

**PASSENGER TRANSPORT  
CONTRACTING ISSUES:  
OUTPUT-BASED FUNDING  
AND AREA CONTRACTS**

**Transfund New Zealand Research Report No. 140**



# **PASSENGER TRANSPORT CONTRACTING ISSUES: OUTPUT-BASED FUNDING AND AREA CONTRACTS**

Booz•Allen & Hamilton (New Zealand) Ltd

**Transfund New Zealand Research Report No. 140**

ISBN 0-478-11098-7  
ISSN 1174-0574

© 1999, Transfund New Zealand  
PO Box 2331, Lambton Quay, Wellington, New Zealand  
Telephone (04) 473 0220; Facsimile (04) 499 0733

Booz•Allen & Hamilton, 1999. Passenger transport contracting issues:  
output-based funding and area contracts.  
*Transfund New Zealand Research Report No. 140. 33pp.*

**Keywords:** output based funding, subsidised deregulation, passenger  
transport, contracts

## **AN IMPORTANT NOTE FOR THE READER**

The research detailed in this report was commissioned by Transfund New Zealand.

Transfund New Zealand is a Crown entity established under the Transit New Zealand Act 1989. Its principle objective is to allocate resources to achieve a safe and efficient roading system. Each year Transfund invests a portion of its funds on research that contributes to this objective.

While this report is believed to be correct at the time of publication, Transfund New Zealand, and its employees and agents involved in the preparation and publication, cannot accept any contractual, tortious, or other liability for its use and make no warranties or representations whatsoever in relation to any of its contents.

This report is only made available on the basis that all users of it, whether direct or indirect, must take appropriate legal or other expert advice in relation to their own circumstances and must rely solely on their own judgement and seek their own legal or other expert advice in relation to the use of this report.

The material contained in this report is the output of research and should not be construed in any way as policy adopted by Transfund New Zealand but may form the basis of future policy.



# CONTENTS

<b>EXECUTIVE SUMMARY</b>	7
<b>ABSTRACT</b>	10
<b>1. OVERVIEW</b>	11
1.1 Introduction	11
1.2 Definition: Output-Based Funding	12
1.3 Stakeholder Problems And Objectives	13
1.4 Output Funding Rationale And Success Factors	14
1.5 Relation To Existing Funding Types	15
1.6 Developments And Experience To Date	18
<b>2. OUTPUT-BASED FUNDING FOR CONTRACTED SERVICES</b>	22
2.1 Objective For Output-Based Contracts	22
2.2 RFT/Contract Structure And Evaluation Issues	22
2.3 Basis For Payment Formula	23
2.4 Implications For Bid Pricing And Contract Costs	24
2.5 Implications For Public Authority Budgeting	25
2.6 Monitoring, Control And Auditing Issues	25
2.7 Legislative And Procedures Considerations	26
2.8 Conclusions On Output-Based Contracts	27
<b>3. AN ALTERNATIVE REGULATORY REGIME     - ‘SUBSIDISED DEREGULATION’</b>	29
3.1 Objective And Rationale	29
3.2 Description Of Regime	30
3.3 Merits Compared With Existing System	30
3.4 Legislative/Regulatory Implications	30
3.5 Funding Implications	31
3.6 Other Implications	32
3.7 Implementation Issues	32
3.8 Overall Evaluation	32
<b>4. OVERALL CONCLUSIONS AND RECOMMENDATIONS</b>	33
4.1 Conclusions	33
4.2 Recommendations	33





## EXECUTIVE SUMMARY

### **The project**

This report presents the findings of a project undertaken by Booz·Allen & Hamilton as part of the 1997-98 research programme of Transfund New Zealand.

The project had two principal objectives:

- To develop and assess proposals for output-based funding for passenger transport services in New Zealand.
- To review the merits of area-based contracts (rather than route-based contracts), particularly in association with output-based funding.

An earlier draft of this report was prepared to assist the work of Transfund's Passenger Transport Advisory group (PTAG) working group on output based funding. For this reason the main emphasis of the work was on the first objective, relating to output-based funding.

### **Definitions**

Passenger transport funding is said to be output-based if some or all the payment to the operator is dependent on some measure of output. The output measure selected is normally consumption related – e.g., passenger journeys or kilometres, but other measures of output are possible.

Area contracts occur when contracts cover an area, rather than a single corridor or route. Area contracts are usually, but not necessarily, on an exclusive basis.

### **Rationale and objectives for output-based funding**

The basic rationale for output-based funding (OBF) is that the primary benefits from operating public transport services relate to public transport use. OBF provides a direct financial incentive for the operator to increase public transport use and thus to increase public benefits.

Since the operator is closer to the customers and has a better understanding of the capital and operating costs involved than the council, the operator is in a better position to optimise the service provided by balancing benefits and costs. If the subsidy basis is appropriately chosen, the actions of the operator in seeking to maximise the commercial return will also maximise the net public benefit.

The objectives identified for output based funding are to:

- Make services more responsive to customers
- Give operators more flexibility
- Provide reward for effort
- Provide longer term security.

It is acknowledged that this may require longer contract duration's and larger (area based) contracts.

### **Developments and experience to date**

In the late 1970s the New Zealand Ministry of Transport subsidised operators on the basis of outputs. More recently, the concession fares competitive pricing procedure (CPP) is an example of output funding. This also illustrates the potential to target OBF to specific objectives.

Several Australian cities have adopted output based funding for their public transport services, in association with area-based (exclusive) contracts.

In Melbourne operators are paid on a 'commercial' scale irrespective of the actual fare paid. This 'commercial' fare was the basis for the tender bids. All revenue from multi-modal tickets is returned to the public authority, but the operators retain single trip revenue sold on the buses.

Adelaide adopted a funding formula of the form

$$\text{Payment (\$)} = \text{fixed payment} + 50\text{c/passenger} + 10\text{c/passenger km.}$$

Operators are paid on the formula instead of receiving the revenue. Tenders were evaluated on the fixed payment required.

The evidence to date is that the output-based approach has had some measure of success in encouraging service innovations and increasing patronage.

### **Success factors**

We consider that OBF is likely to be most successful where the following conditions are present:

- The public authority has objectives for passenger transport which can be reflected in outputs (e.g., related to numbers of passengers carried).
- The operator is given a large measure of autonomy in service (and maybe fare) specification. This works better where the operator has flexibility to operate services over a whole area, rather than limited to specific routes.
- The service output can be significantly influenced by service enhancements within the scope of the operator, i.e., the service 'elasticities' are reasonably high.
- The output-related payment (including revenue) is higher than the marginal cost of attracting and carrying additional passengers.
- The operator is given responsibility for developing the market over a number of years.

### **Output based funding for contracted services**

For contracts incorporating OBF, the payment formula will typically comprise a fixed component and an output-related component. In such a case we suggest that (as in the Adelaide model):

- The output-related payment rate be specified in the RFT.
- Operator price bids be on the basis of the fixed component.

This has the advantage of simplifying the tender evaluation process, and of ensuring that all bids incorporate the same output-related rate consistent with the public objectives.

Various approaches may be taken to determining the variable (output-related) component. This could be based on a prevailing 'commercial fare' scale; or related to the value of achieving objectives for additional patronage (e.g., reduced congestion). In general it appears that the variable component needs to be set higher than current fares in order to provide an effective incentive to operators.

There appear to be no legislative issues which would prevent the adoption of OBF for contracted services. Payments to operators must be pursuant to a CPP approved by Transfund. While the current CPP does not rule out OBF, OBF would be facilitated by the adoption of area contracts, whereas the current (standard) CPP appears to have been written with route contracts in mind. The CPP does not prevent area contracts, but the restrictions on contract size and duration would desirably be relaxed. Desirably, therefore, there should be a new or revised CPP written to address OBF.

Under OBF the service specification (routes, frequencies, capacities etc). Would need to be made less prescriptive, with the emphasis on defining the contract area and minimum standards for frequency, route coverage, hours of operation, capacity/loading levels etc.

### **Implications of OBF contracts**

If OBF is successful, operators will want to increase or decrease services to maximise their net income including subsidy.

It may be necessary to specify minimum service standards in order to retain some existing services. On the other hand operators will see opportunities to increase services, which will increase the subsidy required.

The impact of output funding on the contract price is likely to be dependent upon the expected level of competition for the contract. In mature markets without strong competition, tenders are likely to discount the revenue potential to minimise their risk. However in more competitive markets, tenders are likely to take a more optimistic view on revenue and thus require less subsidy.

With OBF, the marginal rate of operator payment is likely to be higher than the ticket prices. This opens the temptation for operator fraud: the operator could afford to buy tickets for phantom passengers in order to inflate patronage statistics. A minimum requirement for output funding would be an electronic ticketing system which recorded every ticket (including periodicals), together with regular auditing by the funding authority.

Our understanding is that fraud has not been perceived as a substantial problem in either Melbourne or Adelaide. Also, we are not aware of any suggestions that it has been a problem in the case of the CFS in New Zealand.

### **“Subsidised deregulation ”**

“Subsidised deregulation” is another way of introducing OBF. Under subsidised deregulation, the regional council would establish a subsidy formula which would be available to existing or new operators within the region, reflecting the objectives of the council. The rate could vary by target group, time of day and area served. Any existing or intending operator would be able to enter into a non-exclusive contract with the regional council whereby the operator agreed to meet certain requirements such as:

- Maximum fares,
- Integrated ticketing,
- Vehicle standards,
- Provision of information,
- Auditing,

in return for output-based funding at the standard rates.

The objective of a subsidised deregulation regime would be to create a quasi-commercial market for public transport such that operators acting 'commercially' optimise the service to the public. Subsidised deregulation provides incentives and rewards for superior performance and transparent value for money funding from the public purse.

It would still be possible for the council to contract for specific services which were not being met by the market.

### **Implications of “subsidised deregulation”**

The base legislation does not appear to preclude a subsidised deregulation regime.

Subsidised deregulation places no limit on the potential funding required. This creates some problems, but we do not consider them to be insuperable. Once the system is in place, changes to services are likely to be evolutionary, not revolutionary.

### **Conclusions and recommendations**

- OBF is likely to improve the delivery of regional council objectives provided these can be related to public transport outputs in a simple manner.
- There seems nothing to prevent regional councils initiating trials now with OBF contracts within the existing standard CPP.
- If there is support for the concept of OBF, an alternative CPP should be prepared which specifically addresses OBF issues and related issues (including area contracts).

## **ABSTRACT**

The report develops and analyses proposals for output-based funding (OBF) for passenger transport, including implications of output-based contracts, and the use of subsidised deregulation. Particular attention is given to reviewing area-based contracts as compared with route-based. It is concluded that OBF is likely to improve delivery of regional council objectives with regard to better meeting customer needs and increasing patronage.

# 1. OVERVIEW

## 1.1 Introduction

This is the final report of a project on passenger transport contracting issues undertaken by Booz·Allen & Hamilton for Transfund New Zealand as part of its 1997–98 research programme.

The project had two principal objectives:

- To develop proposals relating to output-based funding for passenger transport services and to assess the merits of this approach in the New Zealand context.
- To review the use of area contracts as an alternative to route contracts, and their applicability in the New Zealand context.

Subsequent to the start of the project, Transfund requested that the project should particularly address the requirements of the Passenger Transport Advisory group (PTAG) working group on output based funding. The original emphasis of the project was therefore modified somewhat, to focus primarily on the first of the two objectives and to meet the requirements of the working group.

An earlier version of this report was prepared for the working group and Transfund (draft paper February 1998, revised version May 1998). This final report is based on the earlier report, but with further discussion of issues relating to area contracts, and particularly their inter-relationship with output-based funding.

In preparing this report, we reviewed and built on several earlier papers provided by Transfund, principally:

- Output-based funding for passenger transport services - discussion paper (draft). Booz·Allen & Hamilton for, for Auckland Regional Council, 16 September 1997.
- Sinclair Knight Merz comments on the above, 28 November 1997.
- Output funding for Auckland rail services, Booz·Allen & Hamilton for Auckland Regional Council, 10 November 1997.
- Papers for working group meeting of 22 January 1998 (including amended terms of reference and YBC output funding model).
- Output/incentive based funding for passenger transport services. Incomplete draft paper, February 1998 (Allan Kennaird).

This report is divided into four sections:

1. Overview.
2. Output-based funding in the context of contracted services.
3. Consideration of an alternative regulatory regime ‘subsidised deregulation’ incorporating output-based funding.
4. Conclusions and next steps.

## **1.2 Definitions: Output-based Funding and Area Contracts**

### **1.2.1 Output-based Funding**

Passenger transport funding is said to be output-based if some or all of the payment to the operator is dependent on a measure of output. The output measure is normally consumption related – e.g., passenger numbers, passenger kilometres or some combination of these.

The operator may be paid output funding in addition to the fare revenue, in which case the output funding amplifies the fare revenue effect: this may be regarded as output funding as an addition to a net cost contract. Alternatively, output funding may be in place of the fare revenue, in which case it may be regarded as an addition to a gross cost contract. In the latter case, the financial impact on the funding authority depends on the quantum of the output funding relative to the fare revenue.

Output funding arrangements may be used in place of net cost contracts where integrated ticketing arrangements or substantial ‘off vehicle’ sales make attribution of the revenue collected difficult or inappropriate.

‘Pure’ output funding occurs where the total payment to the operator is based directly on the output measure. Commercial services, which are fully funded from the fare-box, may be regarded as an example of ‘pure’ output funding.

The ratio of the incremental payments to the operator to the increment in fare revenue as patronage changes is sometimes referred to as the amplification. If the funding authority retains the revenue, the amplification for an output-based contract may be more or less than 1.0.

### **1.2.2 Area Contracts**

Current passenger transport contracts are generally route-based or corridor-based. In Australia, the emphasis is on area contracts, with all the services in one area being provided by a single operator. (Area contracts are often referred to as ‘area franchises’. However, the term is inappropriate in this case. The area contracts envisaged are simply a larger version of route-based contracts. The term ‘franchise’ would usually imply an ongoing right to a territory and the right to ‘on-sell’ that territory.)

Area contracts provide greater scope (than route-based contracts) for optimised service planning by the operator, including integrated service design, opportunities for innovation, etc. Operators have the closest contact with the travelling public and might be expected to know the market best. In addition, they are the only party with the knowledge to organise optimum deployment of their resources.

With area contracts, a close relationship (‘partnership’) between the planning/funding authority and the operator is usually appropriate, facilitating the development of new routes and services in a co-operative manner.

Area contracts may be exclusive to a single operator, or non-exclusive, as discussed later in this report.

### 1.3 Stakeholder Problems and Objectives

#### 1.3.1 Existing System Problems/Deficiencies

Table 1 (left hand column) summarises the perceived problems with the existing passenger transport system of potential relevance to OBF, as perceived by the stakeholders represented on the working group (based on the working group meeting, 22 January 1998).

**Table 1. Stakeholder Problems and Output Funding Objectives.<sup>(1)</sup>**

Existing system problems	Objectives for output funding
Lack of competition for contracts (inhibited by CPPS?)	
Constraints on competition between PT modes (?)	Support area franchising along with OBF (why?)
Constraints on achieving quality partnerships etc which would help to achieve core objectives (?)	Support longer contracts as part of OBF, to strengthen operator incentives(?)
Transfund funding basis - overall cap and basis of distribution	
LPG Act restrains funding flexibility (benefit assignment constraints)	
<b>Operators</b>	
Excessive emphasis on competition (for its own sake), insufficient emphasis on service quality.	Provide greater flexibility to design services to better meet customer needs.
Service specifications overly prescriptive - inefficient, little scope for operator.	Strengthen business - customer linkage, enable to secure customer loyalty.
Little incentive for operators to expand or adjust services	Provide greater reward for efforts and long-term security.
Inadequate security of tenure - operators liable to lose major part of business at re-tendering.	
<b>Transfund</b>	
?	(part of current wider review of procedures)
?	More attractive services, to help to relieve traffic congestion (?)

Note: (1) based on OBF working group meeting, 22 January 1998.

There are clearly some differences of view between RCs and operators, but also a number of common points:

- Both parties appear to want a shift towards a 'partnership' approach, with greater emphasis on quality issues and on providing operators with greater scope and incentive to modify services to better meet customer needs.
- Operators put emphasis on achieving greater security and certainty, which may be achieved through this 'partnership' approach: RCs views on this are not clear.
- RCs appear to have some concerns about a current lack of competition (as it reflects on costs?); but it is not clear how they see a move towards a 'partnership' approach affecting this.

Both sides of the industry were extensively canvassed about their concerns with the (then) existing system in 1994 (review of passenger transport procurement procedures). A large proportion of these views will probably remain substantially unchanged and hence could be referred to if further evidence on industry views relevant to OBF were required.

#### 1.3.2 Stakeholder Objectives

The working group members have identified objectives that they envisage being pursued through OBF, as summarised in the right-hand column of Table 1.

The operators and the RCs appear to have similar views about what would be achieved by adoption of OBF and associated changes:

- Greater flexibility for operators to adjust services, along with appropriate incentives
- Longer contracts
- Larger (area-based) contracts.

Transfund has not identified specific problems with the existing system, nor particular objectives it would see OBF as assisting.

## **1.4 Output-funding Rationale and Success Factors**

### **1.4.1 Rationale**

The basic rationale for OBF (particularly in distinction to gross cost contracts) is that it provides a direct financial incentive for the operator to increase patronage (or other output measure). In order to do this, the operator will need to design and operate the service in such a way as to maximise its appeal to current and potential customers. OBF mechanisms will operate such that the operator will attempt to improve services, so as to increase patronage, as long as the extra payment thereby received exceeds any extra costs involved. The strength of incentive is dependent on the incremental rate of payment set.

The OBF approach is appropriate on the basis that:

- The primary purpose of PT is to carry passengers, and the number of passengers carried is a measure of socio-economic benefit created by use of the PT system.
- The operator should have a large degree of responsibility for improving the attractiveness to passengers of the PT service, as it is in a better position than the public authority to identify and pursue situations where services can be improved to attract extra passengers at relatively low costs (see discussion below).

As discussed below, the following may be regarded as particular cases of OBF:

- Commercial services
- Concession fare schemes
- Net cost contracts.

The particular feature of OBF is that it can provide an operator with an appropriate level of incentive (determined by the public authority, consistent with its objectives) in cases where, for whatever reason, fare-box revenue does not provide an adequate incentive to operators to design services to best meet the public authority objectives. OBF may enable operators to be faced with 'quasi-commercial' incentive signals in the absence of a fully commercial market.

### **1.4.2 Success Factors**

OBF is likely to be most successful where the following conditions are present:

- The operator is given a large measure of autonomy in service (and maybe fare) specification. This works better where the operator has flexibility to operate services over a whole area, rather than limited to specific routes (see below).
- The service output (patronage etc.) can be significantly influenced by service enhancements within the scope of the operator, i.e. the service 'elasticities' are reasonably high.
- The output-related payment rates are reasonably high, relative to the average cost of carrying passengers and the marginal cost of attracting additional passengers.



- The operator is given responsibility for developing the market over a number of years (i.e., not a short-term contract).

OBF is particularly appropriate in situations where any or all of the following apply:

- The public authority has objectives for passenger transport which may be reflected in outputs (e.g., related to numbers of passengers carried), but are not compatible with a fully commercial system.
- The fare-box cost recovery ratio is low.
- There is an integrated fares/ticketing system, such that the incremental farebox revenue taken by the operator does not provide an appropriate incentive (and may be unrelated to the passengers carried on the service).

### 1.4.3 Service Planning Responsibilities/Area Contracts

OBF provides the operator with the incentive to design services in a manner to attract additional passengers. However, the success of the approach is dependent on the operator being given the scope and responsibility to optimise the services.

On balance, there appears to be advantages for service planning to be primarily an operator responsibility, as is required for OBF to fulfil its potential. Operators have the closest contact with the travelling public, and should know the market best. In addition, they are the only party with the knowledge to organise optimum deployment of their resources. This is not possible under gross contracts except through joint planning of services. Even under net contracts, the operator may have little incentive to improve services where fare revenue only contributes a proportion of the cost on average. In the absence of minimum service constraints, the operator would often wish to reduce services.

Area contracts (which are common in Australia) give greater scope for optimised service planning by the operator than route-based contracts, which are currently the norm in New Zealand. It may be argued that OBF can only achieve its full potential where the operator has the flexibility of an area monopoly, or services are deregulated.

However it might be noted that:

- In most centres, operators have concentrations of contracts (and commercial services) in particular geographic areas, and hence tend to have de facto area contracts made up of multiple route contracts (although they do not necessarily have the flexibility to modify the individual routes).
- The competitive pricing procedures (CPP) itself does not appear to prevent area contracts, although there is a presumption in the guidelines that contracts will be route-based.

## 1.5 Relation to Existing Funding Types

### 1.5.1 Contracted Services

For contracted services in New Zealand, the two main models for contract funding currently used are:

- **Gross cost contracts** - where the operator is paid a fixed fee to operate specified services, and all fare revenue is returned to the contracting authority. The authority takes all the revenue risk, with the cost to the authority reducing if the service is successful in generating increased revenue. The operator does not directly benefit from additional passengers.

- **Net cost contracts** - where the operator is paid a fixed fee, and the revenue accrues to the operator. The operator takes all the revenue risk, and benefits from the revenue from additional passengers.

Most contracts in New Zealand are of the net type. Gross contracts are usually used in situations where patronage is particularly uncertain (e.g., new or trial services), and are often of relatively short duration.

A third type of contract, “composite”, is sometimes used: in this case the contract starts on a gross basis but is subsequently converted to a net basis when better patronage information becomes available.

Table 2 summarises, for gross, net and output-based contracts, the basis of operator selection through the tendering process, the basis of operator payment and the allocation of the revenue risks.

**Table 2. Gross v Net v Output Contracts - Evaluation, Payments and Risks.**

<b>Contract type</b>	<b>Tender evaluation basis</b>	<b>Operator payment basis</b>	<b>Revenue risks</b>
<b>Gross</b>	Minimum gross costs (fixed sum)	Payment on gross cost (fixed sum) bid; revenue returned to RC	RC takes all revenue risk: revenue at risk = fare revenue
<b>Net</b>	Minimum net costs (fixed sum)	Payment on net cost (fixed sum) bid; revenue also kept by operator.	Operator takes all revenue risk: revenue uncertainty = (actual fare rev - bid fare rev) RC bears no revenue risk.
<b>Output</b>	(a) fixed sum (with output-related payment scale specified); or  (b) output-related payment rate (with fixed sum specified); or  (c) fixed sum and output-related payment rate (more complex - not recommended)	Payment of fixed sum plus output-related payment according to passengers carried. Assumed revenue returned to RC.	Operator revenue = fixed sum + output-related payment. Operator revenue risk relates to output-related payment: may be greater or less than fare revenue. RC expenditure = fixed sum + output-related payment - fare revenue: RC revenue risk relates to difference between output-related payment and fare revenue: may be large or small (relative to gross contract) or zero (as in net contract).

Key features of note include:

- For output-based contracts, operator payment usually consists of a fixed component plus a variable output component (related to passengers, passenger kilometres etc.).
- In tender evaluation, it is usual to fix one of these components (most usually the output-related component) and to request operators to bid on the other component. Thus the unknown variable (patronage, etc.) does not come into the evaluation process, and the evaluation may be relatively straightforward.
- Once the contract is initiated, revenue risks to the public authority (regional council /Transfund) are zero on net contracts, related to the fare revenue amount on gross contracts, and related to the difference between the output-related payment and the fare revenue on output contracts.

- From the operator perspective, revenue risks are zero on gross contracts; related to the difference between the actual fare revenue and the bid fare revenue on net contracts; and related to the difference between the output-related payment and the corresponding figure assumed in bidding on output contracts.
- If the output-related payment is relatively small (sometimes known as a ‘gross cost plus incentive’ contract), the main revenue risk lies with the regional council (RC) (as it receives the fare revenue less the incentive payments). If the output-related payment is equal to the fare, there is no revenue risk for the RC. If the output-related payment is relatively large, then the risk for the RC is high (as it relates to the output payments less the fare revenue), but there is also a high risk for the operator.

### 1.5.2 Concession Fares

The current concessionary fare schemes (CFS) paid by some RCs in relation to commercial and (sometimes) contracted services may be regarded as a case of output-funding for specific (disadvantaged) groups. Operators are paid a revenue ‘make-up’, based on the numbers of passengers carried and the difference between their fare paid and the full adult fare.

Output-based funding through the CFS appears to have worked successfully in the context of both commercial and contract services.

### 1.5.3 Commercial Services

Fully commercial services are a type of ‘pure’ output-based funding: in this case the payments are equal to the fare revenues.

Note that some ‘commercial’ services rely on CFS make-ups to be fully ‘commercial’.

In the UK the ‘commercial’ services (which comprise 80-90% of all services outside London) are similarly dependent on wide-spread concessionary fare arrangements together with fuel tax rebates to be ‘commercial’; the major part of UK bus subsidies is paid through concessionary fare make-ups.

### 1.5.4 A Quasi-commercial Model

The above discussion suggests the option of a new regulatory regime under which:

- Output-related payments to operators would be paid for all passenger services (additional to or replacing the fare revenues).
- The appropriate rates of payment would be determined by each RC, having regard to its objectives and the effectiveness of carrying passengers by public transport in contributing to these objectives (e.g. by reducing congestion).
- Any operator could register whatever ‘quasi-commercial’ services it wishes (subject to similar constraints to those in the existing legislation), and would be paid output-related payments according to the passengers carried.
- There would be no necessity for separate ‘contracted’ services (except perhaps in very special cases).

This would essentially introduce a ‘quasi-deregulated’ regime, with effectively only one tier of services (as distinct from the current two-tier approach). Warranted subsidy payments would be determined based on the value of achieving specified objectives.

This is the model which is given initial consideration in section 3 of this paper (section 3.1 onwards).

## **1.6 Developments and Experience to Date**

### **1.6.1 New Zealand Developments and Experience**

#### **1.6.1.1 Historic developments**

In the late 1970s the New Zealand Ministry of Transport subsidised operators on the basis of outputs. The subsidy scheme (which was in addition to loans from the Urban Public Passenger Transport Council, and a bus replacement scheme in the main centres) incorporated four main components:

- A subsidy per passenger kilometre.
- A subsidy per peak bus.
- A subsidy per bus kilometre for evening and weekend services.
- A dollar for dollar subsidy for local council contributions.

This scheme was discontinued in 1981 when the Urban Transport Council was established as the source for all government funding for public transport. The UTC moved to a dollar-for-dollar type scheme for all payments, to encourage local and regional authorities to take an increased responsibility for public transport.

The Transit New Zealand Act (1989) transferred responsibility for funding to Transit New Zealand, and placed greater emphasis on funding methods. The Act required all passenger transport funding (from whatever source) to be subject to competitive pricing procedures (CPP), which were developed by transit. The public funding for services was shared between Transit and the Regional Council on the basis of standard proportions. These procedures have now been inherited by Transfund.

For 1997/98, the Transfund share of total public funding has theoretically been set at 40% for general (non-rail) services, para transit and shelters, and at 60% for rail services. However, these rates are theoretical, as a cap has been set based on the total passenger transport funding available to Transfund.

#### **1.6.1.2 Passenger Transport Advisory Group considerations**

In recent years the issue of output funding has been considered by the Passenger Transport Advisory Group (PTAG).

PTAG's appraisal concluded that, provided the rewards are tied to appropriate outputs, an output-based funding system could introduce strong additional incentives for operators to help tendering authorities meet their objectives. It suggested that an example of appropriate output might be passengers carried during peak periods.

They noted that there is a need to carefully consider the auditing requirements of any output-based funding contract. Trials would be required to test such matters as the technology required for auditing, cost of enforcement, and administration and operator response.

PTAG considered that initially not more than 20% of the total price of any contract should be payable as output-based funding in order to minimise risk.

Although the concept of output funding was supported in principle by PTAG, it was not taken further by Transit New Zealand

### **1.6.1.3 Recent developments**

There have been a number of examples of essentially output-based funding for passenger transport in New Zealand, including:

- The Tranz Rail contract for the Wellington rail services included a performance payment based on the number of peak passengers arriving at Wellington station. However, we understand that this feature has been dropped in the new contract negotiated most recently.
- The system of concessionary fare payments operated by most regional councils (under the CPP requirements) is essentially a form of output-based funding.

The ARC is currently exploring the concept of output-based contract funding in the context of its proposed enhanced rail transit system, for proposed new ferry services, and for bus services.

## **1.6.2 Australian Developments and Experience**

Generally the fare-box cost recovery ratios of bus and urban rail services in Australian cities are relatively low, typically below 50%. Funding is generally through one of the following approaches (or combinations of these):

- (a) Fare-box revenue plus fare-related (concession reimbursement) payments. An example is the Sydney area private bus services.
- (b) Fare-box revenue plus lump sum subsidy. Many of the public operators have traditionally been funded on this model.
- (c) Lump sum subsidy (with fare revenue returned to the public authority). The Melbourne private bus contracts have hitherto followed this model.
- (d) Output-based payments (with fare revenue returned to the public authority). The Melbourne national bus company services follow this model.

The following summarises the funding approaches being adopted in Melbourne, Adelaide and Perth, all of which have pursued types of output-based funding and area contracts over the last few years.

### **1.6.2.1 Melbourne**

Melbourne operates an integrated multi-modal zonal fare system, such that the revenue collected on any service may bear little relationship to the use of that service.

The ex-government bus services were tendered out in 1993/94, with bidders being required to nominate minimum levels of service and maximum 'commercial fare' (payment) scales. The successful operators are thus paid on their nominated payment scales for all general fare passengers: there is one payment scale for all adult passengers, another (half of this) for children. All revenue collected on the services relating to the multi-modal tickets is (at least in principle) returned to the public authority. The operators also offer bus-only (single vehicle) fares, for which the revenue is retained by the operator.

This approach has generally been regarded as successful in encouraging the operators to focus on increasing their patronage (where this can be achieved at reasonable cost). The contracts concerned have been in part area contracts, where there is more scope for modifying services to encourage patronage; and in part 'lines of route'.

A broadly similar approach is currently being pursued for all the other private bus services in Melbourne, as part of the restructuring of their contracts (which hitherto have been on a gross cost basis). Future payments will be negotiated in two components:

- A 'commercial' fare payment, based on the same payment scales as above.
- A 'fixed' payment component, which may be regarded as relating to the minimum service level specified by Government for each contract area (and reflecting that the 'commercial' fare payments alone will not ensure viability in many areas).

These restructured contracts are largely on an area basis, hence giving operators scope to modify services to encourage patronage. They are also for a relatively long period (10 years), thus giving adequate time for operators to develop the market in their area and reap the benefits in terms of increased income.

### **1.6.2.2 Adelaide**

In 1994/95, a reform process was started for the public transport services in Adelaide previously all operated by the State Government operator (now TransAdelaide). A key element of this process was the introduction of competitive tendering for all bus services, divided into thirteen contract areas.

The reform studies assessed a range of funding and service specification approaches against Government objectives, and a 'gross plus (output-based) incentive' funding formula was selected. This is of the form:

Payment (\$) =  $f + p(0.50 + 0.10 \times l)$ , where:

F = fixed sum (basis of operator bidding)

P = number of passenger boardings

L = average passenger trip length (km).

The second term is the output-related payment. The two coefficients (50c per boarding, 10c per passenger km) were selected to broadly approximate to a 'commercial' fare scale elsewhere in Australia. Typically in the order of half the total operator payment is through the first term, half through the second term. The payment structure is very similar to that being pursued for the restructured private bus contracts in Melbourne (see above).

To date about 50% of the Adelaide bus services have been contracted out. The SA Government has currently imposed a moratorium on further tendering, but we understand that tendering is likely to resume later in 1998. Prior to that, a review is being undertaken of the tendering/contracting experience to date, with a view to possibly making changes to future procedures (BAH are acting as the consultants in this review). One of the major issues to be addressed in the review is how successful the output-based funding/area contracts approach has been in encouraging operator innovation in service design and in encouraging competition for contracts.

### **1.6.2.3 Perth**

The Perth bus services have been subject to a reform process, involving the introduction of competitive tendering with area contracts, through a parallel process to that being followed in Adelaide.

In their first year, bus contracts have been essentially on a lump sum basis. In subsequent years, the lump sum payments will be varied according to the change in passenger numbers and passenger kms travelled. In principle, this approach is similar to the Adelaide approach.

#### **1.6.2.4 Effectiveness of the output-based approaches in Australia**

In Melbourne, the evidence to date is that the output-based 'commercial fare' approach adopted in the 1993/94 contracts has been largely successful in encouraging service innovations and increasing patronage. In its contract area, the national bus company has substantially increased off-peak frequencies, made some routing changes and introduced many mini-buses. Patronage appears to have increased by at least 10% (relative to the trend changes), mostly in off-peak periods.

In both the Adelaide and Perth cases, it is somewhat premature to assess whether the output-based funding approaches have been successful in increasing patronage. However it has certainly been noted that the approaches have resulted in some increases in recorded boardings, as operators now have the incentive to ensure that passengers validate their tickets on boarding.

## **2 OUTPUT-BASED FUNDING FOR CONTRACTED SERVICES**

### **2.1 Objective for Output-based Contracts**

The primary objective of contracting services through OBF (rather than through the net or gross funding approaches currently used) is to make services more responsive to the market and thereby to increase patronage and to provide better value for money in meeting regional (and national) objectives. This objective would be achieved by providing operators with greater incentive to improve and modify services in order to increase patronage. It is considered that operators should have the primary role and responsibility for service design (within overall service policies), as they are potentially best placed to understand the local market and optimise their use of resources. However, they need to be given appropriate scope and incentives to fulfil this role.

It is recognised that, to receive the full potential benefits of an OBF approach, it will need to be accompanied by:

- Less detailed specification (relative to current practice) of service requirements in RFT/contract documents.
- Minimum level of service standards for each contract, as a 'safety net'.
- Arguably, larger contracts, on an area basis, than are currently allowed within the standard CPP.
- Arguably, contracts of longer duration than are currently allowed 'within' the standard CPP.

This 'package' of measures would appear to go a reasonable way to address stakeholder perceived problems and objectives relating to OBF (refer Table 1).

### **2.2 RFT/contract Structure and Evaluation Issues**

#### **2.2.1 RFT/contract Structure**

Under the OBF approach, changes would need to be made to the service specification and operator payment aspects of the RFT/contract documentation. These would principally relate to:

- The service specification (routes, frequencies, capacities etc.). These would need to be made less prescriptive, with the emphasis on defining the contract area and minimum standards for frequency, route coverage, hours of operation, capacity/loading levels etc.
- The Fares. The fares would continue to be specified. (further consideration is needed as to whether operators should be allowed to charge fares below the specified scale).
- The payment formula. This will need to be specified (refer discussion above).
- The treatment of fare revenue and concession fares. This will need to be specified.
- The basis of tender evaluation (see below).

#### **2.2.2 Tender Bid and Evaluation Basis**

Typically the operator payment formula will comprise a fixed component and an output-related component. In such a case we suggest that:

- The output-related payment rate be specified in the RFT.
- Operator price bids be on the basis of the fixed component.



This has the advantage of simplifying the tender evaluation process (in price terms it becomes a simple comparison of the fixed bid components); and of ensuring that all bids incorporate the same output-related rate consistent with the public objectives.

The alternative is to eliminate the fixed component and require tenderers to bid on an output-related ('commercial fare') rate. The basis of evaluation in this case is somewhat more problematic. At first sight, the preference would be for bids with the lowest rate, suggesting the greatest efficiency. However, there is the danger that a bid with a low rate would indicate a less expansionist approach than one with a higher rate.

### **2.3 Basis for Payment Formula**

Under the OBF approach, the operator payment is usually structured as:

- A fixed component; plus
- A combination of passenger boardings and passenger kilometres.

The first component may be zero (i.e., 'pure' output funding, as in a commercial situation), or even negative.

The second component may relate to boardings only, passenger kilometres only, or some combination of the two. The approach often pursued is that the second component approximates to a 'commercial fare' formula (with flagfall and tapering distance elements): in this way the operator is faced by an approximation to commercial market incentives in taking marginal decisions on service changes. This approach has essentially been adopted in Melbourne and Adelaide.

However, there are other issues to be considered in setting an appropriate payment formula. It may be more appropriate to set marginal payment rates so that they better reflect regional/national objectives relating to public transport. For instance, where a major objective is to reduce car travel by encouraging transfer to public transport, payment rates could be set based on the marginal benefits from reducing car travel (in terms of reduced congestion etc), allowing for the cross-elasticities between car and public transport and that not all additional public transport passengers would otherwise be car drivers. Adoption of this approach would imply the setting of different rates at different time periods, in different corridors and possibly in different directions (relating to the degree of congestion etc.).

The marginal payment rate that is adopted will directly govern the degree of incentive faced by operators to improve/expand services in order to increase patronage:

- If the marginal payment rate is low, then there will be few situations where it will be worthwhile for the operator to expand services (i.e. where the marginal revenues exceed the marginal costs); and conversely many situations where it would be worthwhile to reduce services. Thus there will be a need for minimum service standards where such service reductions are seen as unacceptable.
- If the marginal payment rate is high, then there may be many situations where it will be worthwhile for the operator to expand services, and it may be able to make high profits in some of these. The result may be substantial additional services, substantial increases in patronage, but also substantial increases in funding requirements.

It appears that with the present net cost contracts the marginal payment rates (equating to the fare revenue) have generally been insufficient to encourage operators to adopt expansionist policies. This may be in part because of the contracts being constrained to a

route basis and being of a relatively short duration. However, in any event it is unsurprising given the evidence on marginal cost structures and market demand elasticities.

Increases in marginal payment rates seem likely to be required if the approach is to be successful. Our suggestion, for initial trial purposes for bus services, is that payment rates be set using a fare-type function so as to approximate to average costs on the service, and thus to largely eliminate the fixed component, i.e.:

- Payment rate (average) = total (gross) costs/total (current) patronage.
- Payment rate structure = flagfall + \$X × distance.

Further consideration would need to be given to rates for services by modes other than bus.

## **2.4 Implications for Bid Pricing and Contract Costs**

The impact of output funding on the contract price is likely to be dependent upon the expected level of competition for the contract.

For example if the contract is in the form of a fixed (net) payment plus a rate per passenger km, with the bidding being for the fixed component, the tenderer will estimate the patronage and thus the OBF in order to calculate the revenue from all sources. If competition is likely to be limited, a prudent operator will take a pessimistic view of the patronage and revenue potential, resulting in a higher contract price than without OBF (for a given patronage level).

On the other hand, if competition is strong, some operators are likely to take an optimistic view of the patronage and revenue potential, and will put in lower bids accordingly. The prospect of other bidders taking an optimistic view would push all operators to assume as high a patronage as they dare. If one or more operators bids on the basis of potential increases in patronage, this will drive the contract price down.

A mature market with existing operators may also tend to result in low patronage estimates and thus higher contract price. Some UK bus sector research suggests that most net contracts (which are a form of OBF) result in higher costs to the public authority than if the contracts had been gross. (This assumes that the revenues obtained would have been as high under gross contracts - this may not be the case).

Conversely a market with active new entrants is likely to result in higher patronage estimates (as the new entrants think they can do better) and thus low contract prices. The UK rail franchise experience appears to be an example of this.

If the successful operator meets the patronage target used in developing the tender price, the cost to the RC is likely to be close to that which would have eventuated under a net contract. If the tenderer beats the target, the cost to the RC will be higher. As noted above, if the market is uncompetitive with incumbent operators, targets will tend to be conservative; while if the market is competitive with new operators bidding, targets are likely to be optimistic, and the net cost to the RC will be lower.

The total cost will also depend on the potential of OBF in attracting additional patronage.

If OBF is at a high enough level to make it worthwhile for operators to increase services in order to gain more patronage, tenders will be put in on this basis. In comparing two bids, the higher service bid will win (other things being equal) if the OBF payments for the extra

patronage assumed exceed the extra cost. Hence it should be expected that the service levels and subsidy cost of the tenders received will be higher than under net contracts.

Similarly it could be expected that after contracts are let, operators will find additional scope for increasing services and patronage, further increasing RC subsidy costs. Of course provided OBF is set at an appropriate level, the RC should be happy that this is the case. It does suggest, however, that when setting the rate of subsidy, the likelihood of patronage growth and the effect on the budget should be considered.

We conclude that if current contracts were converted to OBF, with a reasonably generous marginal payment rate, the service offered and the subsidy required are likely to increase. The subsidy required for a given level of service will increase or decrease depending on the competitiveness of the market.

## **2.5 Implications for Public Authority Budgeting**

Output funding introduces uncertainty into budgeting annual expenditure compared with the current approach. There are (at least) two ways the RC can approach budgeting:

- It could use its own estimate of future patronage and base the estimated OBF on this.
- It could ask the bidder to include a patronage estimate, and use this for budget estimation.

In a mature market where the expectation is that operators will make pessimistic patronage forecasts, the first approach is likely to result in better budget forecasts. Major innovation leading to radical changes in funding requirements are unlikely.

Where a contract is won by a new entrant, or new services are involved, use of the operators' estimates may be preferable. Their likely optimism or pessimism will (as discussed above) depend on the expected competition for the contract.

A conservative RC would budget on the higher of the tenderer's or its own estimate.

## **2.6 Monitoring, Control and Auditing Issues**

### **2.6.1 Monitoring of Outputs**

Under OBF, full monitoring/recording will be necessary of those output measures that form the basis of payments (e.g., passenger boardings, passenger kilometres).

Electronic ticketing (ETM) allows full recording of passenger boardings (provided passengers are required to validate tickets on all boardings).

Any distance-related element is likely to relate to average distance travelled per passenger or number of sections travelled. In systems with section-based fares, the simple approach is to set a payment rate for each section, with monitoring therefore relating to the number of tickets sold by section.

In Adelaide (as an example), payments are a linear function of distance travelled, so the average trip length on each contract is monitored through periodic on-board surveys. While this involves significant costs, these are small relative to the payments involved.

The most efficient monitoring/reporting approach will need to be assessed in each case, depending on the payment function and the extent of ETM data available.

### **2.6.2 Control and Auditing**

With OBF, the marginal rate of operator payment is likely to be higher than the ticket prices. This opens the temptation for operator fraud. The operator could afford to buy tickets for phantom passengers in order to inflate patronage statistics and receive additional payments.

It is therefore likely that a minimum requirement for output funding would be an electronic ticketing system which recorded every ticket (including periodical tickets), together with regular auditing by the funding authority to check for unexplained differences between ticket sales and use, and unusual usage patterns.

Our understanding is that fraud has not been perceived as a substantial problem in either the Melbourne or Adelaide OBF cases, also we are not aware of any suggestions that it has been a problem in the case of the CFS in New Zealand.

## **2.7 Legislative and Procedures Considerations**

There appear to be no legislative issues which would prevent the adoption of OBF for contracted services provided this was consistent with a CPP approved by Transfund.

The current (standard) CPP appears to have been written with route contracts in mind and does not appear to envisage contracts with OBF. The CPP guidelines (section 3.2) state that:

*“the service specification ... Should include general route, approximate termini, minimum frequencies and minimum passenger capacities by time of day, revenue type and maximum fares to be charged. There are three principal contract revenue types, gross, net and composite, as defined in section 1.8”*

Neither this guideline nor any other parts of the CPP appear to preclude OBF contracts. We believe that OBF contracts could proceed within the current (standard) CPP.

However, there are parts of the CPP which may restrict the full potential of contracts using the OBF approach:

- Tender size (CPP 3.4). The current CPP specifies the normal maximum tender size (500 seats at any one time, except for ferry services), although flexibility is allowed in certain circumstances. However, area contracts may often require larger tender sizes than this.
- Area contracts. The CPP appears to assume contracts will be for routes rather than areas. Although not essential, area contracts would be preferable for OBF to be effective. The ability of RCs to let area contracts should be clarified.
- Contract duration (CPP 3.7). The usual maximum length of contract is five years. This may be seen as insufficient to gain the full benefits of the OBF approach. (We note that the guidelines for regional alternative CPPs incorporate provisions for having contracts of up to eight years, including renewals.)

Given that OBF for contracts is not envisaged in the current CPPs, and given these potentially restrictive aspects, it would appear appropriate to make modifications to the standard CPP to achieve the full potential of OBF. These modifications could be through a

change in the standard CPP or by RCs developing regional alternative CPP(s) for Transfund approval.

## **2.8 Conclusions on Output-based Contracts**

Our principal conclusions in relation to adoption of the OBF approach for contract services are as follows:

1. The current contract system has not been very successful in promoting innovation and encouraging modification to services to better meet customer needs and increase patronage. Operators are generally the most appropriate party to take responsibility for adjusting services to best meet market needs, but are currently provided with inadequate scope and incentives to do so (whether under gross or net contracts).
2. OBF contracts could potentially go some way to overcoming this deficiency and meeting some of the problems and objectives perceived by operators and RCs.
3. To be fully successful, OBF contracts should be accompanied by:
  - Less detailed service specification, but with minimum standards
  - Larger size contracts, preferably on an area basis
  - Longer duration contracts (arguably).
4. OBF contracts would typically involve two payment components: a fixed sum (which could be positive, negative or zero); and a variable component relating to passenger boardings and/or passenger kilometres (or a modified fare scale).
5. Various approaches may be taken to determining the variable (output-related) component. This could be based on a prevailing 'commercial fare' scale; or related to the value of achieving objectives for additional patronage (e.g., reduced congestion). In general it appears that the variable component needs to be set higher than current fares in order to provide an effective incentive to operators.
6. We suggest that OBF tenders be structured such that:
  - In the case of two components in the payment formula, the variable component be specified by the RC, and operators bid on the fixed component.
  - If the fixed component is set at zero, operators bid on the variable component.
7. The effect of the OBF approach on contract bid prices is unclear. Much will depend on the perceived level of competition. If the level of competition is low, bidders are likely to take a conservative view, discount their patronage expectations and hence increase their effective bid prices (relative to net tenders) for a given level of patronage. The reverse will tend to be the case if the level of competition is high.
8. Unlike with net contracts, public authority payments will be dependent on the actual level of patronage (not just the level assumed in the bidding process). If the OBF approach is successful in increasing patronage, this will tend to increase public authority payments. In cases of low competition, actual payments are expected to be higher than with net contracts; in cases of greater competition, it is unclear whether they will be higher or lower. Any changes in funding need to be judged in the light of the potential patronage gains.

9. OBF contracts could be adopted within the existing standard CPP. However, the adoption of the full package of supporting measures is likely to require CPP changes in terms of tender size, area contracts and (possibly) contract duration. These could be by way of changes to the 'standard' CPP, or through development of regional alternative CPPs for Transfund approval.
10. There seems nothing to prevent RCs now initiating trials with OBF contracts (within the existing standard CPP), provided that this can be done within the current contract size and duration constraints.

### 3. AN ALTERNATIVE REGULATORY REGIME - 'SUBSIDISED DEREGULATION'

#### 3.1 Objective and Rationale

The objective of a subsidised deregulation regime would be to provide an environment where operators acting 'commercially' optimise the service to the public.

It can be shown that national benefits are maximised with a public transport fare which is less than the average fare.

Thus a subsidy of some form is required for optimum service levels to be achieved. The current approach in New Zealand (as in most countries) is for the level of service to be specified by the funding authority (i.e. the regional council). Tenders are then called for provision of the specified level of service. There is no way of ensuring that the service level selected is optimal except that (in theory at least) if the level specified was lower than a 'commercially viable' level, operators would nominate the services for commercial registration.

Operators should know the market best and be in a position to optimise the use of resources, so there would be advantages if service planning were an operator responsibility. If output funding were introduced in such a way as to give the operator a 'commercial' fare this would provide sufficient revenue for the operator to provide an optimal level of service. However it would not necessarily generate an appropriate operator response if the operator were in a monopoly position. Under normal assumptions of fare and service elasticity, a monopoly operator could increase profits by holding service levels lower than the optimum.

The 'simple' solution would be to allow open entry to the market so that any operator making monopoly profits would attract attention from potential rivals. Even if no actual competition ensued, this would encourage operators to maintain service levels at or near the optimum.

It could be argued that such a regime simply replaces the problem of identifying the optimum service level with that of identifying the optimum fares. However, the latter is much simpler in concept. Welfare maximisation (in the economic sense) can be shown to be maximised by a farebox recovery in the order of 60%: a number of RCs have adopted fare recovery targets of about this level.

The user benefits of scale which arise from adopting optimum fares all accrue to users and some people would argue against subsidies from non-users for this reason.<sup>1</sup>

The other major economic efficiency reason for subsidising urban public transport is the "theory of the second best" whereby public transport use is encouraged in order to reduce uneconomic road use. By making assumptions about the cross-elasticity between public transport and car use, it is possible to derive the maximum subsidy per passenger (or passenger kilometre) the regional authority should be willing to pay to attract passengers to public transport.

---

<sup>1</sup> The benefits can be achieved without external subsidies by users forming a "club" with a membership fee and a usage charge; the usage charge being set at the economically efficient marginal rate. Of course a group of ratepayers subsidising their local bus service could be seen as such a club.

### **3.2 Description of Regime**

Under subsidised deregulation, the regional council would establish a subsidy regime which would be available to existing or new operators within the region. The subsidy would reflect the objectives of the council and could vary by target group (children, pensioners, ordinary passengers), time of day (peak, interpeak etc.) and even area served. In particular peak CBD trips might attract a subsidy component for road congestion relief.

Any existing or intending operator would be able to enter into a non-exclusive contract with the regional council whereby the operator agreed to meet certain requirements such as:

- Maximum fares,
- Integrated ticketing,
- Vehicle standards,
- Provision of information,
- Auditing,

and in return receive output-based funding at the standard rates.

It would still be possible for the council to contract for specific services which were not being met by the market. This “gap filling” could be done in several ways including:

- Conventional net or gross contracts let by tender. This would be appropriate if the regional council wanted a specific service and the potential for operators to “improve” on this was limited.
- An exclusive area contract where operators bid for the right to operate services in an area. The bid could be for a fixed sum in addition to the standard output funding, or could be for a higher rate per passenger or passenger km.
- An auction whereby operators bid a subsidy rate, and all operators can compete at the lowest bid rate. The “winner” would have to be given some incentive, such as an exclusive contract for an initial period (e.g. 1 year).

### **3.3 Merits Compared with Existing System**

Provided the regional council’s objectives can be translated into a tractable subsidy regime, subsidised deregulation is likely to maximise the achievement of the objective(s) per dollar of subsidy. Services are likely to be more customer-responsive than those developed under a funder-provider system because of the on-going incentive to identify unsatisfied consumer needs.

Urban bus services have some inherent features which tend to make them natural monopolies. This means that, despite deregulation, head-to-head competition is likely to be the exception rather than the rule. This has advantages for the customer, who benefits from an integrated, consistent service.<sup>2</sup> However, it does mean that the regional council needs to maintain vigilance lest dominant operators abuse their market powers. Councils may have to use (or threaten to use) competition legislation to ensure that the market remains contestable.

### **3.4 Legislative/regulatory Implications**

The base legislation does not appear to preclude a subsidised deregulation regime.

---

<sup>2</sup> This benefit is one of the reasons bus services are a natural monopoly.



All payments by Transfund for passenger transport are required to be subject to an approved competitive pricing procedure, but the requirements for such procedures (section 19 of the original Act) would appear to support competition for the subsidies provided. We have not been able to identify any provisions in the Transit New Zealand Act or the Transport Services Licensing Act which require contracts to be exclusive. A legal opinion should be sought on this issue.

The Transport Services Licensing Act provides that:

*“a regional council may decline to register a passenger service where the service proposed  
(a) is likely to have a material adverse effect on the financial viability of any contracted service...”*

However this section is permissive, and the council need not decline any registrations. Contracts could be written so that, to avoid doubt, it was clear that this clause would not be evoked. Under subsidised deregulation, all services are likely to be contracted in any case.

Contracted services must be services specified in a regional passenger transport plan. This is unlikely to be limiting since the services can be specified in general terms, and the plan can be changed at any time.

The Transfund CPP is principally concerned with defining the process by which (implicitly exclusive) tenders are awarded. It does not appear to prevent a subsidised deregulation approach, although a specific CPP would be preferable. A CPP for a subsidised deregulation regime could be considerably simpler than the standard CPP. The concession fares CPP is an obvious precedent and could in fact be used for the purpose (by categorising all users into some form of concession group). However, the rather artificial “constructive tension” can be replaced by true competition for receipt of the subsidy.

We suggest that if this approach were to be adopted, it should have a purpose-written CPP. Part of the CPP could address the establishment of the appropriate subsidy rate(s).

### **3.5 Funding Implications**

Conventional service tendering aims to minimise the cost for a specified level of service. Because in general patronage and costs can be forecast with reasonable certainty, regional councils can predict in advance the funding implications of the services proposed, and can in any case withdraw or amend tenders where budget limits are exceeded. In contrast, subsidised deregulation maximises service per dollar, but places no limit on the potential funding required.

The problem can be addressed in one of several ways:

- The rate of payment in the contracts can be fixed but the term can be kept short. Short term contracts would not disadvantage operators to the same extent as is the case for exclusive contracts, provided there is advance indication of the likely rates for new contracts.
- The rate of payment may be unspecified, changing from time-to-time with limited notice (e.g. one month), with the operator also free to withdraw at any time. This would enable regional councils to adjust the subsidies in response to the services supplied. Again, industry confidence would be increased by increasing the period of notice.

In practice, it is unlikely that there would be a need for large changes in the subsidy rates. Once the system is in place, changes to services are likely to be evolutionary, not revolutionary.

### **3.6 Other Implications**

One concern often expressed about OBF is that it can result in the subsidisation of “profitable” services. In fact under a subsidised deregulation regime, it will often be the case that the more inherently profitable a service is, the more subsidy it will attract.

The paradox arises because from an economic efficiency viewpoint the greatest benefits will accrue from improving services which are well patronised (at the extreme, doubling the frequency of a service which carries no-one produces no benefits). This applies whether the benefit measured is user benefits, providing services for low income residents, or diversion of car drivers.

The advantage of the subsidised deregulation approach is that the inherently profitable routes are likely to attract competing services. Competing services (or the threat of competing services) will force the operator to increase services or reduce fares, thus ensuring that the benefits are passed on, and not retained as monopoly profits.

### **3.7 Implementation Issues**

We do not believe that there are any major impediments to the introduction of subsidised deregulation other than the need for a more appropriate CPP.

#### **Existing contracts**

Existing operators are likely to benefit from the move to subsidised deregulation because of the natural monopoly properties of bus operations which favour the incumbent. (Hence the apparent paradox of operators nominating their services for commercial registration as a way to protect their ‘patch’.) They would nevertheless be likely to oppose its introduction prior to the completion of existing contracts.

#### **Trial operation**

We would recommend a trial operation in either a smaller city (coinciding with the expiry of existing contracts) or a geographically distinct area of a major city. Because all operators would be contracted, the trial can be restricted to a pre-determined period. This could be as short as two years in a market such as Auckland, where there are multiple operators who could enter without major set-up costs.

### **3.8 Overall Evaluation**

Subsidised deregulation offers:

- The creation of a market place for operators with incentives and rewards for superior performance which offers the ability to build a loyal customer base that can form a basis for investment and research.
- An orderly servicing of a territory with acceptable service levels and standards for the bus user.
- A transparent value for money funding from the public purse.

The main drawbacks are:

- The possibility of market dominance by one operator due to the inherent monopoly characteristics of the public transport market.
- Inability to predict budget implications and thus the difficulty in providing long term certainty of funding levels.

The concept clearly has merits - but would warrant further exploration before being supported by PTAG and/or Transfund.

## **4.0 OVERALL CONCLUSIONS AND RECOMMENDATIONS**

### **4.1 Conclusions**

Separate conclusions have been drawn for OBF of conventional contracted services (section 2.8) and for subsidised deregulation involving OBF (section 3.8). This section draws these conclusions together.

OBF is likely to improve the delivery of regional council objectives provided these can be related to public transport outputs in a simple manner.

There is no legal impediment to either form of OBF. Nor does the current 'standard' CPP prevent the introduction of OBF, although it would be advantageous if the standard CPP were to be rewritten (or an alternative developed) to clarify and facilitate the use of OBF.

Subject to this, trials of OBF could be undertaken immediately. The conditions under which these are most likely to be successful are set out in the paper.

### **4.2 Recommendations**

If there is a substantial measure of agreement with the main points in this report, then we suggest the next steps should be:

1. Submission of this report to Transfund New Zealand for endorsement.
2. Drafting of proposed modifications to the 'standard' CPP or of a (regional) alternative CPP, to facilitate the implementation of OBF.
3. Selecting services for OBF trials and developing appropriate RFT/contract documents.
4. Introduction of OBF trials.