distributed costs. It stated that, while these charges had previously been set well above costs, by 1990, there was no indirect mineral royalty in the coal rail freight charge. On the other hand, many coal mining companies participating in the inquiry argued that rail freight charges were substantially above costs because the SRA exploited its monopoly position. The Commission concluded that there were differences between NSW coal rail freight rates and equivalent costs — including a 10 per cent real rate of return. The report also acknowledged that railway authorities, if they behave rationally, would charge what the market would bear when transporting minerals such as coal, but suggested that this practice may not be in the best interests of the economy as a whole.

Source: IC (1991).

APPENDIX A: FREIGHT TRANSPORT — SOME MODAL CHARACTERISTICS

The appendix briefly discusses some characteristics of the four main freight transport modes. It draws heavily on information collected by the BIE as part of its work on the international benchmarking of infrastructure. The appendix covers freight rates and reliability, and provides some data on the international benchmarking of Australian transport infrastructure. These benchmarks provide insights into the potential for efficiency improvements in the transport sector.

Freight rates and reliability

Comparisons of 1994 *freight trucking rates* and comparative *door to door rail freight rates* for major interstate corridors show that, on average, rail rates were about 23 per cent lower than road rates on a cents per net tonne kilometre (c/ntk) basis. Differentials were wide for the long haul Sydney—Perth and Melbourne — Perth transport corridors. The Melbourne—Sydney corridor had the lowest differential. However the return trip Sydney—Melbourne had a wider differential (BIE 1995a).

Australia's rail transit time reliability varies from network to network. In 1994–95, NSW's SRA and the NRC had improved on time performance to 90 per cent and 64 per cent, respectively (BIE 1995a). The NRC's on time reliability in 1995–96 varied from 61 per cent for its 'Intermodal' business to 92 per cent for both its 'Trailerail' bimodal business and its 'Sea Train' business (NRC 1996). The NRC expects increased reliability of its 'Intermodal' services with the delivery of new locomotives, but considers that the quality of the track, which is outside of its control, negatively impacts on reliability.

In contrast to rail, the BIE found that, in 1992 (latest available data), truck operators competing with rail arrived on time 96 per cent of the time.

There is little publicly available data on *coastal shipping* freight rates and performance. This is in part due to a significant proportion of the fleet being owned and operated by users servicing 'in house' transport needs. However, SCT (1997b) notes that:

In the case of interstate [non-bulk] freight between Sydney and Perth, the alternative freight media are by road or by sea. The latter is generally cheaper, but provides a poorer "service" in that delivery times would be longer than by

road, service frequency is less and delivery times are less reliable. If rail is to compete with sea, then very low access rates would be required.

Cabotage restricts the use of international vessels for the transport of domestic freight. Nonetheless, a BIE (1995b) survey of coastal shipping users in 1994 found that reliability of delivery time and care of goods were more important than cost or price. Survey respondents considered that approximately 85 per cent of their bulk and non-bulk freight arrived on time. (The majority of the non-bulk voyages were across Bass Strait, but there were also voyages servicing the east-west coast.)

Two main categories of *air freight* charges apply to scheduled services — the general freight rate and specific commodity rates. For comparable weights, general freight rates tend to be higher than specific commodity rates which involve restrictions such as size. In 1993, published air freight rates for shipments of less than 45 kg suggest that this mode of transport is most viable for high value, time-sensitive freight. As shown in Table A1, air freight rates tend to vary with the direction of the shipment.

Table A1: Published air freight rates for general shipments of less than 45 kg, December 1993

<i>Route</i> (<i>city originating = A</i>)	<i>flight distance</i> (<i>km</i>)	<i>\$US per kg</i>	
		<i>A to B</i>	<i>B to A</i>
Adelaide - Melbourne	645	.70	.74
Melbourne - Sydney	707	1.18	1.00
Adelaide - Sydney	1165	1.30	1.40
Melbourne - Perth	2705	2.50	2.40
Perth - Sydney	3278	2.80	3.00

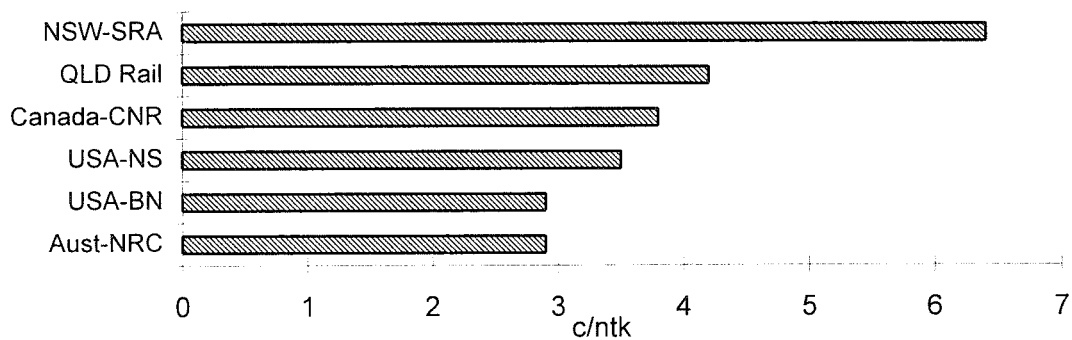
Source: BIE (1994).

International benchmarks

Microeconomic reform including deregulation, corporatisation (or privatisation) and, in some cases, the introduction of competition disciplines via mandating access to infrastructure can help the transport sector achieve best practice goals. The following paragraphs briefly summarise the benchmarking findings of BIE international benchmarking studies associated with the freight transport industries.

The BIE international benchmarking of coal and grain *rail freight* rates shows a varying picture. In 1993–94, coal rail freight rates tended to substantially above observed world best practice. However, grain rail freight rates, when adjusted for the length of journey, were broadly comparable with world best practice. International comparisons of rail freight rates for general (non-bulk) freight show that the NRC’s average line haul rate for its interstate network in 1994–95 was the lowest of all national and overseas railroads examined (Figure A1). However, the average charge by NSW’s SRA was the highest observed. (These freight rate comparisons were not standardised to adjust for different operating environments and regulatory arrangements between rail systems.)

Figure A1 International comparisons of unstandardised line haul rail general freight rates, 1993–94^a



^a Data are for 1993-94 or latest year available and were not standardised to adjust for different operating environments and regulatory arrangements.

Source: BIE (1995a).

The BIE (1995a) also found that, in the period from 1991–92 to 1993–94, the Australian rail system as a whole had moved over 40 per cent of the way toward best practice cost. However, the improvement required to achieve best practice costs varied significantly from system to system. In 1993–94, Queensland Rail and SRA had the largest gap between performance and best practice (27 per cent) and Australian National had the smallest (12 per cent).

Australia’s *coastal shipping* fleet has improved its productivity and fuel efficiency over the last decade (BIE 1995b). However, in June 1994, Australian coastal vessel costs for three representative vessels (bulk, product carrier and roll– on roll–off) were higher than the corresponding costs for vessels registered

in five of the seven countries selected as benchmarks. Only Japanese and USA registered vessels had higher costs.¹

Australia's *road* sector of the freight market is highly contestable and competitive. BIE benchmarking of Australian road freight found indicative price data suggesting Australian road freight rates are broadly similar to those overseas. The Bureau concluded that the competitive nature of the road freight industry in conjunction with the disciplines imposed by intermodal competition provided strong incentives for operators to provide a good level of service to customers (BIE 1992).

The BIE (1994) compared published 1992 *air freight* rates for under 45 kg general freight on over 100 routes, including 15 of Australia's domestic and international routes. The study revealed that Australian freight rates were among the lowest in the sample. For example, Sydney—Perth rates were in the range \$US2.80 to \$US3.00 per kg, while rates for overseas city pairs of a similar distance were higher (Atlanta—Los Angeles \$US2.60 per kg and Hong Kong—Jakarta \$US3.50 to \$US5.10 per kg).

¹ Vessel costs relate to the sailing segments of sea voyages and comprise capital, operating and voyage costs. The countries selected as benchmarks were the USA, Japan, New Zealand, Germany, Norway, the United Kingdom and Korea.

REFERENCES

- Braeutigum, R.R. 1984, 'Socially Optimal Pricing with Rivalry and Economies of Scale', *Rand Journal of Economics*, Vol. 15, No. 1, pp. 127-134.
- BHP (BHP Transport) 1997, *Submission to National Competition Council Regarding SCT Declaration Application*, April.
- BIE (Bureau of Industry Economics) 1992, *International Performance Indicators — Road Freight*, Research Report 46, AGPS, Canberra.
- 1994, *International Performance Indicators: Aviation*, Research Report 59, AGPS, Canberra.
- 1995a, *International Benchmarking, Rail Freight*, Report 95/22, AGPS, Canberra.
- 1995b, *International Performance Indicators: Coastal Shipping 1995*, Research Report 68, AGPS, Canberra.
- 1995c, *Issues in Infrastructure Pricing*, Research Report 69, AGPS, Canberra.
- BTCE (Bureau of Transport and Communications Economics) 1990, *Freight Flows in Australian Transport Corridors*, Occasional Paper 98, AGPS, Canberra.
- Buckley, P. and Westbrook A. D. 1991, "Market Definition and Assessing the Competitive Relationship between Rail and Track Transportation", *Journal of Regional Science*, Vol. 31, No. 3, pp. 329–346.
- Caves, D.W. 1985, 'Network Effects and the Measurement of Returns to Scale and Density for US Railroads', in Daugherty, A.F. (ed.), *Analytical Studies in Transport Economics*, Cambridge University Press, New York, pp. 97-120.
- Friedlaender, A.F. and Spady, R.H. 1981, *Freight Transport Regulation: Equity, Efficiency, and Competition in the Rail and Trucking Industries*, MIT Press, Cambridge and London.
- Hilmer Committee (Hilmer, F.G., Rayner, M. & Taperell, G.) 1993, *National Competition Policy*, Report by the Independent Committee of Inquiry, AGPS, Canberra, August.

- IC (Industry Commission) 1991, *Rail Transport*, Volume 1, Report No. 13, AGPS, Canberra.
- 1995, *Implementing the National Competition Policy: Access and Price Regulation*, AGPS, Canberra.
- 1997a, *Submission to the National Competition Council on the National Access Regime: A Draft Guide to Part 111A of the Trade Practices Act*, AGPS, Canberra.
- 1997b, *Telecommunications Economics and Policy Issues*, Staff Information Paper, AGPS, Canberra.
- ISC (Inter-State Commission) 1987, *An Investigation into a Potential Extension of Intermodal Rail Services*, AGPS, Canberra.
- IPART (Independent Pricing and Regulatory Tribunal of New South Wales) 1997, *Access Determination No. 1 of 1997 — Extract of the determination between Rail Access Corporation and National Rail Corporation Limited*, March.
- Jara-Diaz, S. and Winston, C. 1981 ‘Multiproduct Transportation Cost Functions: Scale and Scope in Railroad Operations’, cited in Keeler (1983), *Railroads, Freight and Public Policy*, Brookings Institutions, Washington D.C.
- Keeler, T.E. 1983, *Railroads, Freight and Public Policy*, Brookings Institutions, Washington D.C.
- King, S. and Maddock, R. 1996a, *Unlocking the Infrastructure: The reform of public utilities in Australia*, Allen and Unwin, Sydney.
- Langton, Mr. (NSW Minister for Transport) 1996, Transport Administration Amendment (Rail Corporatisation and Restructuring) Bill, Second Reading Speech, *NSW Legislative Assembly Hansard*, 17 April 1996.
- MacDonald, M. 1987, ‘Competition and rail rates for the shipment of corn, soybeans, and wheat’, *Rand Journal of Economics*, Vol. 18, No. 1, Spring.
- Mason, P. 1995, ‘The first Private Freighters to cross Australia’, *Network Magazine*, October, November, December.
- NCC (National Competition Council), 1996, *The National Access Regime: A Draft Guide to Part IIIA of the Trade Practices Act*, August.
- 1997, *Specialized Container Transport Application for Declaration of a Rail Service Provided by Rail Access Corporation*, Issues Paper, February.

- NRC (National Rail Corporation) 1996, *Annual Report 1995-96*.
- NRTC (National Road Transport Commission) 1993, *Investigation of Fuel-only Charges for Heavy Vehicles*, Investigation Report Prepared for Ministerial Council, May 1993.
- 1995, *Heavy Vehicle Charges: The Second Generation*, February.
- NSW Code (NSW Rail Access Regime) 1996, Established by the Minister for Transport, with the approval of the Premier, in accordance with section 19B of the Transport Administration Act 1988, August.
- NSW Minerals Council 1997, *Submission to National Competition Council Regarding SCT Declaration Application*, April.
- Noonan, R. 1997, 'Rail lobby targets govt's road subsidies' *Daily Commercial News*, 3 April, p. 1.
- Oum, Tae Hoon. 1979, 'A cross-sectional study of freight transport demand and rail-truck competition in Canada', *Bell Journal of Economics*, Vol. 10(2), pp. 463-82.
- RAC (Rail Access Corporation) 1996, *Access Pricing Policy*, September.
- 1997, *Submission to National Competition Council Regarding SCT Declaration Application*, April.
- SRA (State Rail Authority of New South Wales) 1996, *Annual Report 1995-1996*, State Rail Business Services.
- SCT (Specialized Container Transport) 1997a, *Application for declaration under s 44F of the Trade Practices Act for NSW portion of the Sydney-Perth railway*, February.
- 1997b, *Specialized Container Transport Submission to the IPART Arbitration between the RAC and the NRC supplied as an attachment to Application for declaration under s 44F of the Trade Practices Act for NSW portion of the Sydney-Perth railway*, February.
- Telford, C. 1989, *Meeting the Competition in Major Road and Rail Developments*, Australian Investment Conferences, Business Opportunities in Transport Reform, September.



A71307