

A Critique of the Commerce Commission's Draft Findings on the Efficiency of Price Control of WIAL

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14 August 2001



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1 Introduction and summary

1.1 Introduction

This report critiques the approach adopted by the Commerce Commission in analysing the efficiency effects of price control on Wellington International Airport Limited (WIAL).

1.2 General framework adopted by the Commission

The report concludes that the general approach adopted by the Commission of using an efficiency test is both consistent with the Commerce Act and conceptually sound—the Commission should recommend price control only if price control would create a net efficiency benefit.

However, by not adopting a consistent comparative institutional analysis, or a with and without price control comparison, the Commission risks making significant errors of judgement. In particular, the Commission has not addressed the central question as to whether price control would result in efficiency gains relative to the status quo. Instead, the Commission simply assumes that price control would eliminate 50% of any inefficiencies it estimates from comparing the status quo relative to a theoretical ideal. This assumption is not supported by evidence or argument.

Nor is it sufficient for the Commission to analyse the comparative static of historical results in order to determine whether price control would lead to better outcomes in the future. To recommend price control, the Commission must come to a view that price control would change the incentives, information, or capabilities of decision-makers such that future outcomes would be more efficient than in the absence of price control. The Commission does not present such an analysis in its report.

Finally, the Commission's approach does not appear to recognise that it is required to make decisions on the basis of uncertain information. By not adequately incorporating uncertainty into its decision-making, the Commission risk focusing on aspects which are easy to quantify, at the expense of consequences which are much more difficult to estimate but which are likely to be more important.

1.3 The Commission's estimates of efficiency consequences of price control

The Commission has prepared a fairly rudimentary numerical analysis of the efficiency effects of price control. The analysis presented in this report suggests that each type of efficiency calculation carried out by the Commission appears to be biased in favour of price control. The most significant biases are in regard to:

- The assumption of a single, simple price that removes from the Commission's analysis the prospect that price control could prevent airports from adopting more efficient pricing structures.

- The absence of any evidence or argument to support the Commission's assertion that price control would result in productivity gains of 0.5% of operating costs, excluding depreciation. Reasoned argument would lead to a conclusion that price control is more likely to reduce productive efficiency, when compared to the status quo.
- A lack of consideration by the Commission for the incentive effects of price control on innovation and dynamic efficiency.

Correcting the cost-benefit analysis for these issues would likely present a very different picture of the efficiency effects of price control.

1.4 Estimates of direct costs

The Commission adopts a conceptually robust approach to estimating the direct costs of price control as it compares estimated costs with and without price control. However, the Commission significantly understates the direct costs of price control by ignoring the opportunity costs of administering and complying with price control. The opportunity costs of price control include the loss of value which management of the firm might otherwise have created if scarce management time had not been devoted to attending to the regulator's needs, and the gains which may have resulted from the Commission's resources being devoted to its next best alternative. The 'opportunity cost' of the taxes raised to fund the Commission's activities should also be incorporated into its estimates.

2 The Commission's draft conclusions and scope of report

2.1 Report focuses on efficiency of price control of Wellington Airport

This report focuses on the conclusions reached by the Commission with regard to whether price control of Wellington International Airport Limited (WIAL) would result in net efficiency benefits. The Commission:

- Concludes that price control would not have allocative or dynamic efficiency benefits.
- Assumes price control would give rise to productive efficiencies of 0.5% of operating costs, excluding depreciation.
- Concludes that the administrative and compliance costs of price control would outweigh the productive efficiencies the Commission assumes would arise from price control of WIAL.

On this basis, the Commission concludes in its draft report that subjecting WIAL to price control would not result in efficiency benefits.

2.2 Structure of this report

The body of this report is structured into the following three substantive sections:

- An assessment of the analytical approach adopted by the Commission.
- A review of the calculations of allocative, productive and dynamic efficiency carried out by the Commission.
- A comment on the Commission’s estimate of the direct costs of regulation.

3 The Commission’s overall approach to estimating efficiency

To determine whether price control is warranted under the Commerce Act, the Commission considers whether price control would be in the interests of the economy as a whole—that is, whether price control would give rise to net efficiency benefits. The concept of using an efficiency test is both consistent with the Commerce Act and conceptually sound—the Commission should recommend price control only if price control would create a net efficiency benefit. However, there are serious flaws in the way the Commission has implemented its net efficiency test.

3.1 The Commission’s approach

The Commission conducts its efficiency test by:

- Estimating the efficiency gains that could be achieved from moving from the current situation, the status quo, to a theoretical ideal of near-perfect efficiency.¹
- Assuming that price control could achieve 50% of potential efficiency gains available in moving from the status quo to a theoretical ideal of near-perfect efficiency.
- Estimating the direct incremental costs of price control (that is, the additional administrative and compliance costs of price control).

If 50% of the efficiency gains that may theoretically be achievable in an ideal world exceed the additional administrative costs arising from price control, the Commission concludes that price control would result in a *net* efficiency gain. Under the Commission’s particular approach to estimating efficiency, price control can never give rise to a net efficiency loss.²

¹ Productive and dynamic efficiency are maximised in this alternative world, but allocative efficiency is not maximised because price is set at average rather than marginal cost.

² The Commission’s approach can be summarised by the following equation: Net benefits = max (benefits – costs, zero). In its spreadsheets, the Commission implements the equation using “if” rather than “max” statements; the result is the same.

3.2 Flaws in the Commission’s approach

3.2.1 *The comparison with a theoretical ideal is unhelpful*

To establish whether price control would give rise to efficiency gains, a comparison must be made between two feasible worlds. That is, the Commission should recommend price control only if price control would give rise to greater efficiency gains than a feasible alternative. Such an approach would recognise that price control could conceivably lower, as well as improve, efficiency. It would require that any negative consequences for efficiency were offset by gains in other areas. The quantitative results of such an approach could be presented in the form of the following table:

Factor	Expected efficiency gain or loss from moving from no price control to price control (\$)
Allocative efficiency	a
Productive efficiency	b
Dynamic efficiency	c
Direct (administrative and compliance) costs	d
Total Efficiency	=a+b+c+d

a, b, c, and d may be negative if moving from no price control to price control would reduce the relevant aspect of efficiency.

The Commission is very familiar with the analytical techniques of comparative institutional analysis, or “with” and “without” comparisons, as it routinely applies these techniques in applying the competition provisions of the Commerce Act. However, it has not applied these techniques consistently in its draft report in estimating the efficiency consequences of price control.

In estimating the direct cost of price control, the Commission rightly recognises that the relevant costs are the “additional” cost of price control. That is, the costs that should be taken into account amount to the difference between the costs under price control and the costs under an alternative (the status quo). Hence, the Commission compares two feasible worlds: price control and the status quo.

However, the Commission takes a different approach in estimating the efficiency consequences of price control. Rather than comparing the outcome of price control with the status quo, the Commission looks at how inefficient the status quo is relative to a theoretical ideal. Several significant analytical risks arise from this approach:

- It tends to divert attention from the critical question asked of the Commission—that is, whether price control would improve efficiency relative to no change (the status quo).
- It encourages the compilation of historical information rather than a careful analysis of the incentive effects of price control.
- It encourages the Commission to use a toolkit suitable for making decisions under certainty rather than uncertainty.

Each of these points is considered below.

3.2.2 *Comparisons with theoretical ideals do not address the questions asked of the Commission*

The Commission was not asked to determine whether airports had achieved perfect efficiency as detailed in economic textbooks. Rather, it was asked to make a recommendation as to whether price control should be introduced. It is not clear from the draft report why and how price control might reduce any allocative, productive, and dynamic inefficiencies identified by the Commission. The Commission simply assumes that price control would eliminate 50% of any inefficiencies it estimates from comparing the status quo with to a theoretical ideal.

In adopting this assumption, the Commission (page 199) refers to a study that suggested a regulator should allow a company to retain 50% of any unanticipated cost reductions so as to maintain incentives for the company to reduce costs.³ However, the study referred to by the Commission did not investigate, and did not purport to investigate, the extent to which price control could achieve efficiency gains compared to the absence of price control. The assertion by the Commission that price control would “conservatively” achieve 50% of the potential efficiency gains estimated from comparing the status quo with a theoretical ideal is not supported by evidence or argument in the report. An arbitrary assumption is not an answer to the question as to whether price control would result in efficiency gains.

3.2.3 *Limited analysis on the effects of different regulatory tools on incentives and behaviour*

The Commission includes in its draft report an analysis of the advantages and disadvantages of different forms of price control. It concludes that different attributes of price control will vary in importance depending upon the circumstances into which a specific approach is introduced (page 190). However, the Commission does not carry this analysis into the central question as to whether price control, if applied to airports in New Zealand, would give rise to efficiency gains.

It is not sufficient for the Commission to analyse the comparative static of historical results in order to determine whether price control would lead to better outcomes in the future. Price control re-allocates decision rights from the regulated party to the regulator. Incentives, information, and capabilities of decision-makers, with and without price control, become critical factors to consider.

Economic efficiency is enhanced when those with the strongest incentives, the best information, and the most capability relevant to the decision make the decisions. For price control to serve its intended purpose, it is important for the Commission to understand clearly why the inefficiencies it estimates from historical data arose and whether they are likely to be sustained under the status quo. To recommend price control, the Commission must come to a view that price control would change the incentives, information, or capabilities of decision-makers such that future outcomes would be more efficient than in the absence of price control. The Commission does not present such an analysis in its report.

³ B Williamson, Incentives and Commitment in RPI-X Regulation, NERA Topics, 20, 1997.

3.2.4 Failure to appropriately incorporate uncertainty into numerical analysis

The Commission recognises that its estimates are uncertain and provides ranges and sensitivity analysis (often in appendices). The Commission's conclusions—as expressed for example in the Executive Summary of the Report—seem to take the inputs as certain. This way of presenting results may give a false sense of accuracy, and risks overstating the strength of the conclusions.

A more serious problem in relation to uncertainty is that the Commission does not appear to consider explicitly the uncertainty associated with regulatory decision-making. The Commission faces considerable uncertainty regarding the true efficiency effects of price control. This uncertainty is not just about magnitude, but also whether the effects are positive or negative. Not addressing uncertainty explicitly is a significant omission because decision-making under uncertainty has some distinctive features that can lead to quite different results from decisions made with certain information.

The Commission faces two choices with regard to each airport: it may recommend price control or recommend price control not be imposed. There are two possible outcomes flowing from each decision: price control would generate a net efficiency cost, or it would generate a net efficiency benefit. In total, then, the Commission needs to consider the net costs and benefits associated with four possible outcomes:

- False positive: the Commission recommends price control and price control produces a net cost.
- True positive: the Commission recommends price control and price control produces a net benefit.
- True negative: the Commission does not recommend price control when price control would have produced a net cost.
- False negative: the Commission does not recommend price control when price control would have produced a net benefit.

The Commission should recommend price control only if the *expected* value of price control is higher than the *expected* value of no price control. That is, only if:

$$p.(true\ positive) + (1-p).(false\ positive) > p.(false\ negative) + (1-p).(true\ negative)$$

where p is the probability that price control generates a net benefit. The probability of price control creating a net cost is $(1 - p)$.

Applying this type of decision framework would cause the Commission to make explicit the judgements that underlie its quantitative analysis. For instance, the ease of quantifying some effects, such as allocative efficiency, may distract from attempts to allow for the probably more important (from an efficiency perspective) but difficult to quantify consequences of price control, such as the implications for incentives for innovation. Legislative restrictions, such as price control, understandably fail to predict technological and organisation changes that alter the availability and quality of information, create new markets, and open up competition with and between markets. But the Commission must attempt to incorporate such

factors into its analysis if it is to reach a fair assessment as to whether price control would give rise to net efficiency gains.

3.3 The Commission did not address the central question

In summary, the general approach adopted by the Commission of using an efficiency test is both consistent with the Commerce Act and conceptually sound—the Commission should recommend price control only if price control would create a net efficiency benefit.

However, by not adopting a consistent comparative institutional analysis, or a with and without price control comparison, the Commission risks making significant errors of judgement. In particular, the Commission has not addressed the central question as to whether price control would result in efficiency gains relative to the status quo. Instead, the Commission simply assumes that price control would eliminate 50% of any inefficiencies it estimates from comparing the status quo relative to a theoretical ideal. This assumption is not supported by evidence or argument.

Nor is it sufficient for the Commission to analyse historical results in order to determine whether price control would lead to better outcomes in the future. To recommend price control, the Commission must come to a view that price control would change the incentives, information, or capabilities of decision-makers such that future outcomes would be more efficient than in the absence of price control. The Commission does not present such an analysis in its report.

Finally, the Commission's approach does not appear to recognise that it is required to make decisions on the basis of uncertain information.

4 The Commission's efficiency estimates

This section considers the method by which the Commission makes its specific estimates. In line with the Draft Report, this part of the report comments separately on the Commission's estimates of allocative, productive, and dynamic efficiency.

4.1 Allocative inefficiency

4.1.1 The Commission's cost-benefit analysis

Allocative inefficiency occurs when customers fail to purchase goods and services they value more highly than it costs to supply them. This means that trades are not taking place even though the social benefits of trade exceed the social costs of trade.⁴ Allocative inefficiency can also occur when customers purchase goods and services that they value less than the cost of supply.

⁴ As is standard for this type of analysis, we ignore externalities that drive a wedge between private and social costs and benefits.

The approach used by the Commission to estimate the allocative efficiency effects of price control is explained in Annex 1. Critically, the Commission assumes a single unit price for the service under the status quo and price control. This assumption ignores the implications of different price structures on allocative efficiency and means that the Commission's estimates of the potential for allocative efficiency gains will be overstated.

4.1.2 Why price structure is important for estimating allocative efficiency

Allocative efficiency requires that *each customer* pay a price equal to the marginal costs of supplying *the last unit they purchase*. However, in industries where production is characterised by high fixed costs, as it is for airport services, strict marginal cost pricing would not allow an airport to recover its total costs.⁵ To at least break even, an airport would need to charge above marginal costs.

The Commission recognises that its assumed single unit price must be above marginal cost to allow airports to recover efficient costs. It estimates a benchmark price at a level that allows the airport to earn a return on capital equal to the Commission's estimate of the airport's WACC. Any amount earned above this level is assumed by the Commission to contribute to allocative inefficiency (the contribution depends upon the shape of the demand curve). The Commission's approach would estimate the *maximum* potential allocative efficiency gains available in theory, assuming the airport must charge all customers a single, simple price. It does not approximate the actual allocative efficiency gains which price control might try to achieve.

The Commission's approach overstates available allocative efficiency gains because its assumption of a single, simple price, does not reflect reality - the Commission discusses the efficiency characteristics of current charging structures but does not incorporate that analysis into its efficiency estimates. Nor is it reasonable to assume that an unregulated airport would set a single, simple price. The profit maximising strategy for an airport (in a world of perfect information) would be to set a variable charge equal to marginal cost, and charge each customer a fixed charge just fractionally less than the total value that the customer placed on the service. In this way, a monopolist would maximise its profits, without changing consumption behaviour or giving rise to allocative inefficiency.

In reality, an airport will not have the information to price discriminate perfectly. The existing regulatory regime, and accepted international practice, place further constraints on feasible charging structures. Within these constraints, however, a for-profit airport can be expected to set a pricing structure that minimises allocative efficiency. By ignoring these incentives, the Commission's assumption on a single, simple price overstates the allocative inefficiencies that arise under the status quo.

⁵ Most firms face to some degree fixed and common costs of production. This is not a problem in textbook examples of firms participating in "perfectly competitive" markets because such firms are able to operate at output levels where marginal costs equal average costs.

4.1.3 *Realities of price control ignored*

The second bias introduced by the Commission's approach is its assumption that the price structure would remain unchanged with the introduction of price control. This assumption is improbable. Price regulation is almost always based on average cost pricing.⁶ Regulation also generally prohibits price discrimination. Incorporating into the analysis the price structures likely to emerge under price control may mean that price control *reduces* allocative efficiency relative to the status quo. The Commission does not address these issues, but simply assumes that price control can achieve 50% of the available efficiency gains.

4.1.4 *Estimating marginal costs*

A further difficulty with the approach adopted by the Commission is its assumption that marginal costs are zero. This assumption favours price control because any reduction in prices is assumed to bring prices closer to allocative efficient levels, and raises both empirical and theoretical issues.

The empirical issue is whether an airport suffers congestion with its current infrastructure. The Draft Report notes that airfield services are generally not congested, although some congestion occurs during adverse weather conditions. This conclusion seems too simplistic. For example, if the number of international flights arriving in Wellington were spread evenly over the day, the number of gates maintained by WIAL could be reduced significantly. Similarly, more frequent flights by smaller planes (carrying in total the same number of passengers) increases the demand for gates.

It is reasonable to presume that any output expansion that may be induced by price control (the Commission's assumed efficiency gain) is distributed through the day and night in much the same pattern as currently occurs. If this is the case then the airport may need to expand some of its facilities to handle more aircraft traffic during adverse weather conditions, or provide additional gate facilities, and these costs should be taken into account in the Commission's cost-benefit analysis.

At a theoretical level, even if an airport suffered no current congestion, it is erroneous to treat long run marginal cost as zero for airports operating in a growing market. In a growing market an airport will need to expand its capital infrastructure at some date in the future. If price control expands output in current and subsequent periods then capital expansion plans may have to be brought forward in time.

4.2 **Productive inefficiency**

4.2.1 *Determinants of productive inefficiency*

Productive inefficiency occurs when firms fail to produce output, of a given quality, at least possible cost. This occurs when firms use too many inputs to produce each unit of output, or employ the wrong mix of inputs. It can also occur when output quality is degraded because of over zealous cost-reduction.

⁶ David Ehrhardt, Practical Experience with Price Cap Regulation, Report for the New Zealand Treasury.

The governance of a firm, exercised by shareholders, is the primary driver of productive efficiency. Shareholders, with rights to the value of the firm after all other claims on the firm have been met (often referred to as the residual claimant), are the parties most directly affected by changes in productivity, and therefore the parties with the strongest incentives and ability (through the Board elected by them) to drive productivity improvements. The corporatisation and partial privatisation of WIAL for instance, resulted in aeronautical expenses per passenger falling from \$3.22 in 1992 to \$2.32 in 2000.

In its analysis of productive efficiency, the Commission does not explain how price control might affect the firm's incentives with respect to cost reduction. It merely assumes that price control can improve productive efficiency, and for the purpose of illustration, the Commission assumes that the efficiency gains equal 1% of operating costs excluding depreciation. These assumptions are without foundation. Commission states that it "has no evidence that productive inefficiency exists, and if they do how significant they might be" (page 195).

In all probability, price control would reduce productive efficiency by changing the incentives faced by the firm. While it is possible that price control may put pressure on the firm to reduce costs in order to meet a given profit target, it would at best be only a short-term stimulant. Over time, since price control tends to set prices on the basis of the firm's costs, the firm is likely to have weaker incentives to reduce their costs as the rewards from doing so are diminished.

The Commission's conclusion that price control could achieve productive efficiency gains implies that regulators would be better able to assess achievable efficiency levels than airport owners, and that airport owners are not able to design incentive structures which would maximise profits (that is, minimise costs). This result is implausible, and price control is more likely to reduce productive efficiency than improve it.

The conceptual difficulty with the Commission approach can be illustrated by applying its approach to WIAL. The Commission estimates WIAL is currently earning a rate of return 33% below its cost of capital. If the Commission believes that low profits pressure airport owners and managers to make better operational decisions, then it should conclude that price control would bring higher profits for WIAL, worsening its productive efficiency!

4.3 Investment and dynamic inefficiency

Under the heading of dynamic efficiency, the Draft Report focuses predominantly on whether airports invest in the right amount and mix of assets. We refer to these issues as investment efficiency because, in our view, they are not issues of dynamic efficiency.⁷ Section 4.4 discusses what we consider to be dynamic inefficiency.

⁷ We view investment and capital stock decisions are just another aspect of productive efficiency. Nevertheless we discuss them under the heading of dynamic inefficiency to align with the Draft Report, but use the words "investment efficiency" rather than dynamic efficiency.

4.3.1 *Determinants of investment inefficiency*

The extent to which firms pursue investment efficiency depends upon the incentives for airport owners and managers to make the right investment and divestment decisions. Capital markets play a particularly important role, because they have incentives to remove owners that make consistently poor investment decisions.

Firms possessing market power, however, have perverse incentives to under invest in infrastructure facilities (e.g. runways, aprons) *if they are unable to price discriminate*. Restricting capacity increases the frequency with which airport facilities are congested, for which peak pricing brings in large “chunks” of revenue. But importantly, non-linear pricing works to restore efficient investment incentives because the firm is already charging high prices for infra marginal output. And in any case, perverse investment incentives do not arise for WIAL because it does not charge peak prices.

The Commission estimates investment inefficiency by searching WIAL’s balance sheet for assets that are not “used or useful.” It identifies such assets for AIAL, but not for WIAL or CIAL.

4.3.2 *Critique of the Commission’s approach*

The finding of zero investment inefficiency for WIAL biases the numerical results in favour of price control, because price control may be harmful to investment efficiency. Moreover, the approach taken by the Commission is flawed because it is a methodology suitable for policy implementation rather than policy advice.

Policy advice versus policy implementation

The Commission plays two roles in regard to price control: it advises the Government on whether price control should be introduced, and it implements price control. The Draft Report fails to recognise that each role requires fundamentally different methodologies, and has biased the cost-benefit analysis in favour of price control.

The implementation role would require the Commission to act as an imperfect surrogate for competitive market disciplines. It is appropriate, in this role, for the Commission to optimise-out bad investment decisions (provided appropriate risk premiums are built into the Commission’s calculation of WACC and depreciation reflects expected economic lifetimes of assets).

The policy advisor role, however, involves the Commission identifying *potential* efficiency benefits of price control. For investment efficiency it is incentive effects that matter, not ex post evaluations of the efficiency of current asset holdings. For policy-making, it is crucial to resist judging with hindsight the efficiency of decisions that others have had to make ex ante.

This is particularly the case for investments in long-life assets, such as those for airports. Beyond the immediate future demand levels and patterns are highly uncertain, and technology and regulatory environments can change greatly. All firms are prone to making errors of judgement about the pay-offs from investment, regardless of whether they operate in competitive markets.

The cost-benefit analysis needs to estimate “excessive inefficiencies” – that is, inefficiencies occurring over and above an average level of inefficiency associated with normal competitive markets. The Commission might then argue that price controls partially eliminate excessive inefficiencies by putting owners and managers under greater pressure (e.g. from lower profits) to cut costs (although as argued above, it seems unlikely that price control would enhance incentives to control costs).

More generally, the Draft Report should make explicit how it believes price control alters incentives for airport owners and managers to invest efficiently. The analysis should explain why the Commission believes regulatory authorities are likely to be better than private capital markets at uncovering and preventing inefficiency. The Commission’s argument should be supported by evidence or at least a catalogue of “before and after” cases. From that evidence the Commission could infer what efficiency gains or losses might be possible if price control were applied to airports.

For reasons outlined above, we believe a more complete analysis by the Commission would conclude that price control would likely lower investment efficiency. This is because price control may muddy accountability for investment decisions, and weaken incentives for WIAL and the airlines to engage constructively to identify appropriate investments and divestments. In our view the airlines and airport owners are better placed than the Commission to identify efficient investment opportunities and monitor service quality.

4.4 Innovation and dynamic inefficiency

4.4.1 Determinants of dynamic inefficiency

Dynamic efficiency refers to the speed with which more efficient production and trading techniques are adopted. Firms may do this through their own innovations, or by adopting the latest technology or ideas implemented by others in the business (e.g. other airports). New ideas are often embodied in new investment, but this is not always the case, such as for organisational innovations.⁸

An important feature of dynamic efficiency is the compounding effect it has on productive efficiency. As a result, small differences in rates of innovation accumulate, over several decades, into large differences in productive efficiency.

Consider, for example, an industry experiencing innovations that allow 1% more traffic per year for the same input cost. After 10 years, traffic flows have increased by 10.5%. Suppose now that the rate of innovation increases such that traffic flow increases by 1.5% per year for the same input cost. In this case traffic flows expand by 16% after 10 years. These differences become more dramatic the longer the time period. For example, the corresponding results for 30 years are 35% and 56%, respectively. Such productivity growth lowers airport costs, which in the long-term flow through to benefit end-consumers via lower airfare prices.

In no industry does innovation occur at a steady rate, and it is easy to identify one industry or another as unlikely to experience significant technical advances.

⁸ Likewise, not all investment replaces old technology with new technology, which is why investment efficiency is not the same as dynamic efficiency.

Innovation often occurs in completely unexpected areas, but it is also true that economic theory predicts innovations to occur where there is the prospect of earning high profits. Markets characterised by weak competitive pressures and high profits are obvious candidates for entry if innovations make low-cost entry feasible.

Another important feature of dynamic efficiency is that incentives to innovate are different from investment incentives. Firms with market power can face perverse investment incentives, but this is not the case for incentives to innovate. Whether private owners face efficient incentives to innovate depends on the type of innovation.⁹

4.4.2 *The Commission does not consider the implications of price control for innovation*

The Commission does not consider dynamic efficiency driven by innovation. The Draft Report simply assumes that airfield services are an unlikely candidate for innovation and so attaches zero weight to any effect price control might have on it. We are unaware of any argument or evidence that suggests price control would foster innovation, but there are good reasons for concluding that price control may dull incentives for innovation (because for instance it may set returns based on average performance and thereby penalise successful innovators). By ignoring the potential detriments of price control to innovation, the Commission's approach seems likely to bias the numerical results in favour of price control.

4.5 **Concluding comments on the Commission's efficiency analysis**

The Commission has prepared a fairly rudimentary numerical analysis of the efficiency effects of price control. Our analysis indicates that each type of efficiency calculation appears to be biased in favour of price control. The most significant biases are in regard to:

- The assumption of a single, simple price, which removes from the Commission's analysis the prospect that price control could prevent airports from adopting more efficient pricing structures.
- The absence of any evidence or argument to support the Commission's estimate that price control would result in productivity gains of 0.5% of operating costs, excluding depreciation. Reasoned argument would lead to a conclusion that price control is more likely to reduce productive efficiency, when compared to the status quo.
- A lack of consideration by the Commission for the incentive effects of price control on innovation and dynamic efficiency.

Correcting the cost-benefit analysis for these issues would likely present a very different picture of the efficiency effects of price control.

⁹ See chapters 6 and 7 of Barro and Sala-i-Martin (1995).

5 Estimates of the direct costs of price control

In contrast to its estimates of the efficiency consequences of price control, the Commission has adopted a conceptually sound approach to estimating the direct costs of price control. The Commission compares the direct costs of price control with the direct costs of regulation without price control. However, the Commission does not consider all direct costs of price control; it only considers the direct incremental costs. A correct estimate of the direct costs would encompass the direct incremental costs, plus the opportunity costs of the resources devoted to administering and complying with price control.

The opportunity costs to society from price control include the loss of value which management of the firm might otherwise have created if scarce management time had not been devoted to attending to the regulator's needs. These costs can be considerable (especially in a well run firm) and are likely to significantly exceed the direct incremental costs of management time etc.

The regulator's actions also incur opportunity costs. These costs include the gains to society that may have arisen from the next best use of the Commission's time. Through attributing a zero value to its opportunity cost, the Commission implies that it could not have put the time it devoted to investigating WIAL to good use in any of its other activities—this result seems unlikely given the pressure on the Commission's resources from its current workload. The Commission's work has also been funded by taxes, and the 'opportunity cost' of the tax revenue, including the deadweight loss, should be incorporated into the analysis in the usual way. The Commission's approach to estimating direct costs implicitly assumes that raising tax revenue is costless.

Annex One Commission's approach to determining allocative efficiency

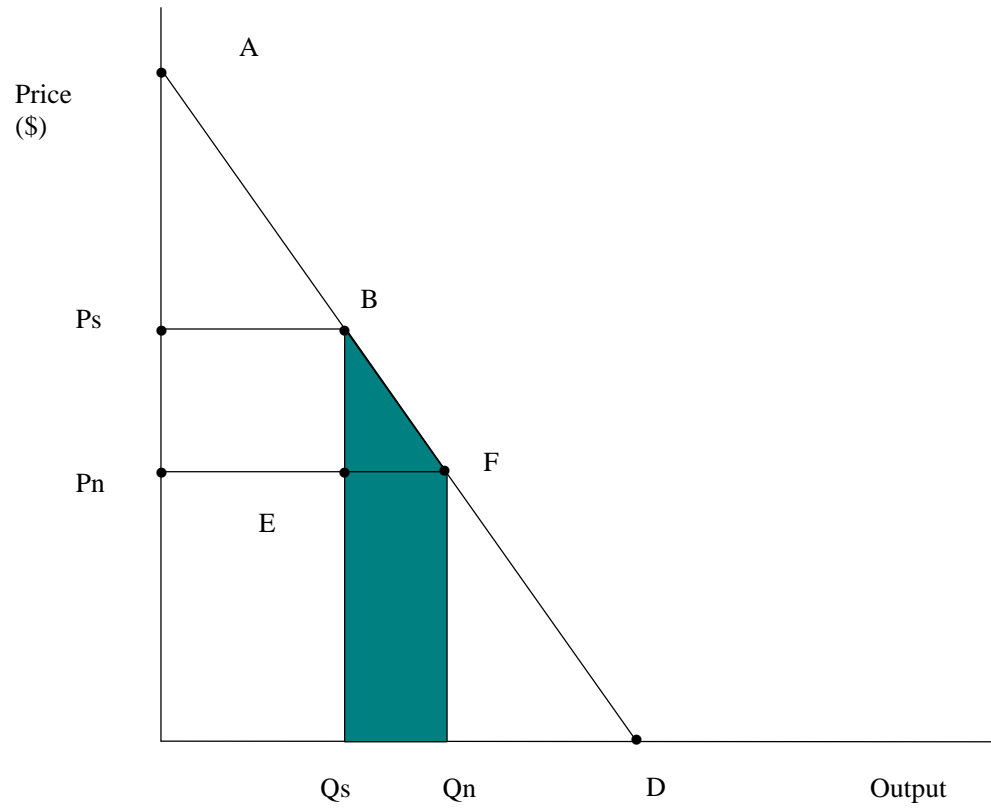
The approach used by the Commission to calculate the allocative efficiency effects of price control is illustrated in Figure 1 below.

In this example, the demand schedule for airfield services is the line AD, and marginal costs are assumed to be zero. The Commission makes the simplifying assumption that each airport charges a single price for airfield services, calculated as the average of all airfield prices charged by the airport. The status quo price is denoted P_s and the efficient price is P_n . The quantity of airfield services in the status quo and efficient price scenarios are denoted Q_s and Q_n , respectively.

The efficient price is set at a level that allows the airport to earn a return on capital equal to the Commission's estimate of the airport's WACC. For airports that earn a return greater than their WACC, the efficient price is lower than the status quo price, as shown in Figure 1. (Note that this is not the case of WIAL.) In these cases price control is assumed to increase demand from Q_s to Q_n , making airport customers better off in two ways:

- They would pay lower prices on services that they would have purchased anyway, the value of which is represented by area P_nP_sBE . These gains are a transfer from the airport to its customers, and so do not increase allocative efficiency.
- They would purchase additional services, the value of which is represented by the shaded area, Q_sBFQ_n . This area represents the maximum potential allocative efficiency gains from price control.

The Commission assumes that it is not fully effective at imposing price control. Sometimes it will set prices too low, and other times too high. To account for these indirect costs, the Commission assumes that price control captures 50% of the shaded area in Figure 1.



MC = 0

Figure 1: Commission's approach to estimating allocative inefficiency