Reforming the Taxi Industry in Australia

National Competition Council

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Rex Deighton-Smith, Principal Economist

The views expressed in this paper are those of the author and do not necessarily reflect the views of the National Competition Council

1. Description of the industry today

Taxis are regulated similarly throughout Australia. The regulatory structure has two key elements. Quality regulation sets minimum standards in relation to issues such as the age of vehicles, roadworthiness requirements, driver presentation and knowledge and access to radio dispatch facilities. Entry regulation restricts the number of taxis by requiring taxis to be licensed and limiting the number of licences issued. New licences are issued on an infrequent and *ad hoc* basis, with no consistent approach to pricing taken. This means that, in general, new entrants to the industry must buy the licence of an existing industry player.

There is a clear case for regulating quality standards in the industry on consumer safety and protection grounds. Such regulations address information deficiencies such as the consumer's inability to verify the safety of the taxi himself and provide enhanced levels of safety and, hence, of consumer confidence in the industry. Regulation of quality standards has been tightened in a number of states in recent years in response to community demands. Regulation of quality standards can achieve benefits in terms of safety, reliability and consumer confidence while imposing limited costs, as it does not materially restrict competition.

By contrast, the benefits of restricting entry to the industry are effectively zero, while the costs to consumers are extremely large. This fact has been widely recognised in the reviews of taxi regulation undertaken in each State and Territory as part of the National Competition Policy's legislative review requirement. One jurisdiction (the Northern Territory) has already deregulated entry to the taxi industry as a result of its NCP review. In all other jurisdictions, the reviews have recognised the problems caused by the entry restrictions and, in all but one case, have recommended significant regulatory overhauls to address them. In four cases (Victoria, New South Wales, Western Australia, ACT), the elimination of all restrictions on supply has been recommended. In Tasmania[1], and Queensland[2], a loosening of restrictions on entry, has been included among review recommendations, although these fall short of their complete removal. In South Australia, while no regulatory change was recommended, reliance on existing provisions for the issue of new taxi and hire car licences[3] was recommended as a means to remedy acknowledged under-supply.

This paper focuses specifically on regulation restricting the supply of taxis, as it is in this area that deregulation has the potential to yield major nett benefits to the community. Taxi plate values now approach or exceed $200,000 in most Australian capital cities and have been estimated to add around one third to the cost of taxi fares. Taxi numbers per head of population are well below those found in jurisdictions with free entry, or indeed those with less heavily restricted entry, and have been falling in all States and Territories in recent decades.

[1] At the time of writing the final report of the Tasmanian review had not been made public. However, it is understood that the recommendations in this regard are essentially unchanged from those contained in the "Draft Regulatory Impact Statement" which was publicly released.
[2] The Queensland review argues for a gradual move to a new regulatory regime focused on negotiated performance agreements between taxi booking companies and the government. It proposes that booking companies would have freedom to add new cabs in order to meet these standards. However, its references to proposals for the Government to lease licences casts uncertainty on the nature and extent of the loosening of restrictions proposed.
[3] The recommendations also include some loosening of restrictions in relation to hire cars.

2. *The NCP Reviews*

NCP reviews provide significant evidence confirming the extent to which government restrictions on entry have distorted the taxi market. For example:

- the Victorian review[4] found that a Melbourne taxi licence was valued at $259,100 in 1997, a real increase of 197% over ten years. Not one new taxi licence was issued during this period despite increased population, rising real incomes, and increased domestic and international tourism.
- the New South Wales Review[5] found that the value of a Sydney licence had increased from $208,000 in 1994 to $280,000 in 1998 – or approximately 35% in four years. No longer-term figures on licence values were given. However, it was noted that no unrestricted taxi licence had been issued since 1990, while demand (as indicated by radio bookings) has been growing by around 5% per annum in recent years. It was also found that the number of taxis in Australian capital cities varies from 0.77 per 1000 population (Perth) to 1.14 per 1000 (Sydney), while in the unrestricted taxi markets of Auckland and Wellington the numbers are 2.93 and 3.66 respectively.
- The Western Australian Review[6] found that real licence plate values had increased fivefold in the fifteen years to 1998, representing an average increase of 11% per annum. The 1998 value of a Perth taxi plate was estimated at $230,000, although the value at the time of writing (1999) was estimated at only $160,000[7]. The number of general licences is regulated at 0.86 per 1000 population, regardless of other demand increasing factors such as rising income and increased tourism.

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[4] National Competition Policy Review of Taxi-Cab and Small Commercial Passenger Vehicle Legislation. KPMG Consulting, Melbourne, 26 July 1999.
[5] Review of the Taxi-Cab and Hire Car Industries: Interim Report and Final Report, Independent Pricing and Regulatory Tribunal, Government of New South Wales, Sydney, August 1999 and November 1999, respectively.
[6] Review of the Western Australian Taxi Industry BSD Consultants, Economics Consulting Service, Estill & Associates. Perth, August 1999.
[7] The reduction is likely to be a reflection of uncertainty as to the prospect of future reforms that might reduce or eliminate plate values. To the extent this is so, it reflects an increase in sovereign risk.

- The market value of a licence in Darwin was estimated at $228,361 for the purposes of the compensation payments made in respect of the cancellation of existing licences that was implemented as part of the reforms introducted in 1998 in the Northern Territory.

The problems of inadequate supply and substantial capital values attaching to licences have not been limited to the capital cities. Reviews have found that, while the situation varies widely across regional areas, in many cases the capital value of licences is broadly similar to that in the capitals. For example, the Victorian review found that Melbourne's licence value of $265,000 compared with values of $260-265,000 in Dandenong, $210,000 in Bendigo and $200-230,000 in Ballarat, but only $60,000 in Yarrawonga and $73,000 in Robinvale. The Queensland review[8] found that licence values of $270,000 in Brisbane compared with values of $409,000 on the Gold Coast, $260,000 in Cairns, $279,000 on the Sunshine Coast and $255,000 in Rockhamption, but only $102,730 in Maryborough and $120,000 in Innisfail.

Rapidly increasing capital values for taxi licences have lead to the development of extensive secondary markets. Considerable trading in licences occurs in all jurisdictions, while a major proportion of licences are owned by investors, rather than taxi industry participants. For example, according to the Victorian review, almost 80 per cent of licences in the Northern Territory were leased or assigned prior to deregulation. Similarly, the Western Australian review found that sixty per cent of taxi plates in that state had been bought for speculative purposes. It concluded that the result was that:

> *"This puts ownership of the business (plates) out of the reach of most drivers and effectively transfers the social surplus from the consumer to the plate owner, bypassing the driver. This situation relegates most*

[8] National Competition Policy Review: Transport Operations (Passenger Transport) Act 1994. Queensland Transport, Government of Queensland, September 2000, p75.

drivers to minor roles in the industry with little hope of eventually becoming plate owners".

As noted above, the reviews have in most cases supported the removal of restrictions on the number of taxis. The NSW review stated:

"The Tribunal sees little point in continuing the restrictions on licence numbers in the long term".

but went on to argue that a transition period was necessary to ensure minimal disruption as the industry adjusted from a highly regulated environment to one characterised by much greater competition. It therefore recommended very limited licence releases in the immediate term and a further review in 2003.

The Victorian review stated that

"Public interest" restrictions on the number of taxi-cab and other SCPV licences, when combined with the existing level of fares, have caused considerable costs for consumers; $72 million per year in greater Melbourne for taxi-cabs alone by our estimate. There was little evidence presented that there was a comparable public benefit from entry restrictions…..There are likely to be dynamic as well as static efficiency costs arising from these restrictions".

The recommendation of this review is for a buy-back of existing licences, introduction of open entry with minimum quality standards and annual licence fees to fund the licence buy-back.

The Western Australian review found that

"Restricting plate numbers leads generally to a sub optimal number of taxis in the market as complaints from the industry, if plate numbers are too high, are likely to be more vocal than those from consumers if there are too few taxis…..Regardless of the sophistication of the

> *models used, it is highly unlikely that the market optimal number of taxis will be reached in a regulated environment".*

It recommended a buy-back of existing plates at full market value and the introduction of an annual licence fee of $300/week as a temporary measure to fund the buy-back.

Some reviews have surveyed international experience of taxi regulation and regulatory reform to support their conclusions. For example, the Victorian review noted that entry restrictions had been removed in recent years in New Zealand, in Sweden and (during the 1970s and 1980s) in a large number of cities in the United States. It also notes that restrictions in the United Kingdom (outside London, which has no entry restrictions) have been liberalised recently . The Western Australian review identifies a similar set of changes. Both reviews note that the impact of removing entry restrictions is highly dependent on the approaches to other regulation of the industry taken at the same time.

Some reviews have canvassed arguments suggesting that unrestricted entry may not yield the "optimal" number of taxis under certain (relatively restrictive) assumptions, citing a significant literature on this subject. For example, the Queensland review notes that:

> *"It is possible that setting maximum fares and regulating the intensity of use of taxi will have positive impacts for resource utilisation because of the possibility of over-supply and under-utilisation of taxis"*[9].

However, these arguments seem to be based on the presumption that taxi vechicles have no alternative uses and, effectively, discount the possibility of part-time taxis that are used for private purposes when not in use as taxis. Indeed, this is suggested elsewhere in the report, in a passage which indicates the circularity of this argument:

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[9] NCP Review: Transport Operations (Passenger Transport) Act 1994. Op cit, p130.

> *"….[Industry] participants suggested that seeking as high a utilisation rate as possible for each vehicle was a natural consequence of the high costs associated with the existing licensing regime…".*

Clearly, in the absence of these fixed costs, the pressure for high utilisation rates would be greatly reduced. But for the cost of the licence, a taxi is not a highly specialised vehicle vis-a-vis a private car.

Moreover, even if the theoretical possibility is accepted that a taxi market with free entry may yield sub-optimal resource allocation, judgements as to the desirability of intervention must weigh this possible "market failure" against the likelihood of "regulatory failure". The Queensland review notes that

> *"Ensuring taxis are used at optimal intensity before new taxi vehicles are introduced is, of course, a difficult regulatory exercise…"*[10]

The historical performance of Australia's current systems of taxi regulation strongly suggests that a regulated solution is unlikely to more closely approach the optimum. All have delivered declining numbers of taxis per head of population over time, despite increasing income levels and expanded tourist demand. This, together with the absolute size of the gap between taxi numbers in Australia's restricted markets and those in markets with free entry is so great as to indicate clearly that a too restrictive approach has been taken. These observations are consistent with a conclusion that a high level of "regulatory capture" has been demonstrated, with the interests of the industry being allowed to dominate those of the consumer.

The practical experience in Australia has clearly demonstrated that the extent of regulatory failure in this area can be expected to be far greater than any theoretically possible market failure.

[10] ibid, p130.

3. *Reform choices.*

Where high “asset” values exist, but the asset itself is intangible and a product only of past regulatory decisions creating artificial scarcity, regulatory reform can give rise to large windfall losses. The question of what attitude governments should take in this context necessarily arises and has been an element of a range of NCP reform decisions. The NCP agreements themselves contain no policy statements on this issue, and hence provide no guidance on ensuring equitable and consistent approaches. The NCP reviews of the taxi industry discussed above have not incorporated theoretical discussions to support their recommendations in relation to reform paths. Neither have they provided other substantial indications that these issues have received systematic consideration. This section of the current paper will discuss theoretical issues relating to reform paths, while the following section will apply some of the conclusions to the practical context of reforming the taxi industry.

3.1. *Who pays the cost of reform?*

One important perspective on the question of compensation is to consider it as an issue of who should bear the costs of reform. Immediate removal of all controls on the number of taxi licences would eliminate the current capital value of taxi licences. The sums involved are substantal: NCP reviews have estimated them at almost $1 billion in Melbourne, $1.2 - $1.4 billion in Sydney and $750 million in Queensland. These values represent the capitalised value of the increased stream of income available to taxi-owners (i.e. the economic rent) due to the supply limitation. Thus, if no compensation is paid, the loss of value represents a transfer from current taxi-plate owners to consumers of taxi services.

By contrast, payment from the budget of compensation equal to the current market value of licences implies that taxi-plate owners bear none of the costs of reform, while the taxpayer bears the whole sum. This therefore represents a transfer from taxpayers to taxi-service consumers. A variation on this option provides for the initial tax-payer funding for the compensation scheme to be reimbursed from the industry through an annual licence fee on taxi plates. This, broadly, is the scheme that has been implemented in the Northern Territory. This option, effectively an input tax on taxi services, implies that the costs of reform are shared between taxi-plate owners (new and existing) and taxi service consumers. That is, consumers will experience higher fares than in the absence of the licence fee, while owners will experience lower returns. The proportions of the reform cost effectively paid by each are determined by the elasticities of supply and demand for taxi services.

However, an additional impact of reform must be taken into account in considering the implications if different reform models. In addition to the transfers between groups discussed above, reform will yield a nett welfare gain due to the increase in the number of taxi trips taken as prices fall and availability rises. The Victorian NCP review estimated this benefit at approximately $6 million per annum for Melbourne, compared with transfers to consumers of $66 million.

This nett welfare gain will occur immediately if no compensation is paid and will also occur immediately if compensation is paid by the taxpayer. However, this gain will be largely deferred if large annual licence fees are levied in an attempt to reimburse payments made from the budget. This is so because the effects of the annual licence fee are equivalent to the current lease payments for licences. That is, like the lease payment (which effectively represents the annualised opportunity cost of capital used to purchase the licence), the licence fee is a cost that must be incurred in providing the service.

In the case of the Northern Territory, the annual licence fee has been set at about $16,000, which represents around 70 - 80% of the lease fee applying prior to deregulation[11]. Similarly, the Western Australian NCP review

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[11] Lease payments showed some volatility in the 2-3 years prior to deregulation, peaking at $25,000. The average fee being paid by lessees at the time of deregulation cannot be calculated precisely.

recommended a licence fee of $300 per week for metropolitan Perth, compared with then current lease rates of $380 per week. In these circumstances, the incentives for new entry to the industry will be considerably dampened, as most of the reduction in the cost of operating a taxi that would otherwise result from the effective abolition of licence values is counteracted by the need to pay the licence fee. To the extent that this is so, the majority of the welfare gains available from deregulation will not be obtained.

The Northern Territory experience seems to bear out this expectation. It has been characterised by a moderate increase in taxi numbers which in part reflects a transfer from hire car licences to taxi licences by many existing operators. In Darwin, for example, taxi numbers rose from 87 prior to deregulation to a peak of 137, before falling to a current level of 128. As hire car numbers fell by 10 over this period, it can be argued that the nett increase in taxi numbers since deregulation is (41 – 10 = 31), or approximately 36%. The current total represents around 14 taxis per 10,000 population, or around half the relative number found in major cities in the deregulated New Zealand market[12].

Northern Territory projections at the time of deregulation were that the licence fees are likely to repay the cost of the compensation payouts in 8 – 9 years. Recent indications are that this timeline may be extended by a further year or two. A delay of ten years or more in delivering the bulk of the consumer benefits of reform clearly represents a major difficulty with this approach to reform. Moreover, information from the NT government indicates that this notional payback period is in fact shorter than would otherwise be the case due to the inclusion of the licence fees received from other classes of commercial passenger vehicle (e.g. hire cars, mini-buses) in the payback

[12] While the increase in taxi numbers has been relatively modest, NT government sources indicate that significant benefits have already been observed in the market. Greater competition has resulted from the combination of expanded supply and an increase in the number of taxi networks. This has reduced waiting times and improved service, with consequent reductions in complaints received by the regulator. Fare discounting has also been observed, while niche marketing has begun to develop.

calculations[13]. Without such inclusions, which imply subsidies from the users of other classes of hire vehicle, the payback period would clearly be somewhat longer. These facts support the analysis presented in Section 4.1., below, which includes calculations that suggest that the time required to fund any such buyouts could be in the range of 15 – 20 years.

Alternative means of distributing the costs of reform between the parties can also be considered. A number of models can be postulated that would involve costs lower than that of paying "full market value" to existing licence holders and would therefore imply that licence owners would bear some reform costs. Some of these models are considered in Section 4, below.

3.2. Is there a "right" to compensation?

The issue of whether there is a right to compensation can be considered from the legal viewpoint as well as from the perspective of equity. While several NCP reviews have discussed the equity arguments surrounding compensation, none has addressed the question of a possible legal right to compensation. It is understood that legal advice requested by some governments has generally indicated that no legal right to compensation would be likely to be found to exist in the event of deregulation of entry to the taxi market. This seems consistent with the experience of reform to other sectors in which the "rights" lost due to reform have been entirely the creatures of past regulatory decisions, as is the case with taxi licences. In general, where payments have been made in such cases, they have been based on equity arguments in favour of compensation. In this context, the following discussion of possible "rights" to compensation is focused exclusively on the equity arguments that may be made in favour of compensation.

[13] Information in this section supplied by Mr Tony Sinclair, Director of Road Transport, Northern Territory Government, 8 December, 2000.

As noted above, the NCP agreements do not include any discussion of the issue of whether, and under what circumstances, the losers from reforms should be compensated. Thus, the question of compensation in relation to taxi reforms must be considered with reference to general principles. A number of industries have, in the past, been characterised by Government imposed supply restrictions and resulting intangible asset values.

A starting point in determining whether there should be a presumption in favour of compensation is the question of whether the asset owners have paid the government for the asset. Clearly, where a Government sells a right, there would be an argument in favour of compensation where the value of that right is subsequently compromised. However, in the case of taxi licences, very few have been sold by Governments at substantial prices. Most licences have been in existence for some decades and were originally issued at nominal cost.

A second consideration is that of whether licence-owners have undertaken substantial additional investments in connection with their use of the licence. Where other significant investments are required in order to employ the licence and, in particular, in cases where such investments have few alternative uses, there is an argument that compensation could be required. However, it is clear that this is not the case in relation to the taxi industry. Investments are relatively minor in relation to the cost of the taxi licence, being largely limited to the value of the taxi vehicle – a highly transferrable asset – and the costs of membership of radio networks. Thus, from this perspective too, there is no compelling argument in favour of paying compensation to licence owners.

A third perspective on compensation is that of how and when the licence was acquired. As noted above, licences have generally not been sold by governments, instead being allocated at minimal cost. However, licences have been fully transferable in most jurisdictions for many years[14]. As a result, the effective cost of the licence to current owners varies widely. For many, long-term ownership of licences has seen major capital gains accrue on the basis of modest initial investments. For example, a Melbourne licence purchased for around $25,000 in 1982 had increased in value by approximately 400% in *real* terms by 1997[15]. This represents an average growth rate of over 11% per annum, in addition to the returns available from leasing the plate over this period.

For recent purchasers, the cost of the licence is clearly considerable. However, the nature of their investment decision should be considered closely. It may be argued that the consistent regulatory approach taken by all state governments over 20 or more years – consciously choosing to slowly increase the relative scarcity of taxis in response to lobbying by taxi-plate owners – gave rise to a reasonable expectation among prospective taxi-plate buyers that a stable *status quo* was likely to continue. However, such a view tends to ignore the inevitability and necessity of government policy change and the high level of sovereign risk associated with the taxi-plate "asset".

Moreover, there is a strong argument that those who have purchased a taxi-plate since the signing of the NCP agreements in 1995 have done so in the face of clear signals from all governments that the existing regulatory regime was not likely to endure. The NCP agreements are transparent in nature, and encompass clear guiding principles and presumptions. There is a general presumption that competition should not be restricted, with a strong public interest test required to be met where that presumption is to be violated. Coupled with this is the explicit duty on all participating governments to review all legislation that restricts competition. These factors strongly suggest that post-1995 purchasers of taxi-plates have made their investment decisions in

[14] Licence transferability has efficiency benefits in a market characterised by constrained supply, by ensuring that the limited number of licences are operated by those who value them most highly. At the same time, they have contributed to the rapid growth in the capital value of licences and, hence, the difficulty of reform.
[15] KPMG, 1999, op cit, p55.

the clear knowledge of the strong possibility that current regulatory arrangements will not endure. To the extent that this is true, this clearly suggests that the payment of compensation to this group would be inappropriate.

The question of the nature of an investment in a taxi plate can also be considered in broader terms. Markets ensure that there is a clear correlation between risk and return. It is clear that the rates of return on investments in taxi licences during the 1980s and, in particular, the 1990s, have been high. Moreover, investments in intangible assets necessarily carry a relatively high degree of risk, while an asset such as a taxi-plate, whose entire value is dependent on government regulatory decisions, is arguably among the riskier intangible assets.

Taking these considerations together, it can be concluded that taxi-plate owners have invested in an asset with considerable sovereign risks attached to it in pursuit of high and rising historical rates of return. This perspective, too, tends to militate against the payment of compensation where governments choose to change the regulatory structure and, in so doing, remove substantial value from the taxi plates.

3.3. Compensation vs adjustment assistance

The above discussion has focused on the arguments for the existence of any "right" to compensation in the event of reform. It has concluded that such a right cannot readily be identified in the case of taxi licences. However, an alternative perspective is to consider the question of possible payments to existing licence holders by way of adjustment assistance. The general approach taken to the implementation of the National Competition Policy has focused not on notions of "compensation", but rather on whether there are sound social benefit arguments in favour of providing adjustment assistance to those affected by reform. Thus, in some cases significant assistance has been provided, while in others it has been much more limited, or even nonexistent. Given the above, this “adjustment assistance” approach should also be regarded as the dominant perspective in relation to taxi reform.

One key consideration in terms of adjustment assistance is that of whether substantial hardship would be likely to result in the absence of such payments. As noted above, for many owners, reductions in taxi-plate values will constitute the reversal of large “paper gains” made on the basis of relatively modest initial investments. However, for others, the possibility of hardship resulting from regulatory decisions that remove taxi-plate value is certainly real. It is most apparent in the case of small investors who have recently allocated a large proportion of their portfolios to the purchase of taxi-plates.

This “hardship” perspective tends to suggest consideration of the possibility of adopting different approaches to the payment of adjustment assistance, based on recognition of individual circumstances. It can be expected that arguments would be made that any such discrimination would violate equity principles. However, an understanding of the payments as being “adjustment assistance” suggests that what is acknowledged is not a right of redress against a change in government regulatory policy but, rather, an obligation on the part of government to address particular economic circumstances that could arise as a result. Thus, payments should be regarded as “*ex gratia*” in nature, rather than as representing compensation in the specific sense.

3.4. The pace of reform.

Where the starting point for a process of reform is that of a market highly distorted by the current and past regulatory regime, it is arguable that a gradualist approach to reform should be taken. The taxi industries in virtually all Australian States are clearly characterised by high levels of distortion. This is apparent, for example, in the almost three to one ratio between the number of taxis per head of population in New Zealand’s major cities, where free entry exists, and in Australian cities. Similarly, the Victorian NCP review noted in relation to US cities that:

> *"licence values were not nearly as high in US cities [prior to deregulation] as they are in Victoria currently.*[16]

Some NCP reviews have argued for a gradualist reform process. For example, the NSW review stated that:

> *"In the Tribunal's view, both industry participants and the DoT should have the experience of operating in a less restrictive environment before the complete removal of licence number restrictions is considered".*[17]

A number of distinct arguments are advanced in favour of staged reform. In general terms, a staged transition is often considered to be less disruptive, because it slows the rate of change experienced by industry participants, consumers and regulators. A related argument is that a transitional period allows the possibility of reconsidering the reform "endpoint" should unanticipated effects arise. A staged approach has also been proposed as a means of reducing or spreading out the costs of reform: staged increases in the number of licences will have some impact in delaying the decline in licence values, and may even provide the opportunity for the regulator to raise funds (which may then be directed to compensation payouts) by auctioning new licences in the short term.

However, substantial arguments also exist against staged reform. One fundamental point is that significant danger exists of the reforms being derailed long before completion. Given the past success of the taxi industry in lobbying to keep licence numbers tightly restricted, and in forcing the abandonment of previous liberalisation plans, there must be a serious risk of

[16] KPMG 1999. op cit, p123.
[17] IPART, 1999(b) op cit, p81.

such an outcome. Even where the full reform path is set out in legislation, as has occurred in some reform areas, this risk is not entirely eliminated. From an NCP perspective, there may be substantial difficulties in reaching a conclusion that reform obligations had been met until the reform path had been completed.

A further difficulty is that a staged reform process inevitably delays adjustment, keeping the industry in a state of disequilibrium over a period of years and potentially confusing and frustrating service providers and consumers alike, while radically increasing the complexity of the tasks faced by the regulator.

Related to this is the fact that a staged reform necessarily delays the delivery of the expected consumer and other economic welfare benefits. For example, the Northern Territory government has estimated that the licence fees it is currently imposing to fund its buy-out of existing taxi licences will take eight to nine years to recoup the $27 million that was expended. Should the number of licence-holders fail to meet expectations, this estimate could blow out substantially (see below). Thus, the specific benefits of reform are endangered by staged approaches, while the apparent failure of reform to deliver visible benefits risks undermining support for reform more generally.

Finally, while it is true that a staged reform process provides the opportunity to generate some funds that can be committed to compensation schemes (through licence sales), the size of this potential funding is likely to be less than some estimates have suggested, as indicated by the relatively low prices realised in past sales of restricted numbers of licences. There may also be a danger that the act of selling the licences at market value will compromise governments' position in relation to the payment of compensation, even where the specific conditions of sale are set out in advance.

3.5. The practicalities.

The legacy of decades of government failure to ensure that taxi numbers have increased in line with demand, coupled with decisions to allow free trade in licences, is that the cost of paying compensation to current taxi-plate owners at full market values would now be extremely high. As noted above, the costs incurred in the Northern Territory alone were around $27 million, while estimates for Queensland are are of the order of $750 million, for Sydney $1.2 – 1.4 billion and for Melbourne, $1 billion. This represents around $300 per resident of Melbourne or Sydney. Nationally the compensation bill would clearly total several billion dollars.

This, in itself, is a powerful pragmatic argument against paying compensation. In reality, there is little likelihood that governments will choose to commit funding on this scale. Therefore, to link reform with the provision of full compensation would, effectively, be to eliminate the possibility of substantial reform.

Staged reforms have been proposed in some NCP reviews as a means of funding payments to licence-holders without recourse to the consolidated fund. As was noted with respect to the Northern Territory's experience, this is likely, at best, to delay achievement of many of the benefits of reform. At worst, it may prevent them being attained at all. A key point to recognise is that while staged reform, involving the sale over a period of years of fixed numbers of additional licences can potentially generate substantial revenues, it cannot fund full compensation for current licence values. This was demonstrated by Gaunt and Black[18], who in 1994 modeled the impact on Brisbane licence values of the sale of an additional 15% of the current number each year over seven years, assuming that the 167% increase in total numbers thus achieved would eliminate licence values completely. Their analysis indicated that the owners of existing licences (then valued at $192,000) would receive compensation totalling only $58,345 given their assumptions. Their conclusion was that there was little reason to delay the

[18] The Unanticipated Effects of the Industry Commission's Recommendationson the Regulaiton of the Taxi-Cab Industry Clive Gaunt & Terry Black. Economic Analysis and Policy, September 1994.

consumer benefits of reform for up to seven years in order to fund a very partial compensation scheme – which returned less than 1/3 of the value of licences to existing licence-holders.

It should be noted, however, that Gaunt & Black's data is based on the assumption that compensation payments are divided among all licence holders – including those purchasing licences in the initial auctions. There seems no obvious reason to make this assumption, since the values attributed to each licence (and hence the prices bid) are based simply on a share of the remaining value of the economic rents during the transitional, reform period. Recalculation of the data on the assumption that only initial (year 1) licence holders receive compensation payments suggests a total compensation figure of $71,360. This represents a 22% increase in compensation for existing licence-holders, although their compensation would still total only slightly more than 1/3 (37.3%) of the initial value of their licences.

Discussion of reform options and paths must take account of practicalities such as those explained in this section. The failure to provide sound analysis and calculations to support recommended reform paths constitutes the single major failing of the NCP reviews of the taxi industry.

The following part of this paper attempts to address these deficiencies by reviewing a number of possible reform options and highlighting the implications of each. It concludes by presenting a preferred reform model for consideration. The preferred reform model reflects both the realities of the various options discussed and a conclusion on the question of the moral obligation to pay compensation which is derived from the arguments presented earlier in the paper.

4. Reform models

4.1. Staged reform – licence auctions vs licence fees

Proponents of staged reform models have essentially proposed two options. The first, suggested in the Industry Commission's 1993 report[19] and reviewed by Gaunt and Black (see above) is for the sale of a specified number, or percentage, of new licences on a regular – perhaps annual – basis until there are no remaining monopoly rents to underpin licence values. The question of the use of funds thus raised is open under this option, as it may be directed to pre-reform licence-holders or be retained by the consolidated fund. Under the latter option, existing licence owners bear the full costs of reform, although the delay implicit in the staged reform process provides some protection against hardship as a result of the reforms. The government receives a substantial net benefit, due to the proceeds of the licence sales[20].

The second variant of the staged reform option is that adopted in the Northern Territory, in which substantial licence fees are levied in the medium term in order to fund initial compensation payments from the consolidated fund. The duration and size of these fees will be a function of the size of the compensation payments made as well as decisions as to whether all, or only part, of the compensation paid should be recovered from these fees. It is the presence of the licence fee which implies that this is a "staged reform", since the demand for licences – and hence the equilibrium number of taxis – will vary with the licence fee. If the fee remains constant over time (as is apparently the intention in the Northern Territory), there is in fact only one "stage" of reform. However, it lasts for the duration of the imposition of the licence fee, as the reform path is only completed when the fee is removed.

[19] Draft Report into Urban Transport Industry Commission, Canberra, 1993.
[20] It should be noted that governments are likely to perceive major political difficulties in retaining substantial funds from licence auctions while existing licence-holders suffer the loss of the total value of their assets over a period of several years. It is therefore considerably more likely that, were a staged reform option of this type to be chosen, the funds generated would be used to pay at least partial compensation.

This is expected to be at the time at which fee revenue has met the cost of compensation payments made to pre-existing licence-holders.

While these options (i.e. staged release of licences vs licence fees) appear distinct, there is likely to be little to distinguish them in practice. An analysis of the recommendations of the Western Australian NCP review and a comparison with the reform path followed in the Northern Territory to date serve to illustrate this point.

The Western Australian review argued for the progressive release of new licences, with a cap on new licence issues each year to be equal to 20% of the existing number of licences. It proposed that licence fees of $300 per week be charged, compared with current leasing rates for plates of $380 per week.

If, as previous estimates have suggested[21], the cost of leasing the licence represents 25% of the total cost of running the taxi, then a 21% reduction in that cost would yield an increase in nett revenue to operators of around 5%. To determine the likely number of additional licences that would be demanded by potential taxi operators, assumptions are needed as to the equilibrium number of taxis in a market without licence costs.

This paper has noted elsewhere that the number of licences in New Zealand cities is in the range of 2.5 to 3 times that in most Australian capitals on a per capita basis. Consequently, a conservative estimate that the rents accruing to licences would reduce to zero given an increase in licence numbers of 150% is adopted. Spreadsheets contained in the appendices contain estimations of the total rent accruing to licences given different licence totals, the rent per licence and the implicit lease cost at each point, given this rent per licence figure. Extrapolation from this data suggests that a reduction of 21% in the cost of a licence, as proposed in the Western Australian review, would be

[21] IPART, 1999.

likely to yield a demand for approximately 15% more licences than the present number.

Given these assumptions, it is likely that a fully informed market would result in there being insufficient demand to take up all the 20% of additional taxi licences offered in year one at the price of $300 per week. However, it is likely that inadequate information would lead to a 20% increase in licences in year one. What is extremely unlikely is that the additional tranches of 20% of the base number of licences to be offered in subsequent years would be taken up, given that the price demanded would remain constant.

Thus, it is unlikely that the number of taxi licences taken up (as distinct from offered) will increase substantially while the $300 per week licence fee is being levied. The question then arises as to how long the fee would need to be in place to fund full market compensation, as was recommended in Western Australia. On the somewhat generous assumption that there is a sustained 20% increase in current taxi numbers, a total of $15,600 x 1160 = $18 million per annum will be collected from licence fees. The buyout cost for the existing licences is approximately equal to 968 X $180,000 = $175 million. Thus, revenue from fees (less administration costs) will yield about 10% of the compensation cost per annum.

A conservative 6% discount rate can be applied, suggesting that the revenue from licence fees would contribute about 4% per annum toward offsetting the compensation cost in the initial period. This implies that the full repayment of the compensation amount would require at least 16 years. During this time, the consumer and economic welfare benefits of reform would be, essentially, negligible.

This outcome can be compared with the reform path of the Northern Territory. In essence, the same approach – that of setting a licence fee that represents a substantial proportion of the pre-existing leasing rates – has been followed. The NT approach differs in that there was no cap applied to the number of licences to be issued, with free entry from year one, subject only to payment of the fee. As noted above, the result in Darwin has been a nett increase in licence numbers of around 36%.

Given that the licence fee has been set at a similar level to that proposed in Western Australia (in relation to pre-existing plate lease fees), there must be a presumption that below-normal returns are now being earned in the industry and that the number of plates on issue will tend to decline as other opportunities are sought[22]. To the extent that this is true, the key difference between the two approaches to reform is a transitional one, with larger numbers of operators entering then leaving the industry in the absence of limits on new entry.

Thus, it can be seen that the key determinant of the outcome of a staged reform programme is not the setting of notional limits on the number of new licences issued during the transitional stage, but the revenue sought to be raised to fund compensation. Estimates in the Northern Territory are that 8-10 years fee revenue will be required to recoup the costs of full compensation, even with the inclusion of other, non-taxi licence fee revenues[23]. By contrast, the above analysis of the Western Australian review proposals, which are broadly similar, implies a 16 year transition. Given that this is based on quite generous assumptions, a transition period of 20 years or more is also possible[24]. Relatively few consumer or welfare benefits are available during the transition.

By contrast, the scenario from Gaunt and Black (see preceding section) implies only a five year transition period, with significant consumer benefits available during the transition. In this case, however, only around 1/3 of the initial capital value of licences is returned to plate owners as cash

[22] The observation that Darwin licence numbers have already declined by around 7% from their peak seems to support this proposition.
[23] The inclusion of non-taxi licence revenues can be seen as an implicit consolidated fund subsidy.
[24] Such estimates can be compared with the adjustment package agreed for the dairy industry, which will see a substantial levy being imposed over a period of eight years. Similarly, a considerable proportion of the potential consumer benefits of reform are diverted into the levy funding adjustment assistance payments.

compensation. The total level of recompense to plate owners under a staged release option is somewhat greater than this cash amount, as they will continue to reap an enhanced stream of income from the licences over the course of the transition period[25].

4.2. Immediate reform

The above argument has shown that, notwithstanding the absence of a formal cap on the number of licences to be issued, the imposition of a substantial licence fee to fund compensation payments effectively constitutes a "staged reform", as the existence of the fee will keep licence numbers significantly below a free market level. Thus, immediate reform is predicated on the payment of any compensation from general budget revenue, rather than via industry levies. There is a sound argument for such an approach to reform to the extent that taxpayers and taxi passengers are the same groupand the immediate reform option allows the efficiency gains of reform to be obtained in year one, rather than after a delay of many years[26] . For example, in Melbourne, where the efficiency gains from reform have been estimated at $6 million per annum, the adoption of immediate reform in preference to a "licence fee" based option along the lines pursued in the Northern Territory could yield nett economic welfare benefits of the order of $100 million[27]. However, the limited political feasibility of such an option is indicated by the fact that where compensation has been paid due to recent major reforms in Australia, it has almost invariably been funded through some form of industry levy, whether paid in the first instance by consumers or producers.

[25] That is, the continued existence of restrictions on plate numbers enhances the returns to plate holders. The size of this enhanced income stream would progressively decline as further plates are released, reaching zero when the all demands for plates are satisfied at zero price (or, more accurately, a price equal to administrative costs).
[26] To the extent that State revenue collection is progressive, or at least non-regressive, such a funding mechanism will have positive distributional effects, given that taxi expenditures are proportionately greater as a percentage of income for lower income groups.
[27] This assumes that the licence fee would have a duration of around 20 years in order to fund the compensation paid.

5. A proposed reform model

5.1. Principles for reform

The above has argued that reform of the taxi industry that is based on full compensation funded via the industry necessarily implies extremely long delays in reaping the efficiency benefits of reform. Moreover, the delivery of benefits to consumers will be similarly delayed. Alternative models should, therefore, be preferred. The preceding sections of this paper have noted that there is unlikely to be any legal case for the payment of compensation and argued that there is no strong equity basis for compensation. Thus, reform models based on adjustment assistance payments, intended primarily to ensure the avoidance of hardship among individual licence-holders, should be favoured. The adjustment assistance model is also consistent with the approach usually taken in implementing NCP reforms.

Given the foregoing, a number of principles can be enumerated against which reform proposals can be measured. Reform proposals must:

- entail costs to government and consumers that are reasonable in relation to expected benefits;
- avoid causing undue hardship among existing licence-holders;
- deliver substantial consumer benefits in a visible and timely way;
- if implemented over time, include a detailed reform path specified at the outset and “locked in” through legislation or other means;
- ensure that opportunities for future regulatory capture are not provided.

A number of possible reform options might meet these criteria. The following model is proposed in order to indicate a feasible reform path and promote discussion of options.

5.2. Assistance payments

As foreshadowed above, the model is based on recognition that payment of full compensation to licence plate owners is neither desirable nor practicable. Governments would accept an obligation to minimise hardship for individuals, in particular, due to the reforms. This obligation would be met in practice by establishing a fund from which adjustment assistance payments could be made on a case by case basis. It should be clearly established that payments are *ex gratia* in nature, rather than constituting compensation in the specific sense.

A key feature of the model aimed at ensuring consistency of treatment and timely resolution of claims is that decisions regarding payments should be taken at arms length from government. A choice could be made between the creation of an independent body specifically to undertake this task and the use of of existing mechanisms, such as administrative appeals tribunals. The latter option is likely to be more timely and, potentially, less costly. However, the former option could allow for the appointment of people with specific industry expertise to the assessment panel.

The independent body would make its determinations on the basis of a set of guidelines approved by the government. These would set out broad principles for determining eligibility for payments. Key principles could include the following:

- The objective of the payments system is not to compensate licence-holders for the loss of asset value, but to ensure that individual hardship is avoided as far as possible by assisting adjustment.
- Consistent with the “hardship” basis for determining payments, assessments should be made on the basis of applicants’ overall financial position, rather than on the basis of their investments in licences alone.
- In no case should payments exceed the real value of the claimant’s initial investment in acquiring the licence.

- Account should be taken of past returns from the licence in determining the degree to which initial purchase costs might be regarded as being amortised over time. In general, there should be a presumption that long-term licence holders would receive relatively small payments, if any are made, in recognition that they have generally benefited significantly from the supply restrictions that were tightened during the 1980s and 1990s in most jurisdictions.
- Conversely, in the case of post-1995 purchases of licences, there should be a recognition of the increased degree of sovereign risk assumed by purchasers given the widespread dissemination of the NCP agreements, including the reform requirements and the transparent nature of the tests and principles to be applied. This should be taken as impacting negatively on claims for payment.
- In general, preference should be given to individuals over corporations and to holders of single licences or small numbers of licences in judging applications for payment. This reflects an assumption that corporations and larger investors are likely to be more sophisticated and to have made more deliberate choices to undertake investments with high levels of sovereign risks attached. As a result, they should be more prepared to bear the associated losses.

Despite the above limitations on payments, it is likely that the amounts to be disbursed would remain considerable. Therefore, the question of funding is a key part of the model. The key consideration must be to achieve a balance between a funding model that is feasible in political and budgetary terms and delivery of the benefits of reform to consumers within a reasonable timeframe. To achieve this, the model should combine funding from consolidated revenue with funding from the issue of licences. The relative share from consolidated revenue would clearly need to reflect jurisdictions' circumstances. However, the high degree of congruence between taxpayers and taxi-users as a group implies that there are few negative equity impacts from drawing on consolidated revenue, while the benefits include earlier achievement of real economic welfare gains and more rapid realisation of consumer benefits.

The previous sections of this paper have outlined two possible means of obtaining funds from the industry: funding the payments through the auction of a limited number of new licences each year and funding them through the adption of a significant annual licence fee combined with free entry. Both are capable of generating significant revneue. However, there are a number of reasons for preferring the latter option.

Firstly, this option immediately implements the principle of open access to the market. By contrast, an annual auction of a limited number of new licences – even if announced as part of a longer term programme with open entry as its end-point – preserves the notion of limitations on entry and the consequent risk that the reform programme could be derailed prior to completion by renewed lobbying from the industry.

Second, the benefits to consumers of this option are more immediate, by comparison with the most common variant of the "licence auction" model, which proposes a steady annual release of licences.

Third, it is probable that the licence fee option will yield greater consumer benefits for a given level of revenue generation. This is due to a likely tendency among potential licencees to underestimate competition, at least in the early years of deregulation, and thus endure sub-normal rates of return, with offsetting additional benefits for consumers.

Fourth, the licence fee option, because it is explicitly based only on an annual right (and a presumption of unrestricted access to a licence, subject to fee payment) avoids creating a situation in which the government has sold a restrictive right. This, in turn, avoids the possibility of creating an argument for future compensation.

6. An indicative example – reform in Melbourne

6.1. Base case: buyout at (real) historical cost

For illustrative purposes, some implications of a reform model along the lines suggested above are presented in the following section, using data for Melbourne. As a number of simplifying assumptions have been made and estimates have been incorporated where data is lacking, the results of this modelling should be considered as indicative only.

Victorian data show that a total of 1244 licences were transferred in the 4 ½ years to February 2000. This equates to an average of 276 licences per annum. Assuming that the frequency of transfers is similar in metropolitan and non-metropolitan areas, this implies that an average of 235 licences per annum were transferred in Melbourne over this period[28]. As no unrestricted licences have been issued in Melbourne since 1986/7, this annual number of licence transfers can be extrapolated backward as an estimate of turnover during the 1980s and early 1990s. An annual turnover of 235 licences on a base of 3299 represents a rate of 7.1% and implies that licences are sold on average every 14 years.

The following table uses these assumptions to model the cost of buying back existing licences at the real value of their initial purchase price.

[28] This analysis focuses on Melbourne, rather than Victoria as a whole, for the sake of simplicity, given that licence values in different parts of the state differ widely and that patterns of ownership may also differ. Given the preponderance of metropolitan taxis in the state total, this simplifying device is unlikely to materially affect the conclusions. There may, however, be reason for consideration of distinct approaches to the compensation issue in the case of the non-metropolitan taxi sector.

Table X: Real value of taxi licence purchases

Year purchased	Nominal price	Real price	Real P x 235
1986	59,600	94,776	22,272,360
1987	73,000	107,240	25,201,400
1988	95,500	130,650	30,702,750
1989	126,400	160,141	37,633,135
1990	110,800	132,359	31,104,365
1991	118,300	136,944	32,181,840
1992	129,200	148,448	34,885,280
1993	137,900	154,980	36,420,300
1994	138,100	152,293	35,788,855
1995	176,300	184,995	43,473,825
1996	210,375	216,155	50,796,425
1997	253,250	261,078	61,353,330
1998`	263,000	267,553	62,874,955
1999	284,450	284,450	66,845,750
Total			**571,534,570**

The table indicates that the result of simply adopting a strategy of providing payments equal to the real value of initial licence investments would reduce by almost 40% the funding required. The figure of $571.5 million given above can be compared with a figure of [3299 x $284,450 = $938.4 million] to fund a buyout at full 1999 market prices.

Such an option, while reducing the costs of reform by almost $400 million would mean no more than the appropriation of the paper gains made by licence owners since their purchase of the licence. Each would still receive the full (indexed for inflation) value of their initial investment, while their income during the period for which the licence had been held would mean that the total return to this investment would remain substantial. For example, recent purchasers who have assigned/leased their licences would have received a minimum of 8% on their investment[29]. For those who have held licences for longer, the rate of return would be vastly greater. For example, the average assignment revenue of $22,800 represents a real return of 24% on the purchase price of a licence held since 1986. The calculated average real rate of return over the period is around 14.7% per annum.

Thus, a model such as that applied above would imply that no licence holder would have received an annual rate of return on his investment of less than 8% per annum and that an average rate of return of around 12% per annum would be enjoyed by licence-holders as a group. Clearly, such a model would not result in any significant possibility of hardship being generated. Moreover, given that the paper losses implicitly borne by licence-holders represent nothing more than the reversal of paper gains that are solely attributable to poor decisions made by past governments not to increase licence numbers, it is difficult to see how there can be any serious objection to the adoption of such a scheme in preference to the clearly over-generous option of full market based compensation.

While the above model substantially reduces the costs of reform vis-à-vis the "full market price" model, it is clear that the cost to government and/or taxi consumers involved remains unacceptably high, while the cost to licence holders is, in some senses, notional. Some variants on this model can therefore be considered.

6.2. Historical cost discounted for "sovereign risk" of NCP

A simple variant of the above model would seek to take into account the fact that, regardless of any prior statements from governments on the future of taxi regulation, the announcement of the NCP agreement in 1994 provided a clear

[29] Based on data from the Victorian taxi review, p57, which cites an assignment fee of $1,800 – $2,000 per month. A mid-point has been taken, and compared with the 1999 licence value. Thus, this is the minimum return, as pre-1999 licence costs were lower.

indication that restrictive regulation was unlikely to continue. Thus, the payments to licence-holders should be adjusted to reflect the clear assumption of sovereign risk that was involved in buying taxi licences at any time since 1994. In practice, this could mean capping the (real) buyback price of a licence purchased since 1994 at the 1994 price.

Adopting this approach would reduce the costs of the package by a further $106.4 million, to $465.1 million, or slightly less than half the cost of a "full market price" payout. The implication of the change would be that real losses of up to 46% would be borne by recent purchasers of licences, with the most recent purchasers facing the largest losses and the smallest offsetting income returns from their licences. While this is arguably justified in terms of the willing acceptance of sovereign risk, the possibility exists that it would lead to hardship in some cases.

6.3. Buyout limited to licences acquired post-1990

As indicated above, the much lower purchase prices ruling pre-1990 mean that rates of return for long-term licence owners would remain extremely high under the first option discussed. Thus, an alternative that merits consideration is to limit payments to licence owners in order to reflect these historical rates of return and better equalise the total "after buyout" rate of return.

An arbitrary cutoff which paid the real value of licence purchase price to all purchasers after 1990 and no compensation to pre-1991 purchasers would mean that the buy-out cost was reduced to $424.6 million, or by around around $147 million (over one third) by comparison with the first option considered. A snapshot of the results of this option for those who just missed out on compensation suggests that:

- For a 1989 purchaser, the total real return of 105% over 11 years suggests that the implicit real average return would be near zero, at around 0.5%, but would remain slightly positive.
- For a 1988 purchaser, the total real return of 157% over 12 years suggests an implicit real average return of a respectable 4.75%.

It should be noted that the 1988 calculus is more representative, since the 1989 figure is affected by a "spike" in licence prices that year. Thus, it can be concluded that this option is also unlikely to yield significant hardship, while it further reduces buyout costs[30].

6.4. Sliding scale payments.

An alternative to the sudden cut-off in eligibility for buyout payments considered above is to apply a sliding scale to the real historical purchase price of a licence to determine the payout amount. This would be based on the date of purchase of the licence, with full compensation for recent purchasers and a declining proportion paid as the number of years for which the licence has been held rises. A range of options is clearly possible. The following two have been modelled and represent feasible options.

Option 1: 100% at year 1 since purchase, declining to 50% at year 10 and thereafter.

On this assumption, the percentage of the real purchase price paid out would decline by 5% for each year the licence had been owned, until a "floor" was reached at year 10. This option implies a total buyout cost of $429 million, about $142.5 million (or 33%) less than the cost of paying out real purchase costs fully.

[30] These calculations involve subtraction of the real value of the licence from the gross return – reflecting the absence of compensation to pre-1990 licence holders under this model – prior to calculation of the average annual rate of return.

This option implies that the purchaser of a licence in 1989 would receive 50% of the real purchase price, but would also have received an average annual (real) rate of return of 9.5% over the period of his ownership of the licence. Thus, the total return to the licence over 11 years is equal to 155%. This equates to an average real rate of return of 5% per annum[31] during the period of the licence's ownership, representing a reasonable asset performance and certainly not consistent with any notion of hardship.

Moreover, this figure is somewhat misleading, to the extent that the historical series shows a "blip" in the value of licences in 1989, as noted above. Replicating the same calculation with regard to a 1988 licence yields results of a 157% real return over 12 years which, together with the 50% real value payout would represent an average annual rate of return on the asset of 8.9% per annum (net of the initial licence investment).

Option 2: 100% at year 1 since purchase, declining to 50% at year 6 and thereafter.

Given the results of Option 1, above, it is appropriate to consider the outcomes of a steeper "tapering" of the licence cost payout. Under Option 2, the total buyout cost is reduced from $429.1 million to $377.3 million – a reduction of $51.8 million or 12.1%. It can also be noted that the implicit cost of $377.3 million represents only around 40% of the estimated cost of $938.4 million of a buyout at full market price.

The results for the purchaser of a licence in 1994 show an average annual real rate of return of 13.7% over six years, with a total return of 82%. If the proposed payout of 50% of the real purchase price of the licence is added to this, it equates to a total real return of 132% over six years, or an average

[31] Rate of return calculations in this section are based on the following calculation:
1. Sum of real annual returns & reform payout = total income from licence.
2. Total income from licence less initial (real) purchase cost = nett income from licence.
3. Nett income divided by number of years held = average annual income from licence.
In this example (9.5% x 11) + 50% = 155%. 155% - 100% = 55%. 55%/11 = 5% per annum rate of return.

annual real return of 5.3%. Again, such an outcome is clearly not likely to be consistent with any notion of hardship. Both of the indicative options suggested above appear feasible in terms of the principles enunciated for a reform model.

Other variants of the “sliding scale” option are clearly possible. One such variant would combine the sliding scale with the cut-off for pre-1991 purchasers considered above. This would, if applied to Option 2 as the base, reduce its implicit cost from $377.3 million to $303.8 million. A further variant would combine the logic of all three models: a sliding scale of payments, limitation of payments to post-1990 purchasers and discounting of payments to post 1994 purchasers due to voluntary assumption of NCP risk. This variant implies buyout costs as low as $266.5 million.

6.5. Funding the buyout

Previous sections of this paper have argued that achieving reform in a way that delivered early consumer benefits requires both:

- limitations on the quantum of total payouts; and
- a sharing of the cost between industry levies and consolidated revenue.

Modeling has been undertaken to determine the likely outcomes of different funding scenarios. The starting point used is the above buyout figure of $266.5 million, although it is noted that some other models implied figures that were not greatly higher and would have relatively little effect on the overall conclusions.

The models assume that payments to existing licence holders are made in year 1 and are funded by borrowing. Governments will make an annual contribution to the cost of funding the buyout from consolidated revenue over several years. Licences will be available to all applicants, subject to the payment of an annual fee, as in the Northern Territory. Estimates of the number of licences likely to be demanded have been made based on the following three assumptions:

- A 150% increase in licence numbers would result in the elimination of all rents accruing to licences due to supply restrictions.
- The rate of decline in total rents accruing to licences would be linear with respect to increases in licence numbers.
- The current 8% rate of return to leased licences can be applied to determine the price that would be paid as an annual licence fee given different licence numbers.

Given the above assumptions, a reform path including licence fee, numbers of licences demanded and expected total revenue can be projected. It should be noted that these assumptions are inherently conservative, for two reasons:

- Easier access to taxi licences would be expected to lead to some diversion of demand from hire car licence holders to taxi licences (with similar diversion of demand by customers).
- An overestimation of the likely revenues from licences would be expected in early years and may be sustained if licence fees change annually, as in Scenario 2.

Scenario 1: $10,000 licence fee maintained until buyout is fully funded.

Under this scenario, a licence fee of $10,000 is struck, representing a reduction of 57% on the current lease payment of $23,000. Given the above assumptions, a total of 5000 licences is expected to be demaned. This translates to an expected annual licence revenue of $50 million. Secondly a budget contribution of $10 million per annum over 5 years is assumed. Given a 6% real discount rate, this scenario suggests a that the present value of the revenue received over five years would equal approximately $253 million, and would therefore broadly result in the amortisation of the buyout cost over this period.

From the consumer point of view, this scenario implies an increase in taxi numbers of over 50% in year one, with numbers remaining constant for the ensuing 5 years. At the end of the 5 year "payback" period, licences would be issued at administrative cost and a very considerable further increase in taxi numbers (i.e. around 100% of the initial total) would be expected to result.

Scenario 2: Initial $11,000 licence fee, declining annually.

Two criticisms could be levelled at the above scenario. Firstly, while the consumer would see a substantial year 1 benefit, a new equilibrium would quickly develop and no additional gains would be reaped for a further five years. Secondly, the transition to an unregulated market (i.e. to one that was free of substantial licence fees functioning as additional operating costs) that would occur at year six would be sudden and potentially disruptive.

Scenario 2 would address both of these criticisms. It would do so by charging licence fees on a declining scale. Given an initial fee of $11,000, declining progressively to $2000, together with a similar contribution from the budget as in Scenario 1, revenue with a present value of $251 million would be generated by the end of year 7, while this would rise to $260 million in year 8.

This scenario therefore implies a longer transitional period. However, the extent of the consumer benefits is greater during the majority of the transition period, by comparison with Scenario 1. The number of licences would be slightly lower in year 1 (4880 vs 5000), but would rise to around 5200 in year 2 and to 6850 by year 7 (cf. a notional "free market" total of 8250).

Thus, a greater proportion of welfare gain from reform is available earlier, while the extent of the adjustment to a new equilibrium at the end of the transition period would be much less.

7. Conclusion

The scenarios outlined in the preceding sections indicate that taxi reform can be achieved at a strictly limited cost to government revenue, while avoiding hardship and inequity among current taxi licence holders. Under the base scenario analysed above, all licence holders would experience nett positive rates of return following the reform payments made, with the exception of those who had willingly assumed sovereign risks by buying licences since the announcement of the NCP reforms. Even this latter group would receive substantial payments. Government's contribution in the example of Melbourne would be limited to around $50 million over 5 years. The key element of this outcome is a refusal to convert the paper gains of existing licence holders to cash through the payouts. Instead, government captures these paper gains that have accrued to this speculative asset due to poor past regulatory decisions.

Finally, it must be noted that the examples given in the previous section are based on clear payout rules and imply a "compensation" mindset. This approach has been adopted due to the need to illustrate that the sums likely to be involved in a scheme to ensure hardship and inequity were avoided would be manageable. By contrast, estimation of the costs of a payout scheme based on an *ex gratia* view of "hardship minimisation" and using less defined guidelines would be considerably more difficult. Nonetheless, the body of this paper has argued for the adoption of the latter view. Therefore, the calculations presented in Section 6 should be considered in terms of an "upper bound" estimate of the likely costs of reform, though they would clearly come into play if a "compensation" based view of reform were taken in preference to that recommended here.

Earlier sections of this paper have enunciated a set of principles capable of guiding a payment system based on the alleviation of hardship. This model should be considered carefully by governments in determining the feasible extent of reform.