Presentation to the Productivity Commission's public hearings into telecommunications competition regulation

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Introduction

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- Issues to be covered in the opening statement
  - The importance of getting the regime correct
    - Regulatory risk and its impact in an industry facing technological uncertainty
  - Pricing principles
    - Moving towards greater certainty through additional legislated pricing principles
  - Tendering for the universal service obligation
    - The practical concerns associated with the current model

Importance of getting the access regime right

Why all this matters?

- There is substantial uncertainty as to the future of access technologies, particularly in more marginal parts of the country
  - E.g, in determining the NUSC for 1997-98 the ACA concluded that the optimal CAN technology was satellite for 27% of USO customers, WLL for a further 14% and microwave for 9%
  - By 1999-00, the ACA determined that GSM had replaced WLL and microwave as the most economical terrestrial radio solution
- While there is an issue of appropriate timing for when these new technologies will be brought to market, under the current access regime the incentives to do so are slight as a result of artificially low access prices
  - For example, in setting PSTN access charges the ACCC estimated for 2000-01 that the line cost for all 1.2 million rural services, including USO services, would be $550 million.
  - For the same year, the ACA estimates that the CAN costs associated with providing service to some 493,862 USO services is $624 million.

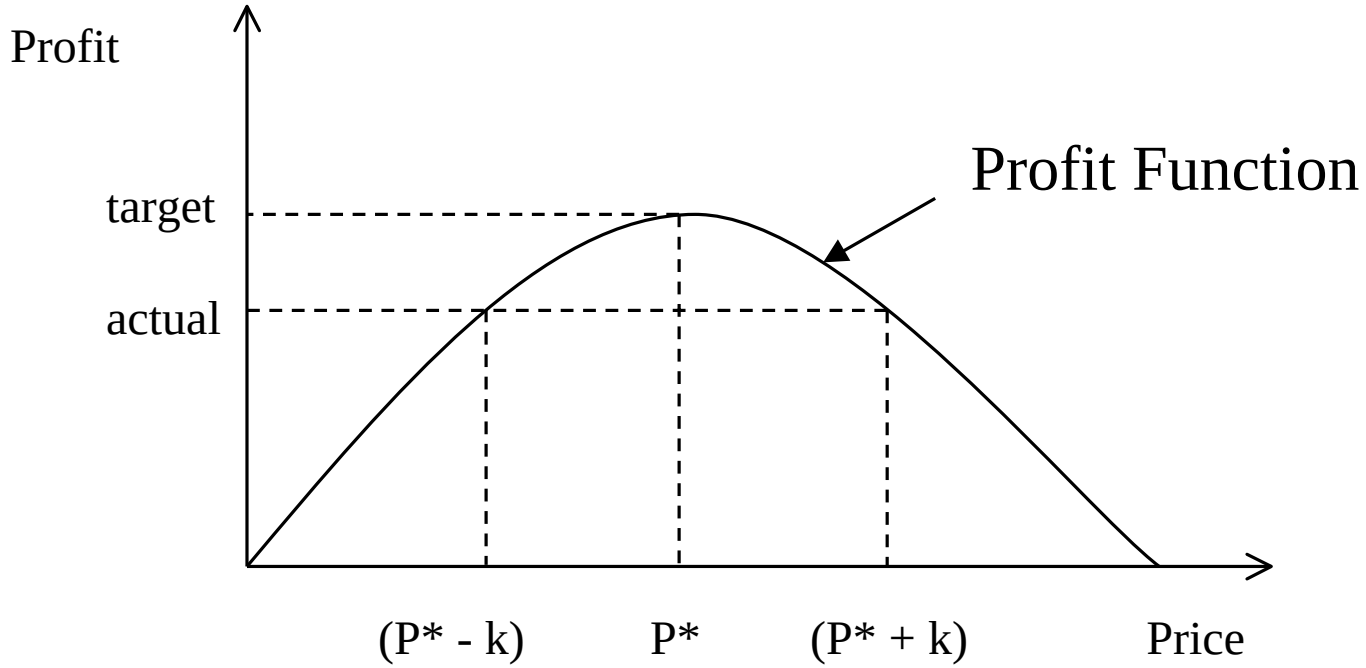
Regulatory risk

- Regulatory risk is that component of non-diversifiable risk attributable to the effect of regulation.
- Two polar cases:
  - Rules only with no discretion
    - Regulatory rules reduce firms ability to optimise against market volatility
  - Pure discretion with no rules
    - Additional uncertainty through unpredictability of constraints
- In practice, regulation results in a mix of these two effects.

Regulation restricts firm's flexibility

- Maximum of profit function generally unattainable
- Price and output outside firm's influence
  - Pricing mechanism can't be used to manage demand
  - Other output rationing methods also often forbidden
- Effect of regulation is to restrict firm to its profit function (maximum profit function not available)

Errors & the profit function



Logic of allowing for regulatory risk

- The forward looking cost of service depends on the costs facing a new investor.
- But capital costs depend on demand which depends (through price) on regulation.
- A serious attempt should therefore be made to quantify the impact of regulation on the cost of capital.
- Quantitative significance should vary across services and assets, but the qualitative effect of regulation must be to increase capital costs.

Methods for measuring regulatory risk

- Regulation is usually one-sided
  - Places a ceiling on earnings, but does not fully insure the firm
- Risk of downside is carried by the firm
  - This is efficient, since firm best able to manage that risk
- Problem is to value the cost of self-insurance
  - What would the premium be in an efficient insurance market?
- Option values offer the most attractive approach
  - Options are “one-sided” and can mimic regulatory risk
  - Real options associated with new investment can be closely associated with the “current cost of efficient entrant” rule.

Access pricing and investment

- It has been argued that:
  - Delaying investment is less costly than advancing it, because
  - Delay is reversible (i.e. can invest later), hence
  - Should err on the side of low access prices rather than high
- This argument is seriously flawed
  - It conflates two separate decisions
    - A regime designed to under-price access is not readily reversible. The ability of firms to invest later is irrelevant if the returns to investment will not change.
  - It assumes that private costs of delay are identical to social costs
    - The social costs of under-investment are very high. Recent evidence (Mercury Energy, California) suggests these social costs greatly exceed the benefit firms gain by delaying investment
  - It violates dynamic and allocative efficiency
    - Setting price=cost is allocatively efficient but may have dynamic costs
    - Setting price<cost will definitely violate both of these criteria

Price controls

- It has been suggested that removal of the price-caps on basic access and local calls would improve investment incentives in local services
- We agree that reform of the price controls would improve incentives for efficient investment
- However, such reform would require substantial changes to line rental charges

	Current charge	CBD	Metro	Prov	Rural	Average
Line rental ($ per year)	$149	$204	$396	$358	$521	$394
Local calls (cents per call)	22	6	14	19	38	17

•The political reality of such reform must be considered

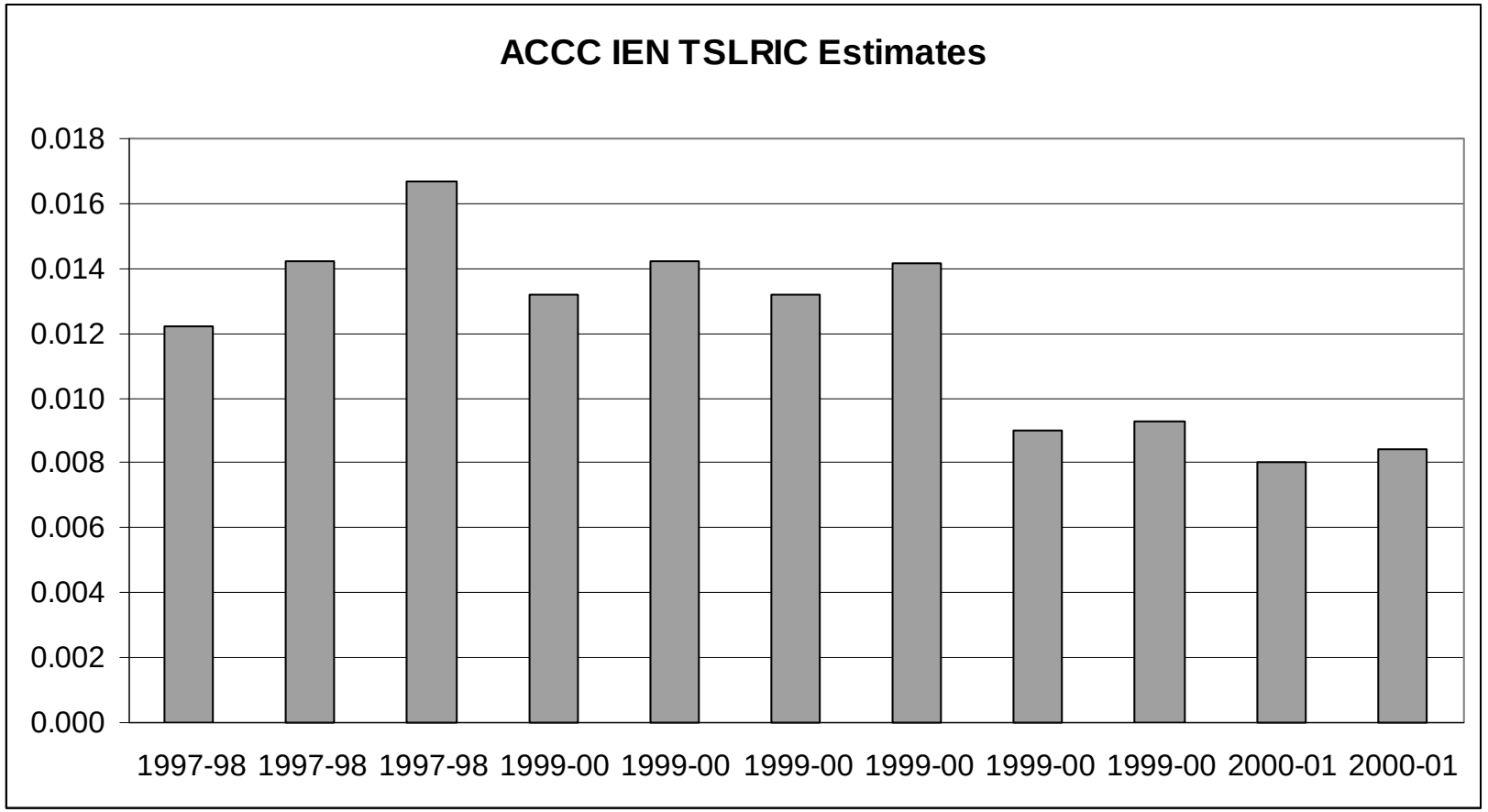
•In addition, such reforms would not resolve many of the access pricing issues associated with the calculation of costs for PSTN lines, PSTN call conveyance and LCS

Pricing principles

Why the current system is inadequate

- The current legislative criteria to which the ACCC is required to have regard when assessing or setting access prices provide the regulator with wide discretion in setting prices:
  - There is no requirement that the ACCC set access prices to allow the access provider to recover efficiently incurred costs, including the costs it must incur in meeting legislated service obligations
  - There is no requirement for consistent approaches or application of pricing methodologies
  - There is no guidance on the weight that should be placed on the different legislative criteria
- The result being that:
  - Access prices can prevent firms from recovering efficiently incurred costs and hence can be inconsistent with economic efficiency, including efficient investment
  - There is significant uncertainty over access prices going forward
- Therefore, there is scope to improve the current regime by introducing legislated pricing principles

PSTN TSLRIC Estimates



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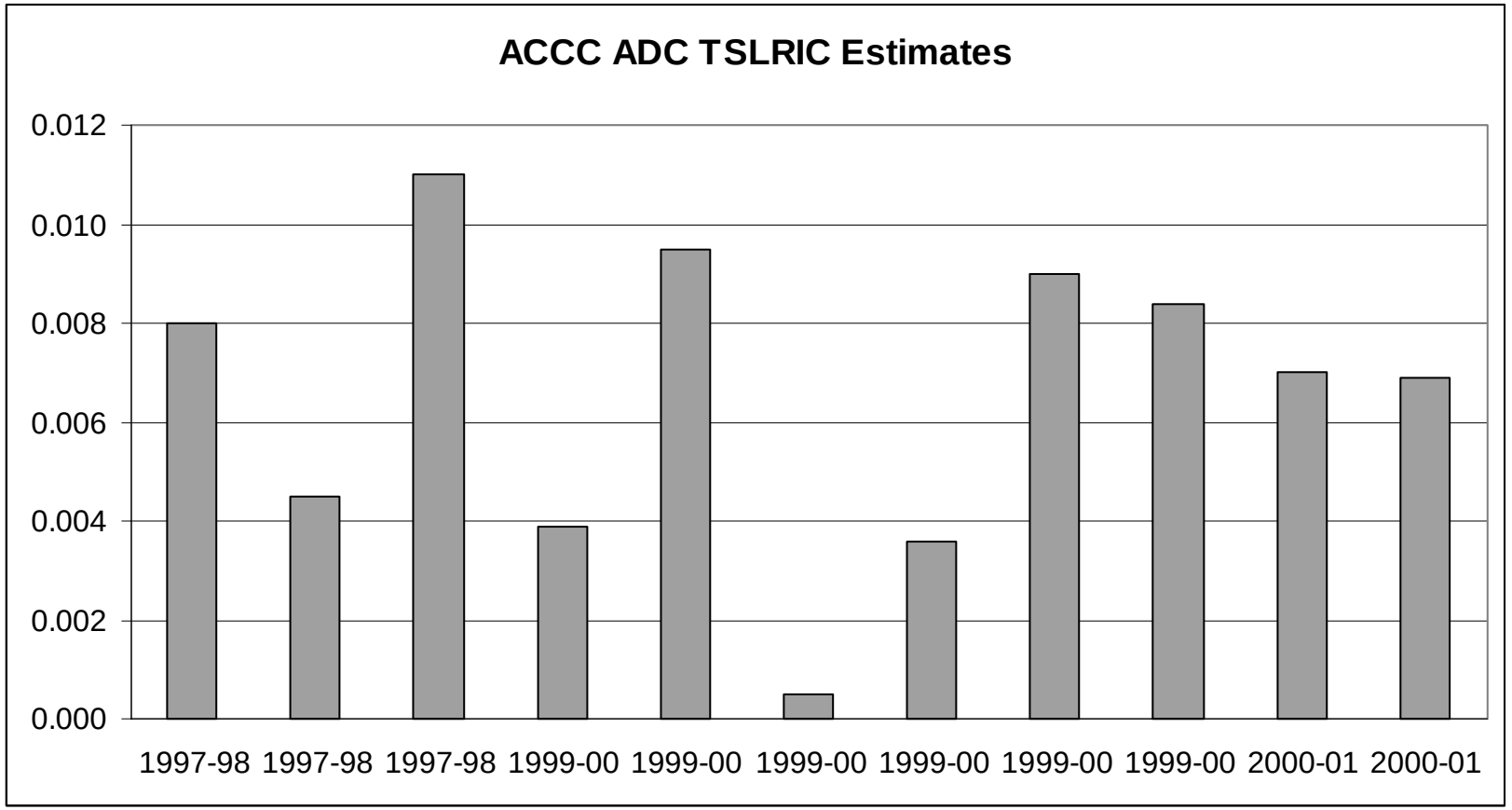

The need for pricing principles

- Welcome Commission's idea of new pricing principles
- However, to reduce uncertainty and ensure economic efficiency and productivity improvement the principles need to be extended
- Suggest the Act require:
  - Financial capital maintenance for investments in regulated assets that were prudent at the time were made
  - Compensation of regulatory risk
  - Recognition of social obligations
- But will also need other constraints on regulatory discretion such as merits review

Financial capital maintenance

- FCM is only a policy issue in respect of regulated assets because the owners of these assets face asymmetric risks
- FCM is not full insurance, it only protects against regulatory asset stranding not market risk
- Prudence differs from optimisation in that the question is “was the investment optimal at the time it was made” not “is the investment optimal now”

Financial capital maintenance examples

- In the context of the PSTN access pricing, the ACCC would have been required
  - to consider the actual capital investments that Telstra has made, rather than the costs a new operator would incur if it were to roll-out its network today
  - to consider the efficient operating costs associated with Telstra's actual network rather than the optimised operating costs of new assets provided by CWO to NERA
  - to allocate trench costs on the arbitrary basis of the number of parties using the trench, rather they would have been required to consider the revenue that Telstra can actually secure from third parties for leasing of trench space
  - not to ignore the provisioning costs that Telstra actually incurs in meeting its CSGs
- The ACCC would not have been able to maintain the inconsistency it has between PSTN pricing and LCS pricing
  - In the context of PSTN pricing the ACCC allocates an average of 21.97 cents of wholesale PSTN costs (TSRLIC) to each local call
  - In the context of LCS pricing the ACCC sets prices on the basis of a retail-minus approach, resulting in a wholesale local call price of 17.44 cents

Compensation for regulatory risk

- Efficient costs are those of a new investor
  - So natural to look at micro-theory of investment
- Regulation creates “one-sided” (i.e. asymmetric) risk
  - Acts as a ceiling rather than a floor
- Can design a real option that mimics this risk
  - Options are also “one-sided” variables
- Combine demand data with options theory
  - Growth rate & volatility of demand estimates
  - Real option model from Dixit & Pindyck (1994)
  - Estimate mark-up factor for WACC
  - Our estimates suggest increasing WACC by 10 to 14% for PSTN

Recognition of social obligations

- Instead of assuming that Telstra's cost of supplying service in rural areas declines continuously on the basis of declines in replacement cost and on the basis of new technologies, the ACA would be required to consider the actual efficient costs that Telstra incurs in providing services in rural areas

ACA assumptions on annual decline in equipment costs due to technological improvements (tech factors)

	1998-99	**1999-00**
Satellite ground stations, satellite modems, fibre	5%	5%
Switches, satellite network management, radio	7%	7%
Satellite customer equipment	8%	8%
GSM power supply, radio antennas, feeders and rack	12%	12%

US O tendering

Potential advantages of USO tendering

- USO tendering has a number of *potential* advantages over the current system of costing the USO:
  - Forces carriers to reveal the true costs of supplying services in uneconomic areas
  - Provides for some competitive disciplines in these areas through periodic competition for the market
  - Encourages efficient investment in uneconomic areas
- Unfortunately, the pilot programs currently being introduced are structured such that none of these benefits are likely to be achieved

Cost revelation

- USO tendering should operate as a reverse auction
  - Bidders will reveal the minimum subsidy required to provide standard telephony services in uneconomic areas at the required price and grade of service, avoiding the need for complex optimised cost models and the associated uncertainty
  - In doing so, they will reveal the ideal technologies for delivering services to rural and regional Australia
- However, in the proposed pilots
  - The subsidy is essentially fixed on the basis of ACA cost modelling, with some form of administrative selection process used to determine which carriers get the subsidy
  - This effectively undermines the cost revelation aspect of the process

Increased competition

- Tendering can be either for
  - Exclusive access to a subsidy for a defined period of time or
  - Portable subsidies (the model being considered in the pilot areas)
- Portable subsidies
  - Benefits: product market competition
  - Problems: cherry-picking, high admin costs, scale and scope economies may be undermined
- The exclusive model
  - Benefits: simple to implement, less problem with cherry-picking, competition for the market, scope and scale economies can be realised
  - Problems: difficulties in determining optimal areas and contract lengths (but this can also be a problem for portable subsidies)

Incumbent infrastructure

The table shows the outcomes when a competitor is the USP and uses Telstra ULL, interconnection or resale to supply service. For comparison, outcomes when Telstra is the USP are also shown.

	Telstra	*Arbitrage Co. (ULL)*	*Telstra*	*Arbitrage Co. (i/c)*	*Telstra*	*Arbitrage Co. (resale &i/c)*		Telstra as USP
retail revenue		$1,065		$1,065		$1,065		$1,065
wholesale revenue	$1,070		$1,052		$764	-		
USO receipts		$535		$535		$535		$535
network costs	$1,600		$1,600		$1,600	-		$1,600
wholesale payments		$1,070		$1,052		$764		
USO payment	$428	$107.00	$428	$107	$428	$107		$428
competitive outcome	-$958	$423	-$976	$441	-$1,264	$729		-$428

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