



**COMMONWEALTH COMPETITIVE
NEUTRALITY COMPLAINTS OFFICE**

Cost Allocation and Pricing

CCNCO Research Paper

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The Commonwealth Competitive Neutrality Complaints Office

The Commonwealth Competitive Neutrality Complaints Office is an autonomous unit within the Productivity Commission. It was established under the Productivity Commission Act 1998 to receive complaints, undertake complaints investigations and advise the Treasurer on the application of competitive neutrality to Commonwealth Government activities.

PREFACE

The Productivity Commission has been researching a number of competitive neutrality issues as part of its role as the Commonwealth Competitive Neutrality Complaints Office (CCNCO). This research is likely to be of general interest to other policy makers, agencies implementing competitive neutrality, and businesses that compete with publicly owned businesses.

This CCNCO research paper was prepared by Stuart Wilson, Ian Douglas and Brett Martyn. It examines cost allocation and pricing issues, particularly as they relate to business units that exist as part of larger general government agencies. The paper is intended to promote debate among policy makers, as part of the process of developing a common understanding of these issues.

The CCNCO would like to thank competitive neutrality policy advisers in the States and Territories who provided helpful comments on drafts of this paper. Nonetheless, the views in the paper are those of the CCNCO and do not necessarily reflect the views of other complaints offices in the States and Territories. Comments on the paper are welcome.

Mike Woods
Commissioner
October 1998

CONTENTS

Preface	iii
Overview	vii
1 Introduction	1
1.1 Application of competitive neutrality	2
1.2 Cost allocation	4
1.3 Scope and structure of the paper	5
2 Approaches to identifying the cost base	7
2.1 Fully distributed cost	7
2.2 Marginal cost	9
2.3 Incremental cost and avoidable cost	10
2.4 Which cost allocation method is best?	11
3 Measuring avoidable/incremental cost	15
3.1 Time period	15
3.2 Allocating capital costs	15
3.3 At what level within an activity are costs estimated?	19
3.4 Summary: testing for compliance with competitive neutrality	19
4 Some wider policy issues	23
4.1 Efficiency versus equity	23
4.2 Spin-offs from commercial activity	26
Appendix A Cost allocation policies	27
Appendix B Cost allocation: a practical example	37
References	41

BOXES

Box 1.1: GTE compliance with competitive neutrality	4
Box 2.1: Cost definitions	8
Box 3.1: When are joint capital costs avoidable?	17
Box 3.2: When should an agency allocate capital costs to a business unit using its assets?	18

TABLES

Table 2.1: Treatment of costs under different allocation methods	11
Table 3.1: Assessing whether an activity's prices are competitively neutral	21
Table A.1: Cost allocation and pricing policies, by jurisdiction	35
Table B.1: Cost structure at Departmental level	38
Table B.2: Cost of meeting the contract under different cost allocation methods	40

OVERVIEW

The objective of competitive neutrality is to achieve an efficient allocation of resources between public and private businesses. It requires that government businesses set prices that at least cover costs (including a return on capital invested and all relevant taxes and charges). The Competition Principles Agreement describes this as ‘full cost attribution’.

In the case of ‘stand-alone’ businesses, such as Government Trading Enterprises (GTEs) operating in competitive markets, the basis on which managers allocate costs to different outputs is unlikely to be a major issue for complaints units. Rather, a ‘stand alone’ business will be covering ‘full costs’ if it earns a commercial rate of return on its assets in the medium term.

However, many business units use the assets and resources controlled by larger non-commercial agencies. In these circumstances, the way a parent agency allocates costs to its business unit can have a significant impact on the unit’s cost base and on price levels. Therefore, cost allocation may be central to resolving complaints that such business units are undercharging for their output. Cost allocation will also be relevant if a GTE with a monopoly in some markets has the opportunity to cross-subsidise its activities in competitive markets.

Fully distributed costs

Most jurisdictions appear to have interpreted ‘full cost attribution’ to mean that they should adopt a full cost, or fully distributed cost (FDC) method. Under this method, a business unit’s cost base comprises all costs exclusive to the unit and a *pro-rata* share of the agency’s overheads and capital costs. Governments and businesses often use the FDC method because it is relatively simple to implement.

However, this research paper argues that there are circumstances where the FDC method will yield an inflated cost base. A business unit should clearly recover all costs which are exclusive to the unit, including a rate of return on the assets it controls. But allocating a pro-rata share of the agency’s overheads and capital costs to the business unit may overstate the costs it imposes on the agency. A business unit which used such a cost base to set a minimum revenue target could, therefore, neglect opportunities to efficiently supply goods and services.

Avoidable costs

The avoidable (or incremental) cost allocation method overcomes this problem because it better measures the additional costs to an agency of its commercial activities.

Under the avoidable cost method, the cost base of the business unit comprises all costs the agency would save, or avoid, if the business ceased operating. This includes the resources used exclusively by the unit, *and* the additional cost the agency incurs to provide resources to the unit.

The avoidable cost will often, although not always, be lower than the FDC. Where an agency has made a sound investment in an asset to deliver its non-commercial services to the community, few additional costs will be incurred if a business unit uses any spare capacity in the asset. In this situation the avoidable cost may be significantly less than the FDC.

In contrast, spare capacity in an asset purchased to deliver non-commercial services can also arise from a poor investment decision, a change in government policy, or a change in demand for those services. In these circumstances an agency may have the option of selling the asset, thereby avoiding the associated capital costs. However, if instead of selling the asset, the agency allows its business unit to use it, the unit should be required to earn a commercial rate of return on that use. In these cases, FDC will be a good proxy for the avoidable cost (see section 3.2).

Since avoidable cost equates to the minimum level of revenue consistent with efficient production, it provides a good benchmark to use when examining claims that a business unit is underpricing its services.

What about equity?

While using avoidable cost as a minimum revenue target for business units will promote efficient outcomes, private competitors may consider it to be unfair.

In response, some jurisdictions have determined that the FDC approach should always be used. This involves trading off efficiency against equity, because if market prices will provide revenue to cover avoidable cost, but not FDC, the unit would cease production, even though it would be efficient to continue supplying the output.

Irrespective of the costing method used, improving the accountability of government business units and their parent agencies could reduce businesses' concerns about equity in the future. Among other things, this would involve ensuring that agencies properly document the way they allocate costs to their business units. Public sector reforms such as accrual accounting and output budgeting will also improve the accountability of managers and encourage better investment decisions in the future.

1 INTRODUCTION

In April 1995, the Commonwealth, State and Territory Governments agreed to implement nation-wide competition policy reforms under the National Competition Policy. An element of this package — the Competition Principles Agreement (CPA) — contains a series of measures to promote more effective competition across the economy.

One component of the CPA is competitive neutrality. Competitive neutrality is a policy which aims to promote efficient competition between government and private businesses operating in the same market.

Government ownership can confer both competitive advantages and disadvantages on agencies commercially supplying goods and services. Significant advantages may include:

- exemption from taxation, such as sales tax and stamp duty;
- access to debt at concessional rates;
- exemption from aspects of business regulation, such as environmental and planning laws; and
- pricing policies which do not take account of full production costs, including a rate of return on capital employed in the business.

On the other hand, a government business may face disadvantages such as lower levels of managerial autonomy, or more onerous accountability requirements than prevail in the private sector.

These advantages and disadvantages may lead to an inefficient mix of production across the public and private sectors. The objective of competitive neutrality is expressed in the CPA as ‘removing resource allocation distortions arising from public ownership of business activities’. More specifically, it aims to remove artificial advantages and disadvantages to allow public and private businesses to compete on the basis of which offers the best cost and quality combination to customers. From the community’s point of view, this will result in more efficient outcomes.

Often, reforms to improve resource allocation, or efficiency, will also promote fairness in competition between the public and private sectors. An example is making government businesses pay tax (or tax equivalent payments).

However, fairness is not an explicit objective of competitive neutrality. In particular, as is evident from the discussion in this paper, competitively neutral

and efficient pricing rules for goods and services could often be perceived as unfair to private operators.

That said, the CPA recognises that competitive neutrality should not be implemented where the costs to the community in terms of fairness (and a range of other social objectives) would outweigh improvements in efficiency. For instance, competitive neutrality does not force governments to abolish requirements for their businesses to meet community service obligations (although it may have implications for the way in which they are funded). Similarly, competitive neutrality does not mandate delivery of social programs via market mechanisms such as competitive tendering.

1.1 Application of competitive neutrality

Under the CPA, each jurisdiction is required to provide a complaints mechanism which investigates allegations from business, or others in the community, that government businesses are not complying with competitive neutrality principles.

Complaints experience to date indicates that many complaints will relate to situations where government ownership allows a business to continue operating even though its prices do not cover all costs. Thus, these complaints will, *prima facie*, involve assessment of whether the business's revenue exceeds a floor set by the costs of production.

However, it will not always be necessary to do a detailed revenue and cost comparison. In particular, a 'stand-alone' government business operating in competitive markets will generally comply with competitive neutrality if it earns a commercial rate of return on its assets (provided that it is subject to costs such as taxation and debt guarantee fees). Stand-alone government businesses are usually corporatised, but could also include some fully-independent commercialised activities.

An advantage of using the government business's aggregate rate of return to test for competitive neutrality is that it allows for significant pricing flexibility for individual products. Consistent with the intent of competitive neutrality, public enterprises should not be more or less constrained than their private counterparts in their pricing behaviour. Over the longer term, a private business must earn sufficient revenue to cover all costs, including a commercial rate of return. But in pursuing this goal, private businesses adopt a wide range of pricing strategies for individual products. For example, some opt to price below cost on individual lines, and at different stages of a product's life cycle to attract customers to other product lines and raise the profile of the firm (loss leading).

Alternatively, they may price a product well above costs if it has a strong competitive advantage.

However, governments are also involved in a wide range of business activities that are not corporatised. For instance many businesses exist within larger non-commercial agencies. Examples include:

- business units within Commonwealth or state government departments, or within local government. For example, local governments undertake a wide range of smaller commercial activities such as operating caravan parks and recreational centres;
- commercial activities of government research organisations or education institutions, for example, commercial ventures by the CSIRO, and consultancy services by units attached to universities; and
- in-house bidding for activities that are being put to competitive tender, such as personnel, administration and information technology functions.

Whether or not these business units are formally ‘ring-fenced’ from the non-commercial agency, they generally use assets and other resources controlled by the agency. Thus, while they will have an asset base of their own, they will (implicitly) purchase some inputs from the non-commercial agency. In these cases the rate of return the business unit achieves on the assets it exclusively controls will not be a good indicator of whether its prices are competitively neutral. For instance, a business unit may appear to earn an adequate rate of return on its own assets, but only because supplementary resources are made available to it from the non-commercial agency at a price that does not reflect their cost.

Indeed, many small business units located within government departments will have few assets of their own, so that their cost base will be largely determined by what costs are allocated (or what charges apply) for the use of the department’s assets.

In these cases, the way a non-commercial agency allocates costs to its business unit is clearly important for competitively neutral outcomes. Similarly, where a Government Trading Enterprise (GTE) fulfils significant community service obligations (CSOs) or has market power, it may have capacity to cross-subsidise the commercial activity from the non-competitive activity. Again the rate of return alone would not be a sufficient test, and complaints units would also have to examine the way the GTE allocates costs to its commercial activity (see box 1.1).

Box 1.1: GTE compliance with competitive neutrality

For many GTEs, an aggregate rate of return test will be sufficient to indicate whether they comply with competitive neutrality.

However, the rate of return alone may not be a sufficient test where a GTE fulfils CSOs. A CSO is a non-commercial requirement imposed on a GTE, usually to meet a social objective. For example, Australia Post is required to charge a uniform price for standard letters, even though the cost of delivery to some areas exceeds the uniform \$0.45 charge.

If an agency is overfunded for a CSO, there may be capacity to use surplus funds to cross-subsidise other commercial activities. It is not possible to detect this simply by looking at the aggregate rate of return: surplus CSO funding could permit the GTE to earn a commercial rate of return while underpricing its commercial services.

Similarly, the aggregate rate of return may not be a sufficient test if a government business has a monopoly (legislated or natural) in some market segments. For example, a government printer may have a monopoly over provision of some services to government, but compete with private publishers and printers to supply others. In these situations, it is possible for a shortfall in returns in the competitive market to be disguised by additional revenue earned in the protected market, so that overall the rate of return appears satisfactory.

1.2 Cost allocation

In circumstances where complaints units, or others implementing competitive neutrality, need to compare a business unit's revenue with its costs, a range of issues and problems arise. It is not always straightforward to determine the cost to an agency of resources used by its business unit. For instance, what share of an agency's corporate services should be attributed to its business unit?

There are a number of different methods for measuring a business unit's costs, which can produce significantly different results. For each, the information requirements and the judgements that must be made also differ.

The CPA permits each jurisdiction to implement competitive neutrality according to its own agenda. As set out in appendix A, there are currently differences in the approach to cost allocation across jurisdictions. However, as the National Competition Council has commented in relation to competitive neutrality:

It would particularly assist the reform process if there was a common understanding across jurisdictions as to the principles underlying full cost pricing (NCC 1997 p.18).

This paper argues that the avoidable cost methodology is usually the best approach to assess claims that government businesses are underpricing their outputs.

1.3 Scope and structure of the paper

The paper's focus on cost allocation and pricing is consistent with the role set for complaints units in the CPA — determining whether a government business is underpricing its goods and services.

However, this role does not involve considering broader resource allocation issues raised by competitive neutrality. For instance, in assessing how to determine whether a GTE with a statutory monopoly in some of its markets is complying with competitive neutrality, this paper does not question whether that monopoly is justified. Even more broadly, the paper takes as given government's current role in providing commercial and non-commercial services, and does not assess whether it is sensible for governments to be involved in their current range of activities.

Yet these broader issues are clearly important from an efficiency viewpoint. Indeed, some of them are being addressed under other elements of competition policy. Thus, the conclusions of this paper regarding pricing and costing of commercial services provided by government should clearly be recognised as relating to only one aspect of improving the way governments conduct business activities, rather than as a blueprint for the efficient delivery of services to the public.

Section 2 describes cost allocation methods and assesses which method best meets the objectives of competitive neutrality and efficiency. Section 3 examines some of the associated measurement issues in detail. Section 4 canvasses equity issues that arise in applying the avoidable cost methodology, and the importance of accountability arrangements to ensure competitively neutral outcomes.

2 APPROACHES TO IDENTIFYING THE COST BASE

The CPA specifies that prices for goods and services supplied by significant government businesses should reflect ‘full cost attribution’. However, it gives no further guidance on how costs should be attributed.

Full cost is not a precise term. For a self-contained government business the full cost of the business is straightforward. But where a business unit shares resources controlled by a non-commercial agency, is it just the additional cost of producing the output, or should it also include a share of corporate overheads?

Virtually all jurisdictions have interpreted full cost attribution in these circumstances to mean what is known as ‘fully distributed cost’. However, a number of cost allocation methods could potentially meet the full cost attribution criteria. These include:

- activity based costing;
- marginal cost; and
- incremental and avoidable cost.

The differences between the methods broadly reflect different approaches to the allocation of indirect and joint costs and, to a lesser extent, different data requirements. This section outlines each approach and then examines them for consistency with the objective of competitive neutrality. The discussion uses a number of common terms to refer to different types of costs. These are defined in box 2.1.

2.1 Fully distributed cost

Under the fully distributed cost (FDC) method, the total costs of an agency or business are allocated across all commercial and non-commercial outputs. Direct costs are allocated to their respective output, while indirect and joint costs are averaged across all outputs. Thus, the cost base for each output will include a proportion of the direct capital costs, and those used indirectly to produce the output. These latter costs may include, for instance, a proportion of the capital costs of the agency’s corporate services areas.

In the most simple form of FDC, indirect costs are allocated to activities on a *pro-rata* basis. They may, for instance, be allocated as a proportion of:

- staff involved in the activity as a percentage of total staff;

- the direct resource use of the activity as a percentage of total resource use;
or
- the budget for the activity as a percentage of the total business budget.

Appendix B contains an example illustrating the use of the FDC method to cost a particular commercial output.

Box 2.1: Cost definitions

Direct costs are those which can directly and unequivocally be attributed to an activity. They include labour (including on-costs) and materials used to produce the good or service.

Indirect costs are those which are not directly attributable to an activity and are often referred to as overheads. They can include ‘corporate services’ costs such as the Chief Executive Officer’s salary costs, financial services, human resources, records management and information technology.

Capital costs are the profits a business must earn to justify retention of the assets in the business in the medium to long term. Capital costs are usually expressed as a rate of return on assets and may relate either to assets directly involved in producing the output or indirectly associated with production.

Fixed costs are costs which do not vary with the output of the product. Rent and capital are usually fixed costs in the short run.

Variable costs vary with the volume of output of a good or service and typically include direct labour and materials.

Common or joint costs are costs that remain unchanged as the production of different goods is varied. Such costs are incurred if any one of the goods is provided. For instance, the costs of telephone lines to a house remain unchanged whether they are used for local or long distance calls.

Activity Based Costing (ABC) is a more sophisticated method of allocating the indirect cost pool, and is increasingly used by private enterprises to more accurately cost their outputs. Under the ABC approach, categories of indirect cost are identified, and these costs are allocated to products using criteria (often called ‘drivers’) which most closely reflect usage by each product.

However, while ABC more accurately allocates indirect costs according to usage, it still remains a way of fully distributing all costs. For instance, expenses such as generic advertising expenditure would be allocated across all products on some *pro-rata* basis as part of an ABC exercise. Nonetheless, an

ABC cost allocation exercise may have application to other costing methods. For example, because ABC generates more disaggregated cost data than other FDC methods, it can be readily adjusted to provide estimates on an avoidable or marginal cost base (see below).

2.2 Marginal cost

Marginal cost is the cost of producing an additional unit of a good or service. It will generally include direct costs that vary with output and some indirect costs. Marginal cost can be measured in the short run or the long run.

Conceptually, short run marginal cost (SRMC) gives the best indication of the cost of producing an additional unit at any point in time. It excludes capital costs because these are fixed in the short run. SRMC also excludes a range of indirect costs such as generic advertising or management time of the chief executive officer, since they too will not vary with output in the short run.

In practice, however, SRMC is difficult to define and to measure. There are often problems in specifying what period is the short run, over what increment in output costs are measured (one car or a production run of cars?) and how to treat joint costs. In addition, prices for some products or services using capital which is 'lumpy' could display excessive variability if they were based on SRMC (see IC 1992, pp. 150-152).

An alternative measure is long run marginal cost (LRMC). LRMC is the cost of supplying an additional unit of a good or service when capacity can be varied. It comprises not only operating costs, but also the capital costs associated with increasing productive capacity. Conceptually, LRMC is the correct cost base for making investment decisions, and setting prices based on LRMC could overcome much of the variability inherent in SRMC. In contrast to FDC, it excludes indirect costs that are fixed in the longer run, such as corporate overheads and their associated capital costs.

However, LRMC also encounters measurement difficulties, and may require complex calculations to incorporate the impact of new capacity on the production system already in existence (IAC 1989a and Turvey 1969).

In summary, marginal cost is, in principle, an appropriate measure of the cost of additional output. However, mainly because of measurement difficulties, proxies are typically used to estimate marginal cost.

2.3 Incremental cost and avoidable cost

One proxy for marginal cost is incremental cost. While there are a number of definitions of incremental cost, in practice, it is usually related to larger increments of output, and a longer timeframe than SRMC (BTCE 1995). That is, incremental cost is the increase in a business's total cost attributable to the production of a particular type of good or service, rather than just the cost of producing the final, or marginal unit of that good or service. Long run incremental cost (LRIC) includes operating and maintenance costs, incremental capital costs (that is, a return on the additional assets required) and incremental indirect costs. Per unit incremental cost is the cost of the relevant increment (or block) of output divided by the number of additional units.

Unlike FDC, however, LRIC excludes indirect costs that remain unchanged whether the product is supplied or not. Although some discussions of LRIC (see BTCE 1997) suggest these joint capital costs can be allocated on much the same basis as under an FDC approach, a 'purer' interpretation of LRIC excludes these costs (see IC 1997a). Joint costs are often not incremental to providing additional output. Section 3.2 discusses the allocation of joint capital costs in detail.

Avoidable cost is another practical measure of marginal cost. It includes all the costs that would be *avoided* if an output was no longer provided by the entity concerned. An example of the costs that may be included in an avoidable cost calculation is provided in IC (1996) in relation to in-house bids for competitive tenders:

... direct costs such as labour and materials and some indirect costs (such as some personnel functions, payroll administration and other overheads relating to the in-house team) may be avoided should the service contract be awarded externally. As such these costs should be included in the in-house bid. Other costs, such as some corporate overheads (including generic agency advertising and employing a chief executive officer) may remain fixed regardless of the decision between an internal or external supplier and consequently should not be included in the in-house bid (p. 310).

An example costing of a business unit using the avoidable cost method is included in appendix B.

In practice, there is generally little difference between avoidable cost and incremental cost. This is because the cost saved by not producing the product is usually the same as the additional cost of making the product available, in the longer term at least. However, it remains common to use both terms. 'Avoidable cost' is typically employed to measure the cost of community service obligations and, more recently, to cost in-house bids under competitive tendering. 'Incremental cost' has most recently gained currency as one method

of estimating the cost of providing third party access to infrastructure. In this paper, avoidable cost and incremental cost are treated as synonymous.

Table 2.1 summarises the treatment of various categories of costs under each cost allocation method.

Table 2.1: Treatment of costs under different allocation methods

<i>Cost Category</i>	<i>Is the cost included in the cost base?</i>			
	<i>FDC</i>	<i>SRMC</i>	<i>LRMC</i>	<i>Avoidable/Incremental cost</i>
Direct costs (eg. direct labour, materials costs, sales tax)	yes	yes	yes	yes
Executive costs	yes	no	no	no
Rent	yes	no	often, but not always	often, but not always
Other overhead costs	yes	no	yes	to the extent that they are avoided if the activity is not undertaken
Capital costs exclusive to the activity	yes	no	yes	yes
Joint capital costs	yes	no	no, in most cases	to the extent that costs can be avoided if the activity is not undertaken (see section 3.2)

2.4 Which cost allocation method is best?

As discussed in section 1, a complaints unit is most likely to be interested in a government business’s costs when it uses resources controlled by a non-commercial agency. The cost of the business unit is important because it represents the minimum level of revenue that is consistent with competitive neutrality.

However, the cost base of the business unit will vary depending on the cost allocation method used. In practice, the choice will be between the FDC and the avoidable/incremental cost approaches.

As shown in table 2.1, both of these methods treat direct costs and capital costs exclusive to the business unit in the same way. However, there are often substantial differences between FDC and avoidable cost stemming from the way in which resources controlled by the parent agency are allocated to a business which also uses those resources. As shown by the example in appendix B, the avoidable cost of an activity may be significantly less than the FDC, particularly

in cases where a commercial activity uses spare capacity in an asset which has been acquired for performing non-commercial functions.

In assessing competitive neutrality complaints, the method adopted should be consistent with economic efficiency — the underlying objective of competitive neutrality. If the cost allocation method leads to a revenue floor that is too low, a business unit may be encouraged to supply a product when it is not efficient to do so. Conversely, if the revenue floor is too high, the business may neglect efficient supply opportunities.

The FDC and avoidable cost methods are examined below for consistency with this objective.

Fully distributed cost

The FDC method is widely used by business and governments because it offers a simple way to distribute joint costs and overheads.

However, at the product level, the FDC method does not capture the specific costs of supplying each output. It does not measure the amount by which costs increase with additional production, or the amount by which costs would be reduced if the output were correspondingly reduced (SCNPMGTE 1994a, p.17).

Similarly, at the business unit level, the FDC method will often overestimate the costs of a business unit using the resources of its parent agency. For instance, executive costs may be attributed to a unit, whereas in fact, they would remain unchanged whether or not the business unit existed. It is the potential overestimation of costs at the business unit level that is of concern in relation to competitive neutrality.

Over-estimating costs will not be a problem if the revenue a business receives for its output is sufficient to at least equal the sum of its own costs and the FDC of the resources provided by the parent agency — if revenue exceeds an inflated cost base, it would obviously also have exceeded a lower one.

However, problems can arise if the business unit's revenue is less than its FDC. The unit may wrongly conclude that it should not continue production, when in fact it would be efficient and consistent with competitive neutrality to do so. Box 2.2 provides an example of a company allocating overheads among its three product divisions, which illustrates the problems of using FDC to allocate agency resources to a business unit. It relates to a private company to allow values to be placed on each division's output, but it has much in common with an agency producing both commercial and non-commercial products.

Box 2.2: Fully distributed cost pricing

Agency managers must divide overhead costs between their non-commercial core functions and their business units. This is a similar decision to that facing private firms when allocating overheads among different business divisions.

Fully distributing a firm’s overheads to divisions can conceptually shut down an otherwise profitable firm. Consider the following simplified example (IAC 1989b). Assume the firm has three divisions, each producing a range of products. Total revenue is \$1300. Total costs are \$1200, comprising \$600 direct costs and \$600 indirect costs. Profit is \$100. The table shows the revenue and direct costs associated with each division. The contribution margin is the difference between the division’s direct costs and revenue, and represents the contribution that division can make to covering overhead costs.

	Sales Revenue	Direct Cost	Contrib Margin	Profit after FDC allocation		
				Scenario I	Scenario II	Scenario III
	\$	\$	\$	\$	\$	\$
Division A	600	200	400	200	100	(200)
Division B	400	200	200	0	(100)	—
Division C	300	200	100	(100)	—	—
Total Firm	1300	600	700			
Less Overheads			<u>600</u>			
Firm Profit			100	100	0	(200)

If existing revenues reflect what the market will bear, distributing overheads in proportion to direct costs would make Division C appear to be unprofitable (\$200 of overheads would be allocated to Division C, resulting in a loss on that Division as shown in Scenario I). If this caused Division C to cease production, the overhead charge to the remaining two lines would increase to \$300, rendering Division B apparently unprofitable (Scenario II). Deleting Division B would cast the full overhead burden on to the remaining Division A, which, along with the firm, would then be genuinely unprofitable (Scenario III). This could lead to the closure of a business which is clearly profitable, simply because of the allocation of overheads via FDC.

Avoidable cost

Using the avoidable cost method to allocate agency overheads and capital costs to a business unit overcomes many the problems associated with FDC.

Under this method, the cost base of the business unit will consist of all costs that the agency would save if the business unit ceased operation. Avoidable cost comprises:

- the *additional cost* to the parent agency of the business unit using its resources (assets and overheads); and
- the costs of resources used exclusively by the business unit (including capital costs).

If a business unit can earn revenue to equal (or exceed) its avoidable costs, it will impose no costs on the non-commercial agency in which it is housed. It will also be generating a commercial return on its own assets. Where non-commercial agencies have assets with spare capacity, the avoidable cost method will allow such capacity to be used commercially, rather than potentially have it lie idle.

However, it is important to recognise that the avoidable cost methodology can require significant judgement. And in some situations (generally where business units are significant users of non-commercial assets) the differences between avoidable cost and FDC will not be great. Where the difference is likely to be small, FDC may be an acceptable proxy because of its simplicity.

The avoidable cost method has been adopted by some governments for some applications. It has been recommended by the New South Wales and Commonwealth Governments for costing in-house bids for competitive tendering. The Industry Commission also endorsed the approach in its report on *Competitive tendering and contracting by public sector agencies* (IC 1996).

Yet, as mentioned above, a number of jurisdictions have endorsed FDC as the primary cost allocation method for determining competitively neutral prices, and have not fully defined where marginal cost can be used (see appendix A). Such an approach to 'full cost attribution' could lead to inefficient outcomes, and thereby offset to a degree the gains from implementing competitive neutrality.

3 MEASURING AVOIDABLE/INCREMENTAL COST

Application of the avoidable cost method raises three key issues:

- the time period over which costs should be assessed to be avoidable;
- how to treat capital costs (that is, how to incorporate a rate of return in the cost base); and
- whether costs should be measured at the product level, or for the total commercial activity.

3.1 Time period

As section 2 suggested, avoidable cost is usually a longer run concept.

But what constitutes the longer run? This question is important because more and more costs become avoidable the longer the timeframe. For instance, costs that are not avoidable in the short term, such as rent for office space, often become avoidable in the medium term when the lease comes up for renewal.

In choosing an appropriate time period, it is important to recognise the underlying objective of competitive neutrality — that is, better resource allocation. Resources will be efficiently allocated if government business units set commercial prices. This requires prices which, over time, cover not only operating costs, but also provide a return on capital. To ensure that capital and other longer term costs are treated as potentially avoidable (and therefore included in the cost base) a medium to longer term perspective should be taken.

Nonetheless the precise period is likely to differ depending on the type of activity. It will obviously be longer for an activity with long-lived infrastructure assets than for an activity where labour is the predominant cost. Where an activity is capital intensive, the capital budgeting cycle should govern the choice of time period. In other cases, the normal business strategy planning horizon of three to five years could be an appropriate rule of thumb.

3.2 Allocating capital costs

As outlined in section 2, under the avoidable cost approach, a business unit's cost base will comprise only those capital costs which would be avoided were the activity to be discontinued.

Where an asset is used exclusively by a business, clearly all capital costs are allocated to the business. But where business units use surplus capacity in assets controlled by their non-commercial parent agency, agency managers and complaints units must decide what costs are avoidable.

Where a business unit's use of a joint asset is a high proportion of total use, capital costs should usually be attributed to the unit. High commercial use is often a sign that the benefits to the community from the non-commercial activity's use of the asset are not, by themselves, high enough to justify the original investment. Thus, to justify retaining the asset in public ownership, the commercial activity should earn enough revenue to contribute to capital costs (see box 3.1). In these situations, the avoidable cost and the FDC are likely to be little different. Thus, FDC will be a sound proxy for avoidable cost.

However, there are a range of cases where the non-commercial use of an asset will deliver sufficient benefits to the community to justify the investment, even though there will be potential to also use it for commercial applications. This can occur where:

- an investment displays public good characteristics. For example, a software application developed for non-commercial use could be sold to many commercial users at little additional cost;
- the nature of the asset means that additional capacity comes at low additional cost. For example, a computer payroll system necessary to service 100 clients may have the capacity for 1000 clients; and
- an asset has been purchased with excess capacity to service future non-commercial demand and, *in the interim*, is used by a commercial activity.

In such cases, few capital costs associated with the commercial activity are avoidable. In these cases, the FDC method is unlikely to be a good proxy for avoidable cost, as it would involve allocating a higher (but arbitrary) level of costs to the commercial activity. As a general rule of thumb, the smaller the usage of an agency asset by a business unit, the lower the likelihood that the agency will need to attribute capital costs to the unit.

The cost base established in this way will set the minimum level of revenue for the business unit that is consistent with competitive neutrality. In practice, many business units will generate revenue in excess of the minimum, allowing them to make a contribution to the overheads and capital costs of the agency.

Box 3.2 provides a decision tree which summarises the previous discussion.

Box 3.1: When are joint capital costs avoidable?

Where a commercial activity is a high user of an asset ostensibly purchased for non-commercial purposes, capital costs are often avoidable. This is the case because the commercial use precludes the agency from seeking other ways of delivering the smaller non-commercial service.

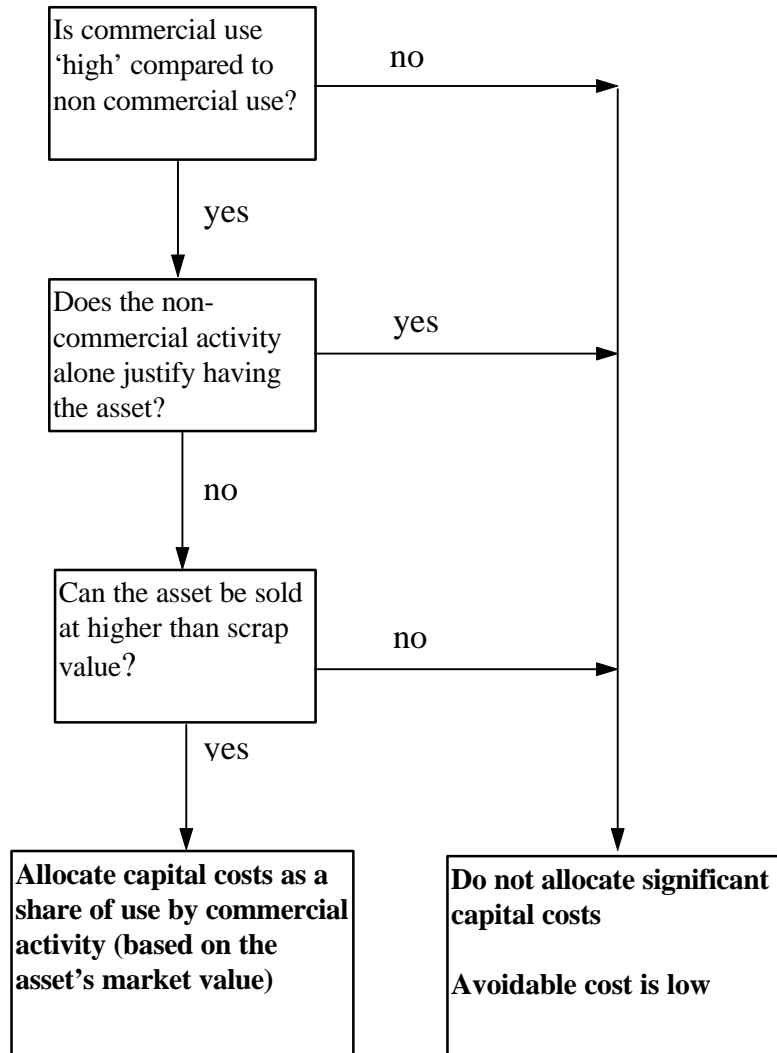
As an example, suppose a courier van is used by a non-commercial activity for only 20 per cent of the time, and for the rest of the time by a commercial business unit. In the absence of the commercial use, the agency might be able to deliver the non-commercial service more cheaply by selling the van and employing a courier company when needed. Since it could avoid costs in this way, most of the capital costs should be allocated to the commercial activity.

To determine what precise level of costs are avoidable in this situation, the agency would need to consider the value of the asset and the cost of alternative provision of the non-commercial activity. This could prove a difficult exercise in many instances. An easier approach is to allocate costs based on share of usage — the FDC method. In these instances, FDC is an acceptable proxy for avoidable cost, and will not suffer the drawbacks previously discussed.

However, even under the FDC method, asset valuation can complicate the allocation. If an asset was a poor investment from a non-commercial point of view, it may also be a poor investment from a commercial point of view. Even the most efficient commercial user of the asset may not be able to generate an acceptable return based on the original cost of the asset. This could make sound commercial ventures look like poor performers. To overcome this problem, costs allocated to the commercial activity should be based on the *market value* of the asset, rather than the historical (or acquisition) value. This approach is consistent with the deprival value approach to asset valuation (see SCNPMGTE 1994b for a discussion of asset valuation issues).

In the extreme case, the asset may have no value except as scrap. The investment in the asset is therefore ‘sunk’. In such circumstances, the avoidable cost of commercial use would be low, meaning that the capital costs allocated to the activity would be correspondingly low.

Box 3.2: When should an agency allocate capital costs to a business unit using its assets?



As is clear from box 3.2, neither the FDC or avoidable cost approach to allocating capital costs avoids the need for judgement by managers. The divergence between market values and historical asset costs can complicate both allocations. The avoidable cost allocation can be further complicated by the need to determine whether the non-commercial use generates sufficient returns to the community to justify the investment.

Both these complications partly arise because managers delivering budget-funded programs have traditionally not had to earn a measurable return on assets under their control. This can result in investment decisions that do not take into account the full costs of capital. In response to these types of concerns, Victoria is introducing a capital assets charge from 1 July 1998 to make agencies more aware of the opportunity cost of their assets.

Reforms of this type in the budget-funded sector may make it easier in the future to determine what capital costs should be allocated to commercial business units.

3.3 At what level within an activity are costs estimated?

As discussed, the most relevant revenue base for determining whether prices are competitively neutral is the avoidable cost of the business unit — the costs the agency would save if the business unit ceased operating. This comprises the avoidable costs of the agency's resources used by the business unit, as well as all costs exclusive to the unit.

Assessing costs from the perspective of the business unit as a whole provides the activity with the same pricing flexibility as GTEs, and other commercial businesses, to recoup varying proportions of its fixed and common costs across different products.

In doing so, managers in the business unit may wish to calculate the avoidable cost of each product. However, the avoidable cost of particular products should not be confused with the avoidable cost of the business unit as a whole. For instance, a business unit could earn revenue in excess of the avoidable cost of each individual product, yet be unviable because it could not recover overheads that would be avoidable if the whole unit ceased operation.

3.4 Summary: testing for compliance with competitive neutrality

As noted in section 1, the tests for whether a commercial activity's prices are competitively neutral depend on the type of agency. For GTEs selling goods

and services in competitive markets, the aggregate rate of return will usually be a sufficient test.

For business units within non-commercial agencies, revenue should equal or exceed the avoidable cost of the unit. Like GTEs, this will require the business unit to earn a commercial rate of return on assets it uses exclusively. However, the cost base should also incorporate the avoidable cost of resources the agency provides to the business. This provides a benchmark that can be used by competitive neutrality complaints units to assess complaints that a government agency is undercharging for commercial services.

Table 3.1 summarises the tests for different types of government businesses.

As discussed in this section, while FDC will sometimes be a good proxy for avoidable cost, it is often difficult to determine this in advance. This could make it difficult for managers to know when they should use avoidable cost and when a potentially simpler FDC method is acceptable.

If an agency is already using an FDC method to allocate costs to a business unit, one approach is to move to avoidable cost only when it is likely to have an impact on a business unit's decision making. For instance, if a business unit's revenue exceeds its cost base established using FDC, it will be complying with competitive neutrality. In this instance it is largely academic whether the avoidable cost is much lower than the FDC of resources allocated to the business unit.

However, if the unit's revenue cannot cover agency costs allocated on an FDC basis, it will be in the agency's interest (as the body responsible for the business unit) to allocate resources at avoidable cost. If revenue exceeds the avoidable cost of the unit, it is efficient to continue production. If, however, revenue is less than the avoidable cost the agency should consider closing the business unit.

Table 3.1: Assessing whether an activity's prices are competitively neutral

<i>Type of business activity</i>	<i>Tests to ensure activity is competitively neutral</i>	<i>Comment</i>
Corporatised GTE operating in competitive markets	Is the GTE earning a commercial ROR ?	If ROR target is met, prices must cover all costs.
Corporatised GTE with significant market power	Is the GTE earning a satisfactory return? Does revenue from the non-monopoly element exceed its avoidable costs?	Notwithstanding price controls, excessive earnings in monopoly markets may allow a GTE to cross subsidise loss making activities, so cannot only rely on ROR target.
Corporatised GTE with a significant CSO component ^a	Is the GTE earning a satisfactory return? ^b Does the revenue from the commercial activity exceed its avoidable cost?	Excessive funding for CSOs may provide capacity for a GTE to cross subsidise loss making activities, so cannot only rely on ROR target.
Multi-product business unit within a government agency supplying non-commercial products	Does revenue exceed the avoidable cost of the business unit?	Avoidable cost includes a ROR on unit's own assets, and the avoidable cost of agency resources provided to the unit.
Agency selling a commercial service on an ad hoc basis.	Does revenue exceed the avoidable cost of supplying the service?	Where an agency sells a single product, the cost of the product and the cost of the commercial activity are one and the same.
Costing in-house bids under competitive tendering	Price set equal to the avoidable cost of supplying the service.	For in-house bids, cost usually sets the price rather than forming a floor to prices.

a Competitive neutrality may raise broader issues about the way in which CSOs are funded and delivered. However, these are beyond the scope of this paper.

b A CSO may be funded by accepting a lower rate of return, so that an acceptable ROR may be less than a commercial ROR for that activity.

4 SOME WIDER POLICY ISSUES

4.1 Efficiency versus equity

In some cases, the charges for resources provided by a non-commercial agency to its business unit may be very low under the avoidable cost methodology. For instance, a business unit's use of excess capacity in an asset controlled by the agency may impose few additional costs on the agency. Nonetheless, as discussed previously, if the business unit's revenue exceeds its avoidable cost, it will comply with competitive neutrality.

However, businesses that compete with government suppliers may regard such prices as both inequitable and inefficient. The *Guide to Commercialisation* by the Commonwealth Department of Finance (DoF), now the Department of Finance and Administration, echoes this view:

... an organisation may have developed a computer system to service its non-commercial (budget funded) clients but use the same system for a small number (by comparison) of commercial clients. It may be considered that none of the capital cost of the system can be attributed to the commercial clients, since the system was developed to service non-commercial clients and the capital expenditure would have been required regardless. *Adoption of this approach would result in unequal competition with private sector competitors. Moreover efficiency is improved if commercial clients of government organisations bear an appropriate share of the cost* [emphasis added] (DOF 1996, p. 109).

In terms of economic efficiency, this paper supports a different view. It argues that avoidable cost is an efficient revenue floor because it reflects the resources used to provide the product.

Indeed, in a conceptual sense the example has many similarities with a private business using surplus capacity to undercut a rival. For instance, a private computer firm with excess capacity may bid for a contract against another firm needing to make a significant investment in new equipment to service the contract. In this situation, the capital cost component of the first firm's bid is likely to be substantially less than that of its rival.

But despite these conceptual parallels, equity concerns are likely to remain whenever a government business successfully competes with the private sector, particularly if the government business can access surplus capacity in assets purchased for non-commercial purposes. There are a number of ways of addressing these concerns.

Firstly, jurisdictions can make a tradeoff between efficiency and equity as a matter of policy. That is, they could specify the FDC method should always be used to allocate costs to business units, on equity grounds. Alternatively, they could impose FDC pricing requirements on a case by case basis in response to particular equity concerns (for instance where a commercial activity uses capacity arising from a poor investment), rather than incur efficiency costs across the board.

Moreover, under the avoidable cost framework, business units using excess capacity arising from poor investment decisions should often bear significant capital costs on efficiency grounds. As discussed in section 3.2, an agency often has the ability to sell assets which are performing poorly, and thereby avoid the capital costs. Hence, if a business unit wishes to use the asset, it should be required to earn a commercial rate of return on its share of use. In these circumstances there is likely to be less tension between efficiency and equity.

Secondly, some equity concerns can be addressed in ways that do not conflict with efficiency. If the public sector possesses excess capacity, one option could be to seek interest from private operators in the same industry to use that capacity. Such opportunities might arise where an agency had developed a research data base or modelling capacity with commercial value for non-commercial reasons. Similarly, tendering the services of prison labour to private firms may overcome some of the concerns about prisons using labour to produce commercial products at low cost. Where the private sector can use this capacity more effectively than the public sector, the twin goals of efficiency and equity will be served. If, however, the public operator can use the surplus capacity more effectively, then the equity benefit of making it available to the private operator would still entail some efficiency cost.

Thirdly, no matter what cost allocation method is used, enhanced public sector accountability will help to alleviate the concerns of business. Most jurisdictions are implementing reforms such as accrual accounting, output budgeting, capital charges for assets, and 'ringfencing' business units. The benefits from these reforms are likely to be two-fold. They can lead to more transparency in relation to the access and pricing arrangements of non-commercial assets used by business units, and they can encourage better investment decisions in the future that are less likely to result in the acquisition of unplanned surplus capacity.

Minimum accountability requirements

Competitive neutrality requirements in the CPA cannot be implemented effectively without an effective accountability framework in place.

Costing the resources provided by a parent agency to its business unit will involve an element of judgement, particularly when the avoidable cost method is used. This suggests that there is a need for government agencies that provide a mix of commercial and non-commercial output to clearly document the basis on which they allocate costs to their business units.

Failure to adequately document its cost allocation and pricing decisions in advance could leave an agency exposed if there was a complaint that its commercial activity was deriving benefits from government ownership. For example, where an agency invests in a new asset and allows its business unit to use the asset at low cost, it should be able to provide:

- analysis showing that non-commercial use of the asset fully justified its purchase;
- documentation showing the basis on which the business unit will use the asset so that it does not interfere with non-commercial outputs.

While proper documentation is an important element of accountability, it may not always be sufficient to create incentives for good performance, or to ensure that commercial objectives do not adversely influence the way non-commercial activities are performed. This suggests a case for separating significant business activities from non-commercial activities. Such separation is a core part of the CPA.

However, the benefits of separation must be weighed against the costs. For instance, the Victorian Government does not believe full corporatisation (involving legal separation and a board of directors) is likely to be cost-effective unless an agency's turnover exceeds \$10 million (Victoria 1996a, p. 32). Other jurisdictions have reached similar judgements. Also, the Industry Commission's recent report on the export of government services (IC 1997c) identified circumstances where separation could lead to loss of complementarities between commercial and non-commercial activity. For example, it noted that separation may make it harder to translate lessons learned about how to improve service quality from its commercial to its core activities.

Greater accountability does not always require legal separation, or even a separate board. Commercialisation may be an appropriate way of implementing competitive neutrality for smaller activities. It includes most of the elements of the corporatisation models but stops short of legal separation.

At the very least, however, two elements are necessary for any discrete commercial activity:

- separate accounts for the activity — competitively neutral pricing cannot be implemented if basic data are not available; and

- documentation of the business unit's use of assets and resources of the non-commercial activity, and the charges (if any) that apply.

These arrangements are likely to be no more onerous than those that apply to any small private business, and are consistent with normal management practice.

4.2 Spin-offs from commercial activity

The need for governments to interpret broadly the objective of improving resource allocation is also apparent if commercial government activity generates spin-off benefits (either economic or social) outside the business unit. Thus, the Industry Commission's recent study on Exports of Government Services (IC 1997c) found that performing a commercial activity may benefit the non-commercial activity by increasing the level of skills throughout the agency. It also noted that the commercial activity could have wider benefits. For instance, in a submission to the study the Australian Customs Service (ACS) contended that:

The export of technical services/advice is an important way for the ACS to influence the development of internationally accepted Customs policies and procedures in the region, an outcome of significant importance to Australian exporters (IC 1997c, p.63)

In such a situation, the total benefit to the community from the business is its financial returns, *plus* the spin-offs. If these spin-offs are significant, it may justify, on efficiency grounds, an activity earning low or even negative returns. Therefore, rigidly applying competitive neutrality rate of return requirements could make the community worse off. The CPA envisages these considerations being taken into account — competitive neutrality is only to be introduced where the benefits to the community outweigh the costs.

In practice, the extent of spin-offs will often be hard to assess. And agencies may find it convenient to claim wider benefits from their commercial activity as an excuse to justify poor performance or poor investment decisions. For this reason, where an agency makes a claim that its commercial activity generates wider benefit, the onus of proof should rest with the agency to clearly demonstrate the existence and extent of the benefit.

A COST ALLOCATION POLICIES

This appendix summarises the policies and guidelines of each jurisdiction with respect to cost allocation and pricing to meet competitive neutrality requirements.

In all jurisdictions, competitive neutrality applies to significant government business activities, significant local government business activities and in-house bids under competitive tendering. In some jurisdictions, this has resulted in multiple sets of guidelines. The degree of detail contained in guidelines also differs significantly across jurisdictions.

While there are significant differences in approach to cost allocation and pricing, there are also some common threads:

- there is a tendency to interpret the full cost attribution clause in the CPA as requiring the use of the fully distributed cost method for pricing in the first instance;
- there is general recognition that prices can differ significantly from the FDC level depending on market conditions; and
- for in-house bids under competitive tendering, the avoidable cost method is often advocated as a basis for costing.

To allow comparisons, table A.1 summarises the material contained in this appendix.

Commonwealth

The Commonwealth Government's competitive neutrality policy statement (Commonwealth 1996) states that:

... agencies should ensure that prices charged reflect full cost attribution for these business activities (p. 16).

The statement does not strictly define full cost attribution, but comments that:

The Commonwealth considers this requirement can be met by agencies meeting appropriate financial targets for specified business activities. Accordingly, it is not proposed to review individual prices charged by businesses, but to assess the overall financial performance of the business activity (p.16).

The Commonwealth (Commonwealth Government 1997b) has released guidelines for managers on implementing competitive neutrality. The

guidelines suggest that a cost allocation mechanism is required but do not specify what method should be adopted.

The Department of Finance's Guide to Commercialisation notes:

... Activity Based Costing is the most frequently recommended method of developing cost information and the one most commonly used for modern cost analysis (DOF 1996 p. 106).

The guide says that joint capital costs should be charged to all activities in proportion to their use of a particular asset — that, is on a fully distributed cost basis.

With respect to prices, the guide notes that, where agencies operate in competitive markets, a market price is appropriate. Moreover:

If the market price will not cover the full costs of providing the good or service (including a return on the capital employed) within the period covered by the initial corporate plan, commercialisation should not be pursued. (p. 106)

For pricing and costing in-house bids under competitive tendering, the Commonwealth Government has released separate guidelines (Commonwealth Government 1997). The guidelines advocate using either the avoidable cost method or ABC to cost in-house bids.

New South Wales

The NSW Government's policy statement (1996, p. 16) says that:

General pricing principles are being developed which will ensure that NSW Government entities (that undertake significant business activities as a part of a broader range of functions) price their goods and services in a manner that reflects full cost attribution (or average long run costs). The following items will need to be included in the assessment of full costs:

- cost of capital, including a rate of return on equity and the cost of debt;
- depreciation on plant and equipment and similar non-current assets;
- wage and labour on-costs;
- costs of materials;
- attributable share of common costs;
- State and Commonwealth tax liabilities;
- debt guarantee fee; and
- regulatory cost associated with any regulation that would apply to the agency if it were not an exempt Crown body.

However, the statement allows flexibility in pricing individual products, particularly where an activity has excess capacity:

Government businesses will have the flexibility to price particular goods and services below fully attributed costs provided the price:

- at least recovers the marginal costs (or average variable costs) of provision in the short run; and
- contributes to meeting the entity's fully attributed costs in the long run (NSW 1996, p. 16).

NSW has released draft pricing principles which advocate that the FDC method be used. The final guidelines will recognise avoidable cost as a price floor consistent with competitive neutrality.

The NSW Department of Local Government notes that many different costing methodologies can be applied to government activities, but suggests that activity based costing (ABC) is most appropriate (NSW 1997). Local governments have a degree of control over which cost allocation method they use, but they are required to be consistent in application.

Local government has the authority to subsidise prices as long as it is aware of the full costs of the activity. Suggested pricing methods include full cost pricing, rate of return pricing, market pricing and incremental/marginal cost pricing.

When calculating the cost of in-house bids for competitive tendering purposes, the NSW Government recommends that agencies use the avoidable cost method (and take account of taxation exemptions and the in-house costs arising from using a contractor) (NSW 1992).

Victoria

The Victorian Government has released a guide to implementing competitively neutral pricing policies. The guide does not endorse a particular cost allocation method, however, the competitive neutrality pricing principles aim to ensure that government businesses 'face all costs which would normally be borne by the private sector' (Victoria 1997a, p.2). In implementing competitive neutrality the Victorian Government recommends that agencies investigate structural options ranging from sale to administrative measures designed to improve commercial orientation such as the creation of discrete business units within operating departments (Victoria 1996b, p.33).

The Victorian Government's output costing guide states that '... the direct and indirect costs of producing outputs provides the full cost for those outputs'

(Victoria 1997b, p. 9). Adjustments for net competitive advantages (such as earning a rate of return or taxation) are then made to this cost base.

Prices are determined on the basis of the full competitively neutral cost. However:

Where a competitive market exists market prices should form the benchmark for price determination by public sector organisations. Accordingly, where practicable, public sector organisations should base their prices on comparable market prices, **subject to covering the full competitively neutral cost of outputs over the medium to long term** (original emphasis, Victoria 1997a, p. 20).

In the longer term, organisations must seek to cover the full costs of production, however, in some instances, products and services may be 'sold' for a price equivalent to the marginal costs of production. These circumstances include attempts to increase market penetration or to use short-term idle capacity (Victoria 1997a, p.11).

Turnover of the business activity determines the way in which competitive neutrality is implemented at the local government level in Victoria. Some local government activities (Model 1) will be corporatised and will be subject to commercial accounting and rate of return requirements. Others (Model 2) may be commercialised and will have to adopt '... pricing principles which take account of and reflect full cost attribution for the net competitive advantages conferred on the activity by public sector ownership' (Victoria 1996, p. 29). Examples of various costing principles and circumstances under which they may be used are outlined in the *Output Costing Guide* published in 1997.

Queensland

The Queensland Government's full cost pricing policy (Queensland 1997) recognises the existence of different costing methods such as full cost, marginal cost and avoidable cost.

However, the Policy Statement interprets the CPA as requiring full cost to form the pricing benchmark in the case of competitive neutrality (activity based costing may be used if it allocates all direct and indirect costs). Full cost is defined to be a form of FDC:

... under full costing indirect costs and overheads are fully absorbed into the cost of activities (Queensland 1997 p.17).

At the same time, the Policy Statement draws a distinction between costing and pricing. It recognises that significant business activities operate in a commercial environment and therefore it does not prevent the use of marginal cost or

avoidable cost for specific pricing decisions, so long as they are consistent with achieving a required rate of return.

Full cost requirements also apply to Queensland's local government activities. The Queensland Government (1996a p. 8) states that prices charged for local government goods and services should '... reflect the true cost of provision' including a competitive neutrality adjustment for advantages arising by virtue of government ownership.

South Australia

The South Australian Department of Treasury and Finance has released *A guide to implementation of competitive neutrality policy* (SA Treasury 1998). It states that attribution of costs should take account of:

- all direct costs such as labour materials and premises;
- indirect costs (overheads) such as personnel services, IT support, administration; and
- depreciation of physical assets used and capital costs (p. 34).

To this cost base are added competitive neutrality adjustments such as sales tax and local council rates to form a full cost base.

However, the guidelines stress that the full cost base provides only a reference point for the price setting decision:

Where prices depart from full cost pricing they should at least cover marginal or incremental cost (p.44).

According to the guidelines, situations in which prices may be below full cost include:

- in the short run (with the shortfall made up in later years); and
- where there is unused capacity in assets.

South Australia recommends the avoidable cost approach be used to cost in-house bids for competitive tendering (SA 1995).

In relation to local government activities, if larger local government business activities are not corporatised, councils '... should ensure that prices charged for goods and services take account of full cost attribution for these activities' (SA 1996, p. 7). In-house local government activities that are involved in competitive tendering are not required to operate under competitively neutral principles. In fact:

As an alternative, Local Councils should consider informing all potential private bidders of the in-house bid, and of the fact that the in-house bid enjoys a net competitive advantage because competitive neutrality policies do not apply to it (SA 1996, p. 8).

Western Australia (WA)

The WA Government's competitive neutrality policy statement (WA 1996a) contains the pricing principles for agencies to follow:

Where a government agency, other than a GTE, undertakes a business activity as part of a broader range of functions, it will be required to charge prices for goods and services which it currently provides that fully recover all costs incurred in their supply. These costs will include:

- the cost of labour directly associated with production of the product or provision of the service;
- the cost of materials and services directly consumed in the production process;
- an appropriate share of indirect labour costs;
- accommodation costs;
- a share of indirect materials and services;
- capital costs including depreciation of fixed assets and a commercial return on operations; and
- adjustments to the governments business' cost structure to take account of any artificial competitive advantages or disadvantages including, where appropriate, tax equivalents, State taxes, debt guarantee fees, and regulatory costs (p.18).

This pricing policy is not rigid however, particularly in relation to new goods or services, or businesses operating in competitive markets:

In keeping with commercial practices by firms in the private sector, agencies will have the ability to price new goods or services at marginal cost. Where an agency sells its products in a competitive market it should have the option of setting its prices according to the market rather than its cost of inputs. (WA 1996a, p. 18)

For costing of local government activities, the Government requires fully distributed cost. It recommends that costs should be allocated '... through activity based costing and other methods' (WA 1996b, p. 16).

When costing in-house services for competitive tendering purposes, the Government states that avoidable cost is the appropriate method because 'the purpose of costing activities which are to be considered for CTC is to identify

those costs which would be passed on to the private sector (ie avoided) if the activity was contracted out' (WA 1995, p. 20).

Tasmania

The Tasmanian Government requires that agencies apply full cost attribution and notes that the:

... full cost will include the direct cost of providing the activity and a proportional share of indirect costs' (Tasmania 1996a, p. 22).

It defines fully attributed costs more precisely as consisting of:

- i) operating costs (direct and indirect) per unit or period; *plus*
- ii) capital costs (direct and indirect) per similar unit or period; *plus*
- iii) competitive neutrality costs per similar unit or period (original emphasis, Tasmania 1997a, p. 11).

The Government recognises the distinction between costing and pricing. It notes that:

When pricing outputs, agencies should be wary of adopting a cost plus approach. Pricing options available include market price, full cost recovery, marginal cost and regulations (if applicable) (Tasmania 1996c, p. 13).

The Tasmanian competitive neutrality complaints unit apparently intends to use the avoidable cost method to assess whether a business unit's prices comply with competitive neutrality.

For local government activities, the Government states that:

... costs will need to take into account full indirect as well as direct wage costs; overheads such as corporate services and a notional rent for accommodation; and a component for return on capital. The business activity will not necessarily be required to pass this full cost onto its customers, if the council chooses to provide a subsidy to offset some of the cost of providing a service. However, any subsidies provided by the council need to be explicitly reported and accounted for (Tasmania 1996b, pp. 3-4).

The Government stipulates that councils use activity based costing:

... unless otherwise approved by the Local Government Office, after consultation with Treasury (Tasmania 1997b, p. 10).

With regard to pricing, it notes that:

These principles do not impose pricing obligations on Local Government but assist in the recognition of what is the fully attributed cost of an activity or function so that pricing decisions can be made in light of the full facts. Pricing decisions are

dependent on a number of managerial assessments regarding the desired profit margin or rate of return which is required from a contract and prevailing market prices as well as the full cost of performing the activity, function or providing the service (Tasmania 1997b, p. 7).

Tasmanian guidelines for competitive tendering and contracting specify that the avoidable cost method be used to compare in-house bids with other competitive tenders (Tasmania 1997c).

Australian Capital Territory (ACT)

Full cost attribution in the ACT requires the full costing of services to enable more accurate comparisons with external suppliers. All government businesses will be required to fully attribute costs on the same basis as private firms (ACT 1996 p.7). This generally requires that both direct costs and overheads are attributed to outputs.

Northern Territory (NT)

The NT Government (NT 1996, p. 107) states that for government business divisions:

... prices will reflect the cost of resources used. The prices will be subject to independent review by Treasury and be approved by Cabinet.

The cost of resources used is defined to include employee costs, property rental, insurance, and legal and auditing costs. Government business divisions are also subject to debt guarantee fees and tax equivalent payments and, in principle, are required to earn a return on equity.

Table A.1: Cost allocation and pricing policies, by jurisdiction

<i>Jurisdiction</i>	<i>Main costing method</i>	<i>Are others acceptable?</i>	<i>Pricing approach</i>	<i>Flexibility in pricing?</i>
Commonwealth	not specified	Yes	market prices	not specified
Competitive tendering	avoidable cost	Yes, ABC		
New South Wales				
State	FDC	Yes Avoidable Cost	Reflect full costs	Yes, MC in short run
Local	FDC (ABC)	Yes	Full cost, RoR, market, MC	Yes
Competitive tendering	avoidable cost	No		
Victoria				
State	FDC	Yes	Reflect costs in the medium to long term	Yes, MC in the short run
Local	FDC	Yes	Reflect costs in the medium to long term	Yes, MC in the short run
Competitive tendering	FDC	Yes	Reflect costs in the medium to long term	Yes, MC in the short run
Queensland				
State	FDC	Yes, MC or avoidable cost	Medium term RoR	Yes
Local	Full cost (undefined)	not specified	Reflect full costs	Yes
South Australia				
State	FDC (ABC)	Yes	FDC only one factor in setting price	Yes, eg MC in SR or where unused capacity
Local	FDC	not specified	Reflect full costs	not specified
Competitive tendering	avoidable cost			
Western Australia				
State	FDC	Yes	Adjust full cost for net competitive advantages	Yes, MC in SR
Local	FDC (ABC)	No	not specified	not specified
Competitive tendering	avoidable cost			

COST ALLOCATION AND PRICING

<i>Jurisdiction</i>	<i>Main costing method</i>	<i>Are others acceptable?</i>	<i>Pricing approach</i>	<i>Flexibility in pricing?</i>
Tasmania				
State	FDC	No	Need not be cost plus	Yes
Local	FDC (ABC)	Yes, but must be approved	No pricing obligations	Yes
Competitive tendering	avoidable cost used to compare inhouse bids with other competitive tenders.			
Northern Territory				
Competitive tendering	FDC	not specified	Reflect costs	not specified
	not specified			
Australian Capital Territory				
Competitive tendering	FDC	not specified	not specified	not specified
	not specified			

ABC Activity Based Costing
 MC marginal cost
 RoR rate of return
 FDC fully distributed cost

B COST ALLOCATION: A PRACTICAL EXAMPLE

The following example is a practical illustration of the issues involved in allocating costs, and the difference the choice of method can make to the cost base of an activity. Although the example is not unrealistic, the difference between methods would generally not be as extreme.

A department has a policy division and a specialised computing division. The computing division consists of just under ten per cent of departmental staff.

The department's mainframe computer is used solely by the computing division and operates at around 70 per cent capacity with a capital cost (including depreciation) of \$50 000 per annum which is fixed regardless of its use. Such spare capacity is not uncommon and may arise from a number of factors including:

- lumpiness in the capacity of the equipment;
- anticipation of greater (non-commercial) demands on the system in the future;
- not using equipment at night; or
- poor investment decisions.

Given that the capacity of the system never exceeds 70 per cent, the department accepts a contract for data processing from another agency. Over the next 12 months, the department expects that this extra processing work will use the remaining 30 per cent of the capacity of the computer system. The department expects to hire two extra processing employees (\$80 000) to cope with the additional workload associated with the private contract while the number of systems employees will remain the same. Some new expenditure on training (\$2500), new equipment (\$3000) and travel (\$3000) is expected. Some other overheads, such as communications costs are also expected to increase, while others such as maintenance, rent and electricity are expected to remain the same.

Table B.1 shows the department's total costs before and after it accepted the commercial activity.

Table B.1: Cost structure at Departmental level

<i>Annual costs</i>	<i>Non-commercial activities</i>		<i>Non-commercial and commercial activities</i>	
	<i>(\$)</i>	<i>Staff</i>	<i>(\$)</i>	<i>Staff</i>
Cost of capital (computer)	50 000		50 000	
Labour				
Computing	500 000	8	580 000	10
Policy & program	3 000 000	75	3 000 000	75
Executive	400 000	5	400 000	5
Other corporate	350 000	10	350 000	10
Training	100 000		102 500	
Furniture & fittings	100 000		100 000	
Other equipment	60 000		63 000	
Rent	1 000 000		1 000 000	
Electricity	170 000		170 000	
Travel	75 000		78 000	
Telecommunications	270 000		275 800	
Stationery	80 000		80 000	
Total	6 155 000	98	6 249 300	100

Costing results

As is apparent from table B.2, the cost of the commercial activity using the avoidable cost methodology is much lower than if the fully distributed approach is used.

The cost of the commercial activity using the avoidable cost method is \$94 300. It comprises labour, training and some other overheads that vary with the level of output. The cost of capital in this example is not included since capital is an expense which would have been incurred regardless of whether the commercial service was provided.

By contrast, the cost of the activity on a fully distributed cost basis is \$196 000. For the purposes of simplicity, indirect costs have mainly been allocated to the commercial activity on the basis of the proportion of commercial staff to total staff (2 percent). More sophisticated FDC approaches such as activity based costing, would not, however, affect the broad result.

The large difference in costs arises in this example because the avoidable cost calculation does not include rent, some corporate overheads or capital costs.

However, in many cases the divergence may be quite small:

- For instance, the exclusion of rent and corporate overheads in the example is based on the judgement that two extra personnel can be located within existing accommodation and would not increase corporate costs. But, if more staff were required, the commercial activity may cause rent and corporate costs to increase. In general, the greater the proportion of commercial activity to total activity, the greater the likelihood that some level of indirect costs will be avoidable.
- Similarly, while it will be appropriate in many cases not to attribute joint capital costs to the activity, in others some attribution of these costs will be justified. For instance, an agency may make an investment on the basis that it will be financially viable only if used by both the commercial and non-commercial activities. Alternatively, extra capacity may be built into an asset because of planned use by a commercial activity. In these situations, the commercial activity *causes* costs to be incurred and should bear some of the capital cost even though, once installed, the costs may not be avoidable.

As these considerations illustrate, it is not possible to mechanically apply the avoidable cost method. Deciding what is avoidable, even if rules of thumb such as a five year timeframe are adopted, often requires judgement. The key question is whether an agency could reasonably expect to avoid a particular cost if the activity did not take place.

Table B.2: Cost of meeting the contract under different cost allocation methods

<i>Annual costs</i>	<i>Total costs</i>		<i>Avoidable Cost</i>	<i>FDC</i>	<i>Comments on FDC allocation</i>
	<i>(\$)</i>	<i>Staff</i>	<i>(\$)</i>	<i>(\$)</i>	
Cost of capital (computer)	50 000		0	15 000	Full cost charged directly to the division, then pro-rated to the contract based on capacity usage (ie, 50 000 x 30%).
Computing labour					
Systems	150 000	3	0	45 000	Pro-rated to the contract based on capacity usage (ie, 150 000 x 30%).
Processing	430 000	7	80 000	80 000	The cost (80 000) of the additional staff required to service the commercial activity is charged directly to the contract. Processing labour used for non-commercial functions (350 000) is not charged to the contract.
Policy & program labour	3 000 000	75	0	0	Not allocated to the division as functions are unrelated.
Executive labour	400 000	5	0	8 000	Pro rated on the percentage of commercial staff to total staff (2% x 400 000).
Other corporate labour	350 000	10	0	7 000	350 000 x 2%
Training	102 500		2 500	2 500	Training for the contact staff is charged directly (2500).
Furniture & fittings	100 000		0	2 000	100 000 x 2%
Other equipment	63 000		3 000	3 000	The cost increase (3000) is charged directly.
Rent	1 000 000		0	20 000	1 000 000 x 2%
Electricity	170 000		0	3 400	170 000 x 2%
Travel	78 000		3 000	3 000	Charged directly
Telecommunications	275 800		5 800	5 500	275 800 x 2%
Stationery	80 000		0	1 600	80 000 x 2%
Total	6 249 300	100	94 300	196 000	

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