



**Principles Governing the Regulation of
Fixed-to-Mobile Termination**
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Frontier Economics Network

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1. Introduction

In the context of the Australian Competition & Consumer Commission's (ACCC) *Mobile Service Review 2003* ("the Review") and specifically, the ACCC's review of the regulation of the mobile termination service, Vodafone has asked Frontier Economics to consider:

- the economic arguments central to the question of whether a service should be declared, when the relevant service is produced by a multi-product firm with substantial common and fixed costs; and
- in the event the ACCC decides to issue a new declaration in relation to the mobile termination service, some options for regulating the declared service.

The telecommunications access regime is established under Part XIC of the *Trade Practices Act 1974*. Part XIC establishes the basis for regulated access to carriage services. A service must be declared if it is to be subject to a regulated access regime.

The Review is prompted by the scheduled expiration of the declaration on June 2004. The ACCC can extend this expiration or it can issue a fresh declaration. But, before it can decide on these courses of action, it must be satisfied that such action would promote the objects of Part XIC of the Act. These objects are contained in s 152AB:

- (1) The object of this Part is to promote the long-term interests of end-users of carriage services or of services provided by means of carriage services.
- (2) For the purposes of this Part, in determining whether a particular thing promotes the long-term interests of end-users, ...regard must be had to the extent to which the thing is likely to result in the achievement of the following objectives:
 - c. The objective of promoting competition in markets for listed services;
 - d. The objective of achieving any-to-any connectivity in relation to carriage services that involve communication between end-users;
 - e. The objective of encouraging the economically efficient use of, and the economically efficient investment in, the infrastructure by which listed services are supplied.

In this particular case, the declaration of fixed-to-mobile termination will expire on June 2004. So the question for the ACCC is whether it should extend that expiry date or issue a new declaration. According to the statute, the ACCC should only make one of those decisions if it is satisfied that extension or issuing of a declaration would promote the objectives that are listed in s 152AB.

Declaration of fixed-to-mobile termination is unlikely to have any significant effect on competition in a market for a listed service because it is unlikely to affect

the structure of any of the relevant markets or to create or eliminate any monopoly profits. Similarly, declaration is unlikely to have any significant effect on any-to-any connectivity. Consequently, it is reasonable to assume that the principle objective that the ACCC might be seeking to achieve through declaration, of those listed in s 152AB(2)(e), is the promotion of economically efficient use of and investment in the infrastructure by which listed services are provided. Consistent with this, the discussion in this report concentrates on the likely effect of declaration on economic efficiency.

This report is structured in the following way. Section 2 points to some fundamental insights from welfare economics as to the circumstances in which regulation is or is not likely to promote economic efficiency. Section 3 points to some particular problems that a regulator must deal with when attempting to analyse pricing of mobile services. Section 4 considers whether fixed to mobile termination exhibits signs of market failure. Section 5 considers some options for regulation that may be considered by the ACCC. Section 6 presents some conclusions.

2. Insights from welfare economics

2.1. The first fundamental theorem of welfare economics

The famous first fundamental theorem of welfare economics points to a close link between the promotion of competition and economic efficiency. In particular, given certain conditions (relating to such matters as the absence of externalities and certain types of cost functions) a set of competitive markets will produce an economically efficient allocation of resources.

This first fundamental theorem of welfare economics leads immediately to certain standard precepts of applied welfare economics. These precepts are based on the idea that, if the conditions needed for the theorem to hold are satisfied, regulation of economic activity cannot improve economic efficiency. However, regulation may be justified if the conditions needed for the theorem are not satisfied. In that case, one must investigate the possibility that regulation, of one sort or another, may create more benefits than it does costs; and, if that is the case, the regulation will be justified.

The real world never works in precisely the way of an economic model, so one could never expect the real world to satisfy the conditions of the first fundamental theorem in a very-exact way. Nevertheless, providing the conditions of the theorem are satisfied in a rough way, the general precept of applied welfare economics is that regulation is unlikely to enhance economic efficiency.

This general precept is reflected in the structure of Part XIC of the Act. That part has an effective presumption that, given certain conditions, markets can be expected to produce efficient results – even if these results are only approximated in a rough sort of way. This presumption is reflected in the following:

- declaration can only occur if the ACCC is satisfied that it is justified according to the criteria of s 152AB;
- any declaration is only for a limited time period; and
- a declaration may be extended or a new declaration may be made but only, again, if the ACCC is satisfied that the criteria of s 152AB are satisfied.

Applied welfare economics proposes three precepts that (although of general application) are relevant to the question of whether the extension or renewal of a declaration under Part XIC is likely to promote economic efficiency. These are:

- only regulate to remedy some type of market failure;
- attack the market failure at its source; and

- efficient prices in the presence of fixed or common costs will satisfy the Ramsey rules.

Each of these precepts will be discussed in turn.

2.2. Precept One: Only regulate to remedy some type of market failure.

The standard procedure of applied welfare economics is to examine the relevant situation to see if there are any significant deviations from the conditions that need to be assumed for the first fundamental theorem of welfare economics. These deviations are known as instances of market failure. Standard sources of such deviations are caused by:

- absence of competition;
- presence of externalities; and
- marginal costs below average costs.

Once a source of significant market failure has been identified, the analyst should recommend regulation if the regulation creates net benefits. That is, if he/she is satisfied that the regulation in question will enhance efficiency. This leads to the second precept.

2.3. Precept Two: Attack any problem of market failure at its source.

This precept gives guidance as to the circumstances in which a regulation is most likely to enhance economic efficiency. Once an instance of market failure has been identified, there arises the question as to whether action by the regulator can enhance economic efficiency. Regulation is unlikely to enhance economic efficiency if the regulation is directed at a target once or twice removed from the problem. Such regulation is unlikely to enhance efficiency because it is likely to give rise to further distortions in economic efficiency.

The classic contribution of the discipline of economics to debates over public policy is to point to unforeseen consequences of policy proposals. If action by the regulator is targeted at the source of the market failure, it is much less likely that the action will give rise indirectly to other forms of inefficiency. The less accurately the action is targeted at the source of market failure, the more likely is that the action will give rise to other forms of economic inefficiency.

This precept is found in a number of different applied policy contexts. It is a natural corollary of the theory of the second best; and it has been developed in the context of international trade policy.¹

2.4. Precept Three: Efficient prices in the presence of fixed or common costs will satisfy the Ramsey rules.

As was noted in section 2.1 above, the first fundamental theorem of welfare economics assumes certain conditions about the shapes of the cost functions of the firms in the economy. In particular, it assumes that, at the competitive equilibrium, marginal costs are equal to average costs, so the equation of prices with marginal costs is consistent with the condition of zero economic profits.

This arrangement is frequently violated in the real world. In a world of firms that produce single products with substantial fixed costs, the setting of prices equal to marginal cost may not allow the recovery of fixed costs. In a world of multi-product firms, the presence of costs that are common to the products of an enterprise will mean that the setting of prices equal to marginal costs may not allow the recovery of the common costs.

In a classic paper², Ramsey showed that the rules for economically efficient prices would have to change to allow for the recovery of fixed or common costs if the setting of prices at marginal costs was inconsistent with the zero-profit constraint. In the last twenty or thirty years, it has been accepted among economists that the standard for economically-efficient prices in a multi-product firm is given by the Ramsey rules – and not by the rule that is suggested by the first fundamental theorem of welfare economics, that price should be equal to marginal cost.

¹ The classic paper on the theory of the second best is R G Lipsey and Kelvin Lancaster, “The General Theory of the Second Best”, *Review of Economic Studies*, vol 24, (1956), pp 22-40. A seminal paper on the application of the precept to international trade is H G Johnson, “Optimal trade intervention in the presence of domestic distortions”, in R E Caves, P B Kenen and H G Johnson (eds), *Trade Growth and the Balance of Payments*, North-Holland (1965), pp 3-34.

² Ramsey, F P (1927), “A Contribution to the Theory of Taxation”, *Economic Journal*, vol 37, pp 47-61.

3. Analysing prices of mobile services

Mobile carriers produce a wide range of services. Services can be classified in many ways. A simple list might be domestic voice, international voice, text, roaming, GPRS and so on. For each of these categories of service, a carrier may gain revenue by charging for access (the option of using it), by charging for the originating service and by charging for the terminating service. Some of these revenue flows are from subscribers; but some are from the carriers with whom the mobile carrier interfaces to provide connectivity.

3.1. Costs of services

Patterns of fixed and common costs in telecommunications networks are notoriously complex. A few simple observations can be made. A subscriber's mobile phone should be able to handle the range of services to which the subscriber wants access. These services will be delivered via a local network and via the mobile phone of the subscriber.

Whether costs are fixed or variable will depend on the *decision* that is being made; that is, costs must be defined with reference to a decision. Consider the decision by a mobile carrier to add a service to the menu on offer. The *incremental cost* of that decision will be the costs that would be incurred over the whole of the network if that decision were to be implemented minus the cost that would be incurred over the whole of the network if that decision were not to be implemented.

Some of the incremental costs of a service may be sunk. That is, they may not be recoverable if the decision to offer the service is implemented but is later reversed. In this case, the incremental costs of a service will depend on the time at which the decision (to add or delete the service) is made.

The incremental cost of the service must be distinguished from the marginal cost of the provision of an extra unit of a particular service. The marginal cost of a particular service is the extra cost that is incurred if a subscriber decides to use one extra unit of that service. The marginal cost of an extra unit of a particular service may be less than (or greater than) the average incremental cost of providing a particular service. The most obvious reason for this difference would be the fixed costs associated with providing the service.

3.2. Revenue from services

Revenue for a mobile carrier comes from a wide range of payments. The payments are complicated by two factors. The first factor is common to many industries. This is that services are offered as bundles; and some parts of the bundles are separately priced, whereas others are not. For example, a subscriber might opt for a package with a flat monthly fee with no extra charges for basic

services up to a certain amount. This package might be thought to be charging a large amount for access and a zero amount for originating or terminating calls.

The second factor that complicates any interpretation of these revenue flows derives from a well-known characteristic of telecommunications: that externalities from consumption decisions are common. The standard example is the basic voice service. Person A calls and speaks to person B (who, in turn wants to speak with person A). Although person A initiated the call and the call is completed on the network to which person B subscribes, one cannot infer that person A places a higher value on the conversation than does person B. Nevertheless, there will be some convention or regulation (or perhaps some efficiency consideration) that will govern how the charge for the call is apportioned between the two persons. Furthermore, the conventions or rules governing the apportionment of the charge can change over time. Prior to the reforms of Sir Roland Hill, postal charges in England were levied on the person receiving the mail: Sir Roland changed the system so that the charge was paid exclusively by the sender.

Literature on custom, and charging practices, in the economy³, argues that the links between custom and efficiency are more-complex than has often been supposed. Schlicht argues that custom comprises various interconnected elements – of which competition may be one. So custom emerges, in part, as a result of the forces of competition. One should not look upon customary arrangements as merely remnants from the past that have yet to be eroded by modernisation and competition.

Any comparison of the revenue accruing to mobile operators with their costs must confront these two characteristics of the revenue flows: that some services attract no separate price; and that externalities are ubiquitous and that the apportionment of prices among the beneficiaries of a decision is, to some extent, influenced by custom. Because of these two factors, not all services will attract a price. This means that a subscriber will not always be confronted by the cost of every decision that he/she makes.

The inference to be drawn from these two characteristics is that markets create economically efficient outcomes in rough-and-ready ways. In the complicated world of reality, one cannot expect prices to be as finely adjusted as they might appear from a simple-minded application of the formulae of welfare economics.

³ Schlicht, Ekkehart (1990) *On Custom in the Economy*, Oxford Clarendon Press.

3.3. Effects of competition on the relation of revenues to costs in mobile telecommunications services

Sections 3.1 and 3.2 above, point to some key factors that must be considered before one can draw conclusions as to the presence and magnitude of any market failure in any aspect of mobile pricing.

Our argument with respect to costs may be summarised as follows. A decision to provide certain services may result in a firm incurring costs that are common to a range of its services. The incremental cost of any service may contain elements that are sunk (not recoverable upon the reversal of that decision). The marginal cost of providing an extra unit of a particular service may be very low indeed – because of the costs that are common across services and because of the fixed costs with respect to the decision to add a particular service.

Our argument with respect to revenues may be summarised as follows. Revenues may flow to mobile operators as a result of their providing access, initiation or completion aspects to any of the services they provide. However, each service is not always priced separately to every customer because: (i) some services are not priced separately to any customer; and (ii) some services are priced separately – but only to the customer of another network.

In the following section of this paper, we move to consider whether the current set of rules and conventions that apportion prices in the fixed-to-mobile termination service reveal any evidence of market failure. The debate in Australia and in other jurisdictions centres around the effect on fixed-to-mobile termination prices on economic efficiency. This section of the paper suggests a couple of possible approaches to this question.

One approach would be to consider the incremental costs and revenues from the provision of the termination service. When considering a service as a whole, one of the precepts of applied welfare economics is that cross-subsidies of services are economically inefficient. There are standard rules of the welfare economics of multiple product firms for identifying the giving or receiving of a cross-subsidy.⁴ It would be surprising if these rules were violated in this instance. The standard rules merely state the following:

- It would be economically inefficient if the incremental revenue that accrues to a mobile operator from adding a fixed to mobile terminating service to its range of other services were to be less than the incremental cost of the decision to add such a service. In considering this rule, one must take complementarities in demand into account. That is, one must

⁴ The seminal paper is Faulhaber, G R (1975), “Cross Subsidization: Pricing in Public Enterprises”, *American Economic Review*, vol 65, pp 966-77.

include in incremental revenue any revenue that accrues to other services as a result of adding the fixed to mobile service to the bundle on offer.

- It would be economically inefficient if the incremental revenue that accrues to a mobile operator from adding a fixed to mobile terminating service to its range of other services were to be greater than the cost of providing the fixed to mobile terminating service on a stand-alone basis. By stand-alone basis, we mean the cost of providing this service and no others.

This approach to comparing costs with revenues, although one suggested by theory, is very unlikely to identify any departures from economic efficiency: when it is applied to an industry with such substantial fixed and common costs as telecommunications, it is very unlikely to point to any problem. Because of this, it is not an approach that has received much attention from regulators of telecommunications.

The second approach to assessing the economic efficiency of a comparison of costs and revenues would be to compare the costs imposed on a mobile network and the price paid by a subscriber when deciding whether or not to use an extra unit of the fixed to mobile termination service. For the reasons that we have outlined in sections 3.1 and 3.2 above, it would be quite incorrect to apply simple-minded rules such as price should equal marginal cost to this problem. Rather, the inquiry would have to focus on whether the array of prices charged by mobile operators approached those that would be suggested by the Ramsey rules. We shall discuss this in the next section.

4. Signs of market failure in fixed to mobile termination

As we noted at the conclusion of the preceding section, regulators of mobile services have tended to direct their attention to comparisons of revenue with costs that affect the decisions of subscribers to use an extra unit of a particular mobile service. They have tended to focus on two possible signs of market failure:

- whether mobile prices deviate substantially from Ramsey-optimal prices; and
- whether mobile prices are decreasing over time at a sufficient rate.

Each of these will be discussed in turn.

4.1. First possible sign of market failure: that mobile prices are not Ramsey-optimal

The United Kingdom and European Union regulators have used this argument as the foundation for their proposals to regulate fixed-to-mobile termination. Their argument is that economically-efficient mobile prices would be Ramsey-optimal. But they claim that the market has failed because the prices that are charged by European mobile operators are not Ramsey-optimal, so they propose regulation to improve the prices charged for mobile services.

It is important to note at the outset that their argument that the prices charged by mobile operators in Europe are not Ramsey-optimal is not based on any comparison of actual prices with their calculation of the Ramsey-optimal set of prices. Rather, their argument is that mobile markets are not characterised by the conditions that would produce the Ramsey-optimal result.

The first reason is that their mobile service markets are not sufficiently competitive. One of the conditions that aids markets to produce a Ramsey-optimal set of prices is that they are sufficiently competitive to constrain the rate of return on shareholders' funds to be equal to the cost of those funds. However, the UK regulator (Ofcom) has concluded that this is not true of the UK mobile market:

Ofcom considers that the retail market is not sufficiently competitive to conclude that all MNOs [mobile network operators] would be constrained to set the overall level of Ramsey prices, which requires that only normal profits are earned.⁵

⁵ Ofcom, "Ramsey prices and the incentives of mobile operators", Ofcom, 12.2.02 – 01, p 2.

Although Oftel does not spell out its reasoning in detail, it is hard to see that it would apply to the market for mobile services in Australia. No one would claim that the Australian mobile market is perfectly contestable according to the Baumol, Panzar and Willig criteria. However, as we stressed above, the requirements of public policy have to be somewhat less demanding than this.⁶ So the question for a regulator investigating the possibility of market failure in the Australian mobile market must be whether the mobile market is workably competitive in such a way that Australian mobile operators are not able to sustain rates of return substantially in excess of shareholders' funds.

A number of features of the market suggest that the market is workably competitive. The market is relatively new, with a high degree of technological innovation. Markets of this kind encourage rivalry among incumbents – because there are good opportunities to expand market share at the expense of one's rivals. The second characteristic is the high degree of churn in the market. The Confidential Appendix to this report presents data for the churn that Vodafone has experienced. The final characteristic is the rates of return on shareholders' funds that have been earned by mobile operators in Australia. Although there are well-known problems in drawing inferences from rates of return in financial accounts,⁷ before the ACCC made any finding that there was a problem caused by an absence of competition, they should satisfy themselves that rates of return on funds invested in mobile telephony look substantially higher than the cost of shareholders funds. The Confidential Appendix to this report presents data on Vodafone's rates of return on network assets for the period 1999 to 2003.

The second reason given by Oftel for arguing that the UK mobile industry does not produce Ramsey-optimal pricing is that, even if an oligopoly were contestable, one would not expect it to produce Ramsey-optimal prices. To gain a flavour of this argument, we quote Oftel's summary:

Second, for the reasons set out below, the incentives faced by the MNOs would lead them to depart substantially from the structure of Ramsey prices. Oftel's view rests on the following points, which are discussed below:-

- . Ramsey prices that maximise economic efficiency reflect market elasticities of demand and not the elasticities faced by individual operators;
- . The size of the mark-up on each service under Ramsey prices reflects its elasticity of demand *relative* to the elasticities of the other services (including cross- as well as own-price elasticities; and

⁶ This is why antitrust policy developed the standard of workable competition in the 1940s and 1950s.

⁷ The classic paper is Fisher, F M and McGowan J J (1983), "On the Misuse of Accounting Rates of Return to Infer Monopoly Profits", *American Economic Review*, vol 73, pp 82-97.

. Operators do not have incentives to set the structure of Ramsey prices because the relativities of their individual elasticities are different from the relativities of the market elasticities. This is because there is a disparity in the degrees of competition that MNOs face between the two main markets in which they operate: termination and retail. Whilst each operator faces the market elasticity in its termination market, retail competition drives a substantial 'wedge' between the elasticity faced by each MNO and the market elasticity in the retail market.⁸

To some extent, the argument offered by OfTel is correct. The economic literature on Ramsey pricing does not demonstrate that oligopolistic market such as the Australian mobile market, with its economies of scale and scope, would be expected to produce a set of Ramsey-optimal prices.⁹

However, the OfTel argument is marred by two problems. The first is its lack of evidence about the magnitude of the price distortion they claim to have identified, OfTel feels justified in using words such as 'substantial' and 'substantially' but there is no indication of the extent to which the set of prices would be expected to deviate from the Ramsey optimal set. The second problem is that it classifies every MNO's services into 'two main markets'; termination and retail. The reason for this classification is to highlight that there are some services for which the subscriber is generally charged no per-unit charge ('termination') whereas there are other services ('retail') for which this is not true.

As we noted in section 3.2 above, this is not a useful way to describe pricing practices (or to define markets) in the mobile services sector in Australia. In Australia, there is a huge variety of pricing practices – and these practices differ among services and customers. Some retail customers are confronted with no per-unit charges at all (providing they stick within the limits of their contracts) whereas others are confronted by termination charges for a range of services.

This raises the question as to whether this uncertainty over the extent to which the prices of mobile services in Australia are likely to depart from the Ramsey optimal, or economically efficient set, means it should be classed as an instance of market failure for which a remedy should be investigated.

The answer one gives to this question will depend on one's judgement or one's taste for (or ideology towards) regulation. We make only one point. The problem (if one characterises it as such) is true of a very-wide range of markets. Supermarkets, banks and hardware stores are examples of businesses with economies of scale and scope that are operating in oligopolistic markets. Not many economists would advocate regulation of their prices to remedy a market

⁸ OfTel, "Ramsey prices and the incentives of mobile operators", Ofte, 12.2.02 – 01, p 3.

⁹ The contributors to the contestability literature in the late 1970s and early 1980s clearly hoped to prove such a theorem. The difficulties they encountered are reported in Baumol, William J, Panzar, John C and Willig, Robert D (1982), *Contestable Markets and the Theory of Industry Structure*, Harcourt Brace Jovanovich, chapter 11.

failure caused by a suspicion that their prices were not Ramsey optimal. Each of these businesses offers services to certain classes of customer that (for reasons of custom or deliberate policy) are not priced on a per-unit basis. We would not normally condemn their pricing as economically inefficient because we know that markets work in a rough-and-ready way. Providing the markets were workably competitive, we would not perceive their performance to be much of a problem.

This issue was discussed by the Tribunal in the Newsagents' case, in which there was an issue of whether home delivery of newspapers was 'cross-subsidised' by sales within the store. The Tribunal found that, if correctly defined, the home-delivery service was not, in general, cross-subsidised. The Tribunal noted that retail prices work in a rough-and-ready manner:

In the typical case, there is no cross-subsidy of home delivery, although it is conceivable, as Mr Prowse pointed out, that there could be "some small general stores" that would find delivery uneconomic. Further, within the one delivery territory, there may be instances of some delivery customers "cross-subsidising" others, in that an element of averaging takes place. But then we reflect that an element of averaging of revenues and costs is very common in retailing generally, in that it is not worthwhile to make the calculations and charge each customer separately.¹⁰

It might be said that fixed-to-mobile termination charges are different from the prices charged by the local hardware store because the termination charges are wholesale prices charged to a carrier – as distinct from retail prices charged to a buyer of a packet of nails. But this distinction is not a real one: the purchaser of banking services, groceries or hardware may well be a business rather than a final consumer. The conclusion must be that deviation of per-unit prices from their Ramsey-optimal levels (by itself) should not be classified as an instance of market failure.

4.2. Second possible sign of market failure: termination charges not decreasing sufficiently over time

The current form of regulation of fixed-to-mobile termination in Australia is that the fixed-to-mobile termination charges must decrease over time at least in line with retail price movements of the overall mobile package (including access and outgoing calls). In effect, this is a form of incentive regulation, similar in form to the CPI minus X formulations. The difference is that this formulation does not choose an arbitrary number for X, but ties the rate of decrease to mobile charges.

In its Discussion Paper for the Review, the ACCC notes its concern with the results of this form of regulation. In effect, the ACCC is concerned that the regulation does not form much of a constraint:

¹⁰ *Re 7-Eleven Stores Pty Ltd, Australian Association of Convenience Stores Incorporated and Queensland Newsagents Federation* (1994) ATPR 41-357, at 42,697.

The results of this monitoring to date are concerning in that the carriers are reporting large increases in the retail price of mobile telephony services. That said, close examination of the data provided by carriers has led the Commission to hold concerns about the data provided to the Commission by carriers and the application of the appropriate methodology. In particular, monitoring prices for mobile termination are well in excess of price movements estimated by the Commission for the purposes of the 2001-02 Division 12 Report.¹¹

The concern of the ACCC raises the question as to the appropriate rate at which fixed-to-mobile termination charges should be decreasing over time. This will be related, in some way, to the rate of technical progress in the mobile telecommunications industry. There are no easy ways to obtain a number for this parameter. Perhaps the best one can do is to look at the rate of decreases of telecommunication prices in general – as a rough guide to the rate at which one might expect the prices for mobile services in particular to decrease.

Any concern by the ACCC about the rate of decline over time of fixed-to-mobile termination rates must be related to Ramsey-optimal pricing. This is dictated by the criteria listed in s 152AB. If the fixed-to-mobile termination rate is to indicate market failure, the price of termination must be substantially different from its Ramsey-optimal level – because the efficient set of prices is that which satisfies the Ramsey rules.

Of course, Ramsey prices may decline over time. The obvious reasons for this would be:

- Marginal costs declining over time; and/or
- The revenue required to meet the break-even constraint declining over time (i.e. fixed and common costs declining over time).

If either of these was true, in order to satisfy the rules of economic efficiency Ramsey prices would need to decline; but the reason they would need to decline is because any other pattern of prices would be inefficient. That is, the optimal rate of decrease over time is that which would be dictated by economic efficiency.

4.3. Market failure implies a misallocation of resources

We argued in section 1 above, that declaration of the fixed-to-mobile termination service could only be justified under the criteria of s 152AB if the ACCC were persuaded that declaration encouraged economically-efficient use of, and investment in, the relevant infrastructure. Economic efficiency has to do with the allocation of resources. So if the fixed-to-mobile termination charge is too high for the interests of economic efficiency (no one is arguing that it is too low) it could only be too high because the high price led to a misallocation of resources.

¹¹ At p 33.

The fixed-to-mobile termination charge is the price of one of the inputs that influences the retail price of fixed-to-mobile calls. The incorrect pricing of an input can lead to an inefficient allocation of resources in two principal ways:

- The first is that the inefficiently-high pricing of the input may lead the producer of the final product to substitute other inputs for the input that is priced too high. In this case, the argument would have to be that the high pricing of fixed-to-mobile termination causes Telstra and other fixed line service providers to substitute some other input for termination. That cannot be true. Every fixed-to-mobile call must utilise one termination service. There is no possibility of input substitution because every unit of output (a fixed-to-mobile call) uses one unit of input (a fixed-to-mobile termination service).
- The second source of possible inefficiency is that the inefficiently-high pricing of the input may lead the producer of the final product to set the retail price too high and this, in turn, will lead to too little consumption of this service. If this argument is applied to fixed-to-mobile termination, the argument must be that the inefficiently-high price for fixed-to-mobile termination causes the retail price of fixed-to-mobile calls to be too high and this, in turn, results in too little consumption of fixed-to-mobile calls. That is, too few resources will be devoted to the production of fixed-to mobile calls. If the ACCC wishes to declare the fixed-to-mobile termination service, they must be persuaded of this argument.

We are now in a position to examine options for regulation. We have argued that, if regulation is to encourage economic efficiency, it must be targeted as precisely as possible on some identified market failure. If this principle is applied to the declaration of fixed-to-mobile termination, we must first identify the source of market failure. The only logical possibility seems to be that the ACCC considers that the fixed-to-mobile termination charge is too high and this causes the retail price of fixed-to mobile calls to be too high, leading to too few resources being devoted to fixed-to-mobile calls.

We do not find this argument persuasive. As we argued in section 4.1, high rates of technological change, high rates of churn and low rates of return on shareholders' funds all suggest that the Australian market for mobile telecommunications services is workably competitive. If a market is workably competitive, a regulator would be unwise to believe that they could improve the efficiency of its prices – unless there were some substantial other source of market failure.

Notwithstanding our view that regulatory intervention in relation to fixed-to-mobile termination charges is unlikely to be warranted on economic efficiency grounds, in section 5 we consider six options for regulating the price of fixed-to-mobile services.

5. Regulatory options

As we argued in section 2.3, the literature on the economics of regulation advises that instances of market failure should be addressed at their source. Regulation can only promote economic efficiency if the market in question is characterised by a lack of competition, or some other form of market failure.

In this section we discuss a range of possible regulatory options that might be considered by the ACCC. In each case, we attempt to explain the type of market failure that the regulation might be targeted to remedy. We first examine regulatory options that are targeted at the fixed-to-mobile termination charge directly:

- Regulatory determination of the fixed-to-mobile termination price; and
- Regulatory capping of the minimum rate of decrease of the termination charge.

However, as we argued in section 4.3, any problem with the economic efficiency of fixed-to-mobile termination must ultimately be a problem because the retail price of fixed-to-mobile calls is too high. So we also examine options that are directed at the retail prices of fixed-to-mobile calls. Four regulatory options of this type are discussed:

- Direct price control of retail fixed-to-mobile charges;
- Multi-basket CSP Pre-Selection;
- Wholesale (Retail-Minus) Pricing Regime; and
- Regulated pass-through to wholesale termination charges to retail.

5.1. Option One: regulatory determination of the fixed-to-mobile termination price

Contrary to the argument in this Report, the ACCC may conclude that the price of fixed-to-mobile termination is too high and that, in the interests of economic efficiency, this price needs to be constrained to encourage a lower retail price and more fixed-to-mobile calls. If the ACCC were persuaded to believe this argument, one option available to the ACCC might be to calculate the economically-efficient price for fixed-to-mobile termination.

In principle, such a step might be possible. Nevertheless, we believe that it would be unlikely to promote economic efficiency. The principle reason for this is that the Australian mobile market seems to be fairly competitive. But, even if the ACCC is persuaded that one of the prices in the mobile telecommunications market is not at its Ramsey level, it is another thing altogether for the ACCC to

form the judgement that it would be better able to fix the price at the Ramsey-optimal level than would a workably competitive market.

We argued in section 3 above that markets work in rough-and-ready ways. The structure of Part XIC suggests that regulators should only intervene to declare a service if they are persuaded of some type of market failure. In this case, that would seem to mean some form of inefficiency. So fixing the price of fixed-to-mobile termination would require two judgements on the part of the ACCC:

- that one of the prices that emerges in a reasonably competitive market (the Australian market for mobile telecommunication services) is wrong; and
- that the ACCC could improve economic efficiency by fixing this price itself.

The first of these judgements departs from the presumption that, in a rough-and-ready way, competitive markets do a pretty-good job at allocating society's resources. The second relies on a judgment that the termination price is not only bad, but that it is in some way very bad - because the tools and information that would be available to the ACCC in setting the price would themselves be rough-and-ready tools. The rough-and-ready nature of these tools and information suggest that the ACCC should not attempt to calculate a price for fixed-to-mobile termination. If the ACCC is to control the termination charges in any way, it should do so by means of the second option discussed below: controlling the minimum rate of decrease of the termination charge.

5.2. Option Two: regulating the minimum rate of decrease of the termination charge

This is essentially the scheme that will come to an end with the expiry of the current declaration in June 2004. The ACCC refers to this as its retail benchmarking approach:

The retail benchmarking approach provides that changes in each mobile carrier's access prices are benchmarked against the retail price movements of its overall mobile package (including access and outgoing calls). The initial starting point for the glide path created by this pricing rule is the lowest current access prices for the mobile origination and termination services in the market. The approach was aimed at using a proxy for the efficiency improvements and competitive pressures on mobile retail prices – the price fall in the retail segment of the market – to provide a safety net that access price falls continue to occur, particularly for the mobile termination service.¹²

This form of regulation has the advantage over the direct regulatory determination of fixed-to-mobile termination charges in that it acknowledges the limitations on the tools and knowledge of a regulator to fix a more-efficient price

¹² ACCC, *Mobile Services Review 2003, Discussion Paper*, April 2003, p 32.

than a workably-competitive market. However, the regulation is not well-targeted to any perceived problem. To repeat, any market failure that could justify declaration under the criteria of s 152AB would need to be a form of economic inefficiency of pricing that was present in a workably competitive market – the Australian mobile services market.

If the termination prices for fixed-to-mobile services are economically-inefficient (that is, they are higher than would be suggested by the Ramsey-optimal rules) there is no reason why they should not decline over time. Indeed, Frontier has been informed by Vodafone that material before the ACCC shows that, since the introduction of the retail benchmarking constraint, termination charges have decreased at a significantly faster rate than have the retail benchmarking prices

This should hardly be surprising. Each mobile carrier is producing a large range of services and has multiple sources of revenue. The prices of each service will be the outcome of its marginal cost, demand conditions and the competitive strategies of the producers and purchasers in the market. Because these drivers change over time, so too do the relative prices of the services of the multi-service producer. Some prices reduce at a faster rate (and some reduce at a slower rate) than others. It just so happens that, over the relevant period, the fixed-to-mobile termination rate has reduced at a faster rate than have some of the other services provided by mobile carriers.

We argued in section 4.3 that the only form of inefficiency that could be traced back to fixed-to-mobile termination charges was that (as a result of termination charges being too high) retail fixed-to-mobile charges were too high and this caused too few resources to be allocated to fixed-to-mobile calls. The argument might be that Telstra, and other fixed line carriers, are charging too high a retail price for fixed-to-mobile calls and that bargaining with the mobile carriers results in a sharing of these monopoly rents with the mobile carriers. A targeted solution to this problem would be to increase competition (or otherwise reduce the prices) in the market in which origination services for fixed line calls are supplied. This reasoning gives rise to the following four options.

5.3. Option Three: direct price control of fixed to mobile retail charges

If the perceived problem confronted by the regulator is in excessively high *retail* prices of fixed to mobile services, then perhaps the remedy should be directed at this level. This may be more appropriate than indirectly controlling the price of one component of its inputs – the mobile termination service – which does not appear to be a driving rising or sticky retail fixed-to-mobile prices. If price controls were deemed necessary, a more direct approach to achieving the goal of lowering retail prices would be to more specifically target retail price of fixed-to-mobile calls under a ministerial pricing determination, such as the Telstra Price Control Arrangements.

5.3.1. Telstra's price control arrangements

Retail price controls arrangements already exist for certain services provided by Telstra.¹³ These are set out in the Telstra Carrier Charges – Price Control Arrangements, Notifications and Disallowance Determination No.1 of 2002 (the Determination), made pursuant to s. 154 of the *Telecommunications (Consumer Protection and Services Standards) Act 1999*. The determination provides a range of price caps (CPI-X) on a broad basket of services ('first basket of services'), and sub-caps for particular services in the broad basket ('second' and 'third basket of services').¹⁴

The main or 'first basket' of services includes trunk calls, local calls, and international calls. Fixed-to-mobile calls are included in the 'first basket' of services as a type of trunk call.¹⁵ Under the Determination, this basket is subject to a price cap of CPI-4.5 per cent. Telstra is therefore entitled to change the prices of any of these services in compliance with the price cap, but the *aggregate* price of all services in the price cap basket has to decline by 4.5 per cent annually in real terms (that is, net of inflation). The ACCC is responsible for reviewing whether Telstra has complied with these price control arrangements. Compliance is a condition of Telstra's carrier licence.

5.3.2. More targeted treatment retail fixed-to-mobile services

The inclusion of fixed-to-mobile as only one component of the basket allows Telstra to maintain high prices of the fixed-to-mobile service without failing to comply with the price cap if this could be offset by price reductions on other

¹³ Price controls were introduced by the Hawke Labor Government in 1989 as a mechanism to simulate the effects of competition on the then publicly owned Telecom and OTC. The four previous price control arrangements operated from July 1989 – June 1992, July 1992 – Dec 1995, Jan 1996 – June 1999 and June 1999 – June 2002. The 2002 Determination is set to apply from July 2002 – June 2005. While each price control has differed all have adopted a "CPI minus X per cent" formula to control 'baskets' of Telstra services. In 1999, the Government introduced various low-income measures.

¹⁴ Sub-caps include a 22 cent price cap on local calls, a CPI – 0 per cent price cap on a basket of local calls and line rentals (with a similar cap for connections), and a requirement for local call charges to be broadly the same for both metropolitan and non-metropolitan consumers. Further sub-caps relate to "low-spend" consumers. ACCC, *Review of Price Control Arrangements*, February 2001, p i-ii.

¹⁵ Trunk calls include fixed network domestic long distance calls, fixed-to-mobile calls, community calls and preferential (eg pastoral) calls. They do not include international or local calls. See clause 5 of Price Control Arrangements, Notifications and Disallowance Determination No.1 of 2002

components of the broad basket. Telstra therefore has the ability to selectively reduce prices for different services.

If the regulator wishes to ensure fixed-to-mobile prices actually fall, fixed-to-mobile could be made subject of a further sub-cap, perhaps in a similar fashion to the other baskets under the current arrangements – i.e. second basket (line rentals) and third basket (connection services). This cap could be set such that Telstra would be able to cover its ‘full cost’ of providing the fixed-to-mobile service (including the mobile termination charge) but would ensure a minimum fall in prices (or place an upper limit on revenues from this service). This would be a direct way of addressing the problem of retail trunk calls prices being higher than considered appropriate by the ACCC. The ACCC seems to have come to a similar conclusion:

The Commission believes there is an excessive gap between retail price and full cost inclusive of the termination charge, and that this can partly be addressed by inclusion of fixed-to-mobile calls in the price cap.¹⁶

The ACCC found that the mobile industry is sufficiently competitive to be freed from price controls. However, concerns of potential market power and excessive retail prices...

...combined with the association of fixed-to-mobile calls with the PSTN, causes the Commission to believe there is a strong case for keeping fixed-to-mobile calls in the basket of services subject to price control.¹⁷

Considering that this price control regime already exists and already includes fixed-to-mobile calls, the shift to a more specific sub-cap for fixed-to-mobile services would not require significant extra costs in terms of implementation or compliance. The ACCC, through the ministerial determination, could perhaps go further to focus Telstra’s efforts on reducing retail prices of fixed-to-mobile, if this is where the excessive retail prices are the problem.

Having said that, price controls are highly interventionist and blunt policy instruments. While they may serve to achieve the objective of reducing retail prices, they are also likely to have effects which may not be in the LTIE, because they may cause distortions to the efficient use of, and investment in, infrastructure, and to competition in the long-run. Forcing prices down could benefit existing consumers and may increase supply, but it could make entry

¹⁶ ACCC, *Review of Price Control Arrangements*, February 2001, p. 24.

¹⁷ ACCC, *Review of Price Control Arrangements*, February 2001, p. 24.

unprofitable if there are fixed costs associated with this entry. In turn, the lack of effective competition perpetuates the need for regulation.¹⁸

As with the current arrangements, there will still be distributional issues. For example, the ACCC (2001) found in its *Review of Price Control Arrangements*, that:

While prices of Telstra's price-capped services have fallen substantially in real terms since 1989, prices of services used by business customers have generally fallen faster than prices of services used by residential customers. Volume discounts have tended to be focused more on business customers, so that their inclusion in the cap and Telstra's reliance on them to achieve the requirements of the price-cap has led to a greater share of the benefits going to business customers.¹⁹

The potential costs and benefits of such a blunt policy would require rigorous analysis and scrutiny before it can be implemented. The ACCC needs to examine why there has not been entry into this market, to explain why the fall in retail price of fixed-to-mobile has not been as great as expected (notwithstanding the fall in the termination charge), and address the source of the problem.

5.4. Option 4: multi-basket pre-selection.

If prices of fixed-to-mobile services are not falling as expected, because of an uncompetitive market in the provision of this service at the retail level, then the long term interests of end-users would be better served by policies promoting efficient entry to the provision of fixed-to-mobile services. A first step would be to remove artificial barriers to entry into this market. The present system of carrier pre-selection (CPS) constitutes such a barrier to entering the provision of fixed-to-mobile services.

5.4.1. Background

Currently in Australia, an end-user can pre-select one service provider to supply all services within the a single 'basket' of services consisting of: national long distance calls, international direct dial calls, operator assisted calls, international ring-back price calls, and fixed-to-mobile calls.²⁰ Pre-selection results in automatic

¹⁸ Centre for Research in Network Economics and Communications (CRNEC, University of Auckland), *The Costs and Benefits of Regulating Electronic Communications Services*, A report to the Ministerial Inquiry into Telecommunications in New Zealand, 25 September 2000, p 6.

¹⁹ ACCC, *Review of Price Control Arrangements*, February 2001, p. 10.

²⁰ In Australia, carrier pre-selection (CPS) has been available since 1993, but only for fixed long-distance and international calls. In order to introduce competition in fixed-to-mobile calls, the ACA determined in December 1998 that calls from fixed-to-mobile services should be carried by the pre-selected long distance carrier, rather than the carrier providing the local access service. Telecommunications (Provision of Pre-selection for Specified Carriage Services) Determination

use of the pre-selected company's services without requiring the customer to dial a prefix. However, users can still opt out of pre-selection and choose to use the services of another CSP on a call-by-call basis, using an over-ride code (ID code of the other CSP). The arrangements are prescribed by regulation.

The Australian Communications Authority (ACA) has been proposing a move towards 'multi-basket' pre-selection. By separating the call types currently in a single basket into two or more baskets, multi-basket pre-selection would allow an end-user to pre-select a different CSP for different pre-selectable call types. The ACA issued discussion papers seeking comment on multi-basket pre-selection options in December 1998, and in June 2001.²¹ Amongst other things the ACA (2001) sought the views of members of the public on the effectiveness of existing arrangements; whether the arrangements should be several different baskets of services (multi-basket) rather than a single basket; the conditions under which certain carriage service providers should be subject to pre-selection obligations; and whether they should be extended to cover other types of calls. Key considerations included competitive, technical, cost and implementation issues which would support or detract from the benefits of introducing multi-basket preselection.

Our focus here is on how the move to multi-basket pre-selection would help address the perceived problems in the fixed-to-mobile service and as an alternative to, and possibly more appropriate regulatory mechanism than, regulating mobile termination charges. We will assume that it is now a technically feasible proposition.

5.4.2. Single-basket preselection and competition in fixed-to-mobile

The shift from a single-basket to a multi-basket pre-selection may be thought of as further unbundling of call services. Current single-basket arrangements impose a barrier to entry of new or smaller and non-integrated preselectable CSPs, as entrants are required to carry all call types in the basket. The unbundling of the single-basket would allow CSPs to specialise, and compete with integrated CSPs. Accordingly, expected benefits from such unbundling would include expanding consumer choice and promoting competition.

Some would argue that multi-basket preselection may not be necessary, and that override codes already provide an avenue for entry into pre-selectable services.²²

1998; and Telecommunications (Provision of Pre-selection for a Standard Telephone Service) Determination 1998.

²¹ A discussion paper was released in December 1998, ACA, "Multi-basket Pre-selection", in response to the Australian Communications Industry Forum (ACIF, 31 July 1998) representation that the industry has been unable to agree on the desirability of multi-basket pre-selection.

²² For example, Optus cited this as one of the reasons for its opposition to multi-basket preselection. The reasons given include:

Override codes indeed give end users some degree of flexibility by allowing the use of a non-preselected CSP for a particular call. However, non-preselected CSPs clearly have a disadvantage against pre-selected CSPs. This is because the override codes impose a switching cost on the end-user who wants to take advantage of a cheaper service, as the CRNEC (2000) elaborates:

In this case, there are two distinct types of switching cost. The first is the cost, in time and effort, of locating a suitable bypass provider and arranging an account with them. This cost will remain, even after the F2M service is regulated. The second type of switching cost is the time and effort required to remember and then dial the relevant over-ride code. It is this *per-call* cost that is eliminated by regulating F2M pre-selection. The result will be closer competition between F2M providers.²³

The inconvenience of having to dial an override code may be alternatively considered as degrading the quality of the service of competing suppliers.²⁴ In any standard model, this would increase product differentiation and weaken price competition.²⁵

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- There are no pro-competitive benefits associated with multi-basket pre-selection;
 - Multi-basket pre-selection substitute goods currently exist (e.g. call override) and there is no barrier to consumers taking advantage of these products now;
 - Consumer demand does not exist for multi-basket pre-selection;
 - Optus believes that multi-basket pre-selection is not technically feasible due to the need for extensive switch development;
 - The costs of providing multi-basket pre-selection would be large. The consumer benefits which would result are minimal.

Cable & Wireless Optus, "Optus Preliminary Submission to the Productivity Commission's Draft Report Telecommunications Competition Regulation", May 2001, para. 5.33, p. 53.

²³ Centre for Research in Network Economics and Communications (CRNEC, University of Auckland), *The Costs and Benefits of Regulating Electronic Communications Services*, A report to the Ministerial Inquiry into Telecommunications in New Zealand, 25 September 2000, p 49.

²⁴ Centre for Research in Network Economics and Communications (CRNEC, University of Auckland), *The Costs and Benefits of Regulating Electronic Communications Services*, A report to the Ministerial Inquiry into Telecommunications in New Zealand, 25 September 2000, p 49.

²⁵ Centre for Research in Network Economics and Communications (CRNEC, University of Auckland), *The Costs and Benefits of Regulating Electronic Communications Services*, A report to the Ministerial Inquiry into Telecommunications in New Zealand, 25 September 2000, p 49.

5.4.3. Multi-basket pre-selection and LTIE of fixed-to-mobile services

The problem with focussing on wholesale mobile termination charges is that regulation of these can only be an indirect mechanism for achieving the objective of more competitive retail prices for fixed-to-mobile calls. Without sufficient competitive pressure in the provision of the fixed-to-mobile service, fixed line carriers may be unlikely to pass through lower wholesale mobile termination rates to retail customers in the form of lower fixed-to-mobile retail prices. The savings will accrue predominantly to the incumbent fixed line provider(s). There may be signs that competition among fixed line service providers may be increasing. However, barriers such as the protection of integrated CSPs under single-basket pre-selection limit both the current intensity of competition in the market, as well as the rate at which the market moves to more effective competition.

By separating the fixed-to-mobile services (into its own basket, or in another basket sub-set of the current basket), the number of choices would increase for:

- 1) Consumers. It would enable them to pre-select a different CSP for this type of call without needing to enter override codes every time. The ACA (2001) expects that ability of pre-selection of different CSPs for different services would greatly increase choice, and would likely reduce use of CSPID codes.²⁶
- 2) Potential CSP entrants. It would enable them to provide this service as a pre-selected CSP without having to provide all other pre-selected call types (currently in the single-basket).

The reduction of this barrier to entry increases the possibility of specialist pre-selected CSPs, and allows for greater competition in the provision of this service. The removal of switching costs and/or product differentiation would create the environment for more intense and effective competition. Entry would generate downward pressure on retail prices of fixed-to-mobile services.

Indeed, the introduction of carrier pre-selection in fixed-to-mobile calls separated fixed-to-mobile from local calls and introduced them as a distinct service within the 'single basket' in July 1999. This resulted in a reduction in the prices of such calls by 17 per cent to 20 per cent between February and August 1999.²⁷

The experience in New Zealand provides another example. Fixed-to-mobile carrier pre-selection was introduced in New Zealand in August 2001. A number of parties, including Telecom, TelstraClear, and the NZCC have agreed that this

²⁶ ACA (2001), p. 12.

²⁷ OECD "Cellular Mobile Pricing Structures and Trends" (2000) at Table 15.

has led to reduced barriers to entry by non-integrated into the provision of retail fixed-to-mobile call services.²⁸ This was supported by figures provided by Telecom and TelstraClear which both showed increases in volume of PSTN to mobile calls made by other carriers.²⁹

When compared to the regulation of the upstream input of mobile termination charges, this regulatory approach may be more effective in achieving LTIE. This regulatory approach:

- targets the source of high retail charges in the downstream service of fixed-to-mobile calls;
- would be expected to speed up the process of entry, which would compete away any excess margins that currently exist for this service; and
- would increase incentives for current providers to pass the lower wholesale termination charges through to consumers.

5.5. Option Five: price wholesale services at fixed per cent discount of average retail charge

One way of facilitating access (and competition) in the retail provision of fixed-line services would be to require the incumbent fixed line operator to sell wholesale services (including fixed-to-mobile) at a fixed percentage discount to its average retail charge. Recent application of such a rule in New Zealand provides a good example.

5.5.1. NZ Experience:

New Zealand's *Telecommunications Act 2001* introduced the concept of the 'designation' of services. This encompasses an obligation to provide the service in accordance with specified pricing principles.. There are number of services which were designated effective immediately at the commencement of the Act. These services included: interconnection with Telecom's fixed telephone network; number portability; wholesaling of Telecom's fixed network services (including

²⁸ The NZCC concluded that:

Entry conditions appear to have improved with the introduction of fixed-to-mobile pre-selection, which has served to promote non-integrated entry through entrants not having to supply a broad range of telecommunications services.

New Zealand Commerce Commission (2003) *Determination on the TelstraClear Application for Determination for "Wholesale" Designated Access Services : Decision 497*, p 96.

²⁹ New Zealand Commerce Commission (2003) *Determination on the TelstraClear Application for Determination for "Wholesale" Designated Access Services: Decision 497*, p 95 -96.

residential lines); and fixed-to-mobile carrier pre-selection from Telecom's fixed network.

In May 2003 the New Zealand Commerce Commission (NZCC) released a determination relating to the supply of services on a wholesale basis between Telecom New Zealand and TelstraClear under the Act. Fixed-to-mobile was one of the services covered by the NZCC's determination.³⁰ The NZCC ordered that the designated services be made available by Telecom for resale to TelstraClear customers, setting a wholesale price of 16 per cent off Telecom's standard retail prices.

In summary, the determination process required the NZCC to undertake an analysis of competition in the markets identified – namely, whether Telecom faced limited, or is likely to face lessened, competition for the services contained within the Application. It was found that the 'SME [small and medium enterprises] National', and 'Corporate National' segments of the fixed-to-mobile services market had limited competition. Where competition is limited, the NZCC decided whether that particular retail service should be available to competitors at specified wholesale rates, identifying individual services that the applicant (TelstraClear) could be able to resell at a retail level. After this process, the NZCC determined that 98 services pass both the jurisdictional and competition thresholds and will be available to TelstraClear in specified markets on a resale basis.³¹

The NZCC then identified the retail price for each service and calculated a discount to the retail price at which the wholesale service must be made available to competitors. The 'Standard Retail Price' of each designated service was calculated by Telecom, such that the calculated average modal price covers 80% of the observed price points for that service in the market.³² The discount is benchmarked against discounts applying in comparable countries that apply a retail minus wholesale methodology. In choosing the discount rate to apply, the NZCC took into consideration the relative factor costs of the benchmark country (in this instance, 47 US states), and the effect on incentives to invest. It stated that it was appropriate to select a rate from within the lower half of the benchmarked range, finally deciding on the 25th percentile value of 16 per cent for the discount.

³⁰ Other services covered included business line rental and local calling, directory assistance, voice messaging, business and residential broadband access and data services outside the major centres. New Zealand Commerce Commission, *Determination on the TelstraClear Application for Determination for "Wholesale" Designated Access Services*, Decision 497, 12 May 2003.

³¹ New Zealand Commerce Commission, *Determination on the TelstraClear Application for Determination for "Wholesale" Designated Access Services*, Decision 497, 12 May 2003, p. 6.

³² New Zealand Commerce Commission, *Determination on the TelstraClear Application for Determination for "Wholesale" Designated Access Services*, Decision 497, 12 May 2003, p. 6.

Telecom has applied for this discount rate to be reviewed.³³ It is too early to be able to gauge how successful this measure will be, particularly in seeing prices for fixed-to-mobile services fall.

5.5.2. Wholesale (retail-minus) pricing and LTIE of fixed-to-mobile services

Wholesale (Retail-Minus) Pricing is consistent with the precept that regulation should be directed at the source of the problem. The retail-minus approach is often more appropriate than cost-plus approaches when it appears that the problem lies in competition at the retail level rather than at the network level.³⁴ The current regulation of mobile termination charges – retail benchmarking – is based on the ACCC's acknowledgement that an alternative (cost based) TSLRIC model may be overly interventionist, and inappropriate considering that the mobile services market was increasingly competitive:

The Commission notes that a significant difference between benchmarking changes in access prices and TSLRIC pricing is that the former only establishes a 'glide path' for price changes, rather than actually setting the access price. TSLRIC pricing would, therefore, appear to prima facie better meet the legislative criteria by ensuring access prices are moved to costs. In the case of the mobile services market, however, the Commission does not accept this view. It considers that, consistent with the increasing competitive forces in the mobile services market and the nature of the market failure, it is more appropriate for the Commission to take a less intrusive approach to regulation for mobile services.³⁵

Requiring Telstra to wholesale its fixed-to-mobile services to another service provider at a discounted rate off the retail price creates the opportunity for another provider to enter and resell these services at the retail level. The advantage of this type of regulation is that it provides consumers the benefit of greater competition and access to lower retail prices for the service.

The viability of this access pricing rule in compelling fixed line service suppliers to rebalance prices towards costs may be tempered however, by constraints on their ability to set cost-based retail prices, such as universal service obligations, and the price-control arrangements. It is worth noting, therefore, that the NZCC was able to make the abovementioned determination because the application concerned 'Relevant Wholesale Services', which are *non-price capped* retail services offered

³³ Note: On 3 June 2003, Telecom filed an application under the Telecommunications Act 2001 ("the Act"), requesting that the Commission review the discount set in the Final Wholesale Determination for Designated Access Services issued on 12 May 2003.

³⁴ *Wholesaling Issues in Telecommunications*. Final Report for Clear, prepared by Network Strategies & Analysis, 30 October 2001, p.6.

³⁵ ACCC, *Pricing Methodology for the GSM Termination Service, draft report, December 2000*, p. 49.

by Telecom to end-users by means of Telecom's fixed telecommunications network.

Currently, Telstra's provision of the fixed-to-mobile service is subject a price cap (see section 5.3 above). However, as described above, the price of Telstra's fixed-to-mobile service is constrained only insofar as Telstra is unable to reduce prices of the other services in the basket of services sufficiently to comply with the cap on the whole basket. Current price caps applying to fixed-to-mobile services may be unlikely to create problems with a retail-minus pricing. However, further analysis may be required to determine the extent of distortions to Telstra's existing retail fixed-to-mobile prices created by other regulatory constraints on Telstra.

5.6. Ensuring the 'pass-through' of wholesale termination charges to retail fixed-to-mobile prices

If the wholesale mobile termination charge is to be regulated, the ACCC must consider options to ensure that savings accruing to fixed line operator is passed onto the originating end-user. As the historical data presented by Vodafone suggests, without adequate pressure from effective competitors or regulation there is little incentive for Telstra to reduce the retail prices for fixed-to-mobile services to reflect falling costs of the mobile termination input. A mechanism by which Telstra commits itself to passing on the savings to fixed-to-mobile end-users represents a missing link between the objectives of the ACCC to see fixed-to-mobile prices fall, and the current remedy of regulating the termination charge. The risk of incumbent fixed line network operators not passing on savings in mobile termination charges is a problem faced by regulators in other countries.

In the UK, British Telecom (BT) has committed to pass on to end-users the benefit of savings from the price reductions which have been imposed on the mobile termination service.³⁶ These arrangements are outlined below.

5.6.1. United Kingdom – BT commitments to 'pass-through'

BT has been subject to a similar model of price control arrangements as Telstra in Australia – i.e. price caps on a 'price control basket' of services. This has regulated BT's main phone charges for the lowest spending 80 per cent of residential customers. The retail price control for public switched telephony, that applied from August 1997 to July 2001 and extended to July 2002, was RPI minus 4.5 percent. The controlled services included: connection (of a new

³⁶ "BT Customers Set to Enjoy Cheaper Calls to Mobiles" BT Mediat Release (NR0302), 22 January 2003, <http://www.btplc.com/Mediacentre/Archivenewsreleases/2003/nr0302.htm>

service); take-over (of a service already installed); line rental; local geographic calls; national geographic calls; international calls; and operator assisted calls.³⁷ In July 2002, BT accepted Oftel's proposals for modified price controls which commenced on 1 August 2002, to apply for four years. The new licence conditions imposed a RPI-RPI price cap (i.e. pegged at existing level, not allowed to rise with inflation).³⁸

BT has been subject to a separate control on its 'retail retention' on calls to mobile operators, which initially applied to O₂ (BT Cellnet) and Vodafone only. BT's retention is defined by its retail price net of termination payments to the mobile operator. It is entitled to retain a proportion of the total cost to the customer of the call, to cover the costs of starting the call on its network and the costs of collecting and passing on the payments to mobile operators. The Monopolies and Mergers Commission decided that BT's average retention on calls to Vodafone and O₂ subscribers should not exceed 3.40ppm for the year to 31 March 2000. Under this control applying from 1 April 1999 to 31 March 2002, BT's 'retail retention' of calls to the mobile networks could not increase by more than RPI-7 per cent each year. In February 2001, Oftel extended this control to 31 July 2002 to align it with the controls for the other retail services.³⁹ In this way, changes in the price of mobile termination is passed on to the consumer:

The Director considers that an increase in termination charges is likely to lead to a rise in retail call prices. Termination charges form the largest part of the marginal cost incurred by a fixed PECN provider when providing fixed-to-mobile calls. BT's retail prices for calls to mobile are the sum of the charge it pays to the terminating MNO and BT's regulated retention rate (discussed in Oftel's *Review of the fixed narrowband wholesale exchange line, call origination, conveyance and transit markets, consultation* – published on 17 March 2003). Therefore, BT transfers any increase in the costs of providing calls to mobiles via its retail prices. Fixed PECN providers other than BT do not have market power in the retail market; it can thus be expected that they would follow BT's behaviour.⁴⁰

This control on BT's retention did not apply to calls to Orange or One2One subscribers. However, in its general retail price control decision of 20 June 2002, Oftel extended the regulation of the retention on fixed to mobile calls to calls to all mobile networks. Oftel also made the following changes to the control on BT's retention: regulation of the retention was applied to fixed to mobile calls from

³⁷Oftel, *Protecting Consumers by Promoting Competition: Oftel's Conclusions*, 20 June 2002, <http://www.oftel.gov.uk/publications/pricing/2002/pcr0602.htm>

³⁸ This was to be revised to one which pegs prices to the rate of inflation once a new wholesale line rental product – which BT is required to provide under another new licence condition – was implemented and is used by other operators to provide services.

³⁹ Consultation document issued by the Director General of Telecommunications, 31 July 2001, <http://www.oftel.gov.uk/publications/pricing/pcr0701.htm>

⁴⁰ Oftel, *Review of mobile wholesale voice call termination markets*, 15 May 2003, p. 17.

both BT and Kingston's⁴¹ networks; regulation of the retention was to be done through inclusion in the general retail charge control basket, rather than as a separate charge control; the retail basket price control was set at RPI-RPI and will apply for four years from 1 August 2002.

The price reductions in mobile termination charges, proposed by the UK Competition Commission inquiry (published January 2003), include a one off cut of 15 per cent by 24 July 2003 followed by RPI-15 per cent (RPI-14 per cent for Orange and T-Mobile) for the following three years until 2005-2006.⁴² Oftel modified the mobile operators' licence in April to require the first 15 per cent reduction by July. Arrangements for the control of termination charges after July 2003 could only be considered by Oftel after the completion of a market review under the terms and procedures of the new European Directives on electronic communications networks which were introduced in July. The market review, completed in May, proposed charge controls inline with the UK Competition Commission's recommendations.⁴³ Under the new EU regime, the existing retail price controls are expected to be maintained.⁴⁴

⁴¹ Kingston is a local operator which is the incumbent in the city of Hull. It is regulated in a similar way to BT.

⁴² The UK Competition Commission inquiry (*Report on references under section 13 of the Telecommunications Act 1984 on the charges made by Vodafone, O2, Orange and T-Mobile for terminating calls from fixed and mobile networks*, January 2003) endorsed the conclusions of Oftel (Oftel, *Review of the charge controls on calls to mobiles*, September 2001) on the need to impose price caps on the termination rates of MNOs. The Commerce Commission recommended that:

- each MNO should reduce the level of the total termination charge by 15 per cent in real terms before 25 July this year;
- O₂'s and Vodafone's charges should be subject to a further reductions of RPI-15% reduction between 25 July and 31 March 2004 and for each of the two subsequent financial years. Orange's and T-Mobile's charges should be reduced by RPI-14% in each of these subsequent two time periods. (The difference represents the Competition Commission's view of the difference between the relevant costs of the operators).

Note: Oftel imposed a price cap of RPI-9% on the termination rates of Vodafone and O2 (BT Cellnet) in 1999 after an earlier Competition Commission investigation. Oftel's 2000-2001 review proposed a charge cap of RPI-12% for each of the four years from 2001-02 to 2005-06. This was rejected by the MNOs, which resulted in Oftel referring the matter to the Competition Commission, to consider public interest implications of not having price controls on termination charges.

⁴³ See: Oftel, *Review of Wholesale Voice Call Termination Markets: EU Market Review*, 15 May 2003, p 112.

⁴⁴ In March 2003, Oftel published its consultation on the review of the fixed narrowband retail market. It concluded that BT and Kingston both had 'significant market power' in the calls to

mobile market. Following this, it imposed an RPI-RPI control on these services (i.e. a continuation of the existing control).

6. Conclusions

The declaration of fixed-to-mobile termination will expire on June 2004. The ACCC must decide whether it should extend that expiry date or issue a new declaration. According to the statute, the ACCC should only make one of those decisions if it is satisfied that extension or issuing of a declaration would promote the objectives that are listed in s 152AB.

Of the objectives listed in s 152AB, one that may appear relevant to this decision is that declaration might promote the long-term interests of end-users by making the price of termination of fixed-to-mobile calls closer to that which is economically efficient. Because mobile operators produce a large range of services with of fixed and common costs, the price of fixed-to-mobile termination would only exhibit market failure if it departed substantially from its Ramsey-optimal level. There is no evidence that this is the case. The Australian mobile services market is workably competitive; and, although this does not necessarily produce a set of Ramsey-optimal prices, one would normally expect that the prices of a workably competitive market would not require regulation in the interests of economic efficiency.

In a market environment economic inefficiency occurs when price signals result in a misallocation of resources. The benefits of regulation may outweigh the costs if regulatory intervention can prevent this misallocation of resources by improving pricing signals.

Frontier Economics does not believe that regulation would promote economic efficiency in this case. However, if the ACCC believes that the termination charges for fixed-to-mobile services are too high for economic efficiency, this implies that the ACCC considers that the termination charges are causing the retail price of fixed-to-mobile services to be too high and that these retail prices (in turn) are causing too few resources to be devoted to fixed-to-mobile calls. This then raises the question as to how best to direct regulatory instruments to address the problem that has been identified by the ACCC. In particular, would it be more efficient to target retail competition and prices or to target termination competition and prices?

Direct regulation of prices – whether retail fixed-to-mobile prices or termination charges – would be difficult to justify in the interests of economic efficiency. Regulators lack the analytical tools and the information that would enable them to improve on market outcomes, except in cases of gross inefficiency. A better-targeted form of regulation may be to make moves to increase competition in the retail market for fixed line services. Measures such as multi-basket pre-selection or regulated wholesale prices for fixed line services may put pressure on retail prices – including fixed-to-mobile retail prices. This would limit any possibility that excess profits from the fixed-to-mobile service were being captured by mobile operators.