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Closing loopholes

CORRECTING PERVERSE OUTCOMES FROM REGULATORY DECISIONS

When regulators set price controls, design markets and otherwise change the rules of the business game, most of the debate is about intentions – what should the rules achieve? However, the best intentions may be garbled in translation into regulation. Occasionally, apparently sensible rules create perverse incentives, or even loopholes that regulated companies can exploit at their customers' expense. Such unintended consequences need to be corrected quickly, before decisions take effect. When Frontier Economics alerted an airline client to just such a danger in the Irish aviation regulator's decision on airport charges, an appeal led quickly to a revised decision.

The three largest Irish airports – Dublin, Cork and Shannon – are run by the state-owned airport operator, Aer Rianta, and regulated by the Commission for Aviation Regulation (CAR). The CAR sets charges to airlines after periodic price control reviews. The price review carried out in 2001 was the first of its kind, after the Aviation Regulation Act (2001) set up the CAR and established the new legal framework for regulation.

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The Irish state airline Aer Lingus is strongly affected by the CAR's decisions, since it is the largest user of each of the three airports and therefore pays more airport charges than anyone else. Frontier advised Aer Lingus throughout the price control review.

The CAR had to reach a view on several issues of great significance for the final level of prices – such as the cost of capital, efficiency targets for cost reductions, the valuation of past investments at the airports and the investment programme for the future. Even when it has reached conclusions on these issues, however, like any regulator it has then to settle a long list of details, and take decisions about how to implement the price control.

THE INTENTION

The CAR adopted a variant of the approach to setting a price cap that originated in the UK as "RPI-X". Under such a regime, the time path of prices is fixed in advance (at a price review) for a period of some years (typically five). Prices are allowed to rise each year in line with general inflation (measured by some acceptable index, which in the UK's case was the Retail Price Index), less some percentage (X) reflecting expected efficiency improvements. Typically, X is a positive number, so prices must fall in real terms. In the Irish case, the chosen indicator was the Consumer Price Index, so the price cap is described as CPI-X.

There may be other elements in the price control mechanism, intended to allow for uncontrollable influences on prices. For most regulated businesses, there needs to be a term reflecting increases in customer numbers or volumes sold, for example (typically, costs and prices are assumed not to increase one-for-one).

CPI-X price caps clearly provide an incentive to the regulated company to reduce costs, since prices are unaffected by what is actually happening to costs, at least until the next price review. Cost savings therefore feed straight through to the bottom line. At price reviews, a typical approach is to set the price cap so that the company will make a rate of return on its assets equal to its cost of capital if it performs as the regulator expects. Thus, the regulator's financial projections will typically show the "allowed revenue" that it is believed would enable the firm to make a return equal to the cost of capital over the period.

The theory is that higher returns should result only from cost savings greater than those anticipated by the regulator. In practice, things are more complex. Regulators are getting interested in providing stronger incentives for cost savings and in incentives for quality improvement. These could result in price controls that do not assume that "normal" cost performance results in a return equal to the cost of capital[1].

THE LOOPHOLE

In August 2001, the CAR published a decision document setting out the details of the price control formulae. In reviewing this document on behalf of Aer Lingus, Frontier discovered what appeared to be a loophole in the formulae. We considered it a loophole because:

- the drafting of the formula appeared to allow Aer Rianta to increase revenue, and thus make returns above the cost of capital without making unexpected cost savings; and
- there was no explicit discussion of the actions that might enable Aer Rianta to achieve this outcome, suggesting that it was an unintentional consequence of the way the formula was drafted.

In effect, the formula allowed a "game" to be played, resulting in gains for Aer Rianta that we did not believe the CAR had intended.

The game related to charges for cargo flights. Airport charges cover both passenger and cargo services. However, the costs to the airports of the two activities differ. We believed that the regulatory formulae were intended to allow Aer Rianta some flexibility to decide the relative charges to airlines for passengers and cargo, while imposing some constraints on this flexibility. The effect of the formulae was that:

- **in year 1,** the average of the charges for passengers and cargo of should be no more than an average charge set by the regulator;
- **from year 2 onwards,** the passenger charge should be no more than CPI-X times the previous year's charge;
- **from year 1 onwards,** the charge for cargo should be no more than IR£10 (€12.74) per tonne, adjusted year-on-year by CPI-X.

The intention, as the regulator subsequently made clear, was to protect cargo operators from being penalised in favour of passenger operators. It appears that the regulator was aware that the airport authority had already applied for a cargo charge of IR£10, and wanted to make sure it went no higher. In the event, the regulator created a set of price caps with a potentially perverse incentive.

Rules that seemed entirely sensible would allow a "game" to be played. The lower the cargo charge in year 1, the higher could be the passenger charge in year 1 and subsequently. However, the cargo charge in year 1 has no effect on cargo charges from year 2 onwards.

If the cargo charge was set very low in year 1, and the passenger charge high, then Aer Rianta should make its allowed revenue from passenger charges alone. The CPI-X formula should then let it continue to make its allowed revenue from year 2 onwards, on passenger charges alone. However, it can then put the cargo charge up to IR£10, adjusted by CPI-X. Consequently, it can increase its revenue from year 1 to year 2, and maintain this higher revenue in all subsequent years.

Assuming the regulator set prices in year 1 to cover Aer Rianta's expected costs in year 1, then presumably the combined revenue from cargo and passengers from year 2 onwards would be higher than the company's expected costs. Even without making unanticipated cost savings, therefore, Aer Rianta could make returns higher than the cost of capital, as long as it set cargo charges very low in year 1, and subsequently raised them.

When we had alerted Aer Lingus to this apparent loophole, the airline – which objected to a number of aspects of the CAR's decision – included this in its appeal. Meanwhile, following publication of the CAR's decision, Aer Rianta informed its customers that cargo charges for the next financial year would be set at zero.

THE APPEAL

Aer Lingus and Frontier made an oral representation to an Appeals Panel, at which this and other objections were discussed. Its decision[2] stated that:

> The Panel considers that the application of the regulatory formula to cargo and non-cargo should be applied consistently throughout the period of the determination. The Commission combined cargo and non-cargo in one price cap in the year 2001/02 but separated them from year 2002/03 onwards. It is the Panel's view that they should either be separated throughout or combined throughout the period of the determination.

The Panel therefore upheld this aspect of Aer Lingus's appeal and the CAR was asked to reconsider. The regulator was not obliged to revise its determination along the lines suggested. However, CAR issued a revised determination[3] in February 2002, acknowledging that:

> … because the per passenger income from the entire set of cargo air services is subtracted from the 2001/02 cap to give the cap on non-cargo air services for the regulatory year 2002/03, the incentive for the airport authority is to charge nothing for services supplied in connection with the transportation by air of cargo during the regulatory year 2001/02. In doing this, the airport authority would maximize the starting value allowed for revenue per passenger in respect of non-cargo air services …

And the CAR made it clear that:

> The Commission did not intend non-cargo air services to finance costs incurred in the provision of services supplied in connection with the transportation by air of cargo, with the airport authority gaining additional revenues when it introduced a charge for such services in the second regulatory year.

The CAR therefore made a revised determination, stating that:

> The Commission has varied its Original Determination such that the per passenger revenue from charges in respect of cargo air services (as defined therein) is no longer subtracted from the maximum average revenue yield to give the cap on charges in respect of non-cargo air services (as defined therein) in the second and subsequent regulatory years.

UNINTENDED CONSEQUENCES?

It should fairly be said that at no stage has Aer Rianta accepted that it was attempting to game the price control by setting a low charge. Rather, Aer Rianta told the Appeals Panel that it was "anxious to promote the development of cargo operations from its three airports, therefore it has taken the marketing decision not to implement a separate cargo tonnage charge for 2001/2002….". However, the mechanism certainly gave Aer Rianta the incentive to price in this way. Furthermore, as noted above, the regulator was working on the understanding that Aer Rianta had previously applied for permission to set a cargo charge at IR£10/tonne – a decision that seems to have been reversed after the first draft of the price control was published.

The three regulated airports handle about 200,000 tonnes of cargo per year. Ignoring the CPI-X adjustment for simplicity, the original set of price caps would have permitted Aer Rianta to charge €12.74 per tonne on cargo from year 2, bringing in €2.5 million revenue a year in excess of what the regulator assumed would cover its expected costs. This additional revenue would, in effect, have been provided by all airlines, but by Aer Lingus more than any other.

Such mistakes easily happen, so it would not be fair to criticise the regulator. Setting a price control is a hugely complex technical exercise, rendered harder by being conducted in an atmosphere of intense lobbying. The CAR, in its first year of existence, carried out a lot of technical analysis and produced all consultation papers and decisions by deadline, a record rarely matched by any regulator in the UK. It is certainly not the only regulator to have had to revise its own rules. For example, in the early days of the new electricity market in the UK, the market operator discovered that a plus sign in a key equation should really be a minus.

This is, in part, why regulators are allowed discretion and appeals processes exist. The CAR deserves some credit for its response. Indeed the regulator itself alerted the Appeals Panel to deficiencies in some aspects of its price controls, in effect using the appeals process as an opportunity to make final edits to its decision. In our view, this story shows the regulatory system in Ireland working just as it should. It also shows the importance of thinking about incentives, which – more than anything else – is what economists should bring to the game.

SOURCE	1. *See Frontier's previous regulatory bulletins Competing Monopolists (November 2000) and Are you being Served? (May 2002) for details of these developments.* 2. *http://www.aviationreg.ie/downloads/appealdecision.pdf* 3. *http://www.aviationreg.ie/downloads/cp22002.pdf*
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