



GasNet – Response to Allen Consulting Group Report

September 2002

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1 Introduction

The Australian Competition and Consumer Commission engaged Allen Consulting Group (ACG) to review beta estimates for gas transmission companies in conjunction with its review of GasNet's access arrangements (the ACG Report). The purpose of this report is to respond to several of the comments contained in the ACG report.

This report is structured as follows:

- Section 2 considers general issues associated with the estimation of beta for regulatory purposes;
- Section 3 responds to the specific comments raised in the ACG report; and
- Section 4 offers concluding comments.

2 General issues in the estimation of beta

It is important to recognise the role of the assessment of the cost of capital in a regulatory review, which is namely to remunerate past investment and to provide an indication of the rate at which new investment will be remunerated.

Significantly compounding the difficulties in any assessment of the beta for a gas transmission entity in Australia is the limited number of listed Australian companies from which a sample population can be obtained to make such an assessment. Beta estimates have large standard errors complicating the assessment and increasing the risk of error in the event that reliance is placed on a “point” or mean estimate.

The issue of the potential for regulatory error is significant on account of its asymmetric consequences, a point noted by the Productivity Commission.

The possible disincentives for investment in essential infrastructure services are the main concern. In essence, third party access over the longer term is only possible if there is investment to make these services available on a continuing basis. Such investment may be threatened if inappropriate provision of access, or regulated terms and conditions of access, lead to insufficient returns for facility owners.

While the denial or monopoly pricing of access also impose costs on the community (see above), they do not threaten the continued availability of the essential services concerned. Thus, over the longer term, the costs of inappropriate intervention in this area are likely to be greater than the costs of not intervening when action is warranted. The substantial information and other difficulties that confront regulators in establishing access terms and conditions, make this asymmetry in the benefits and costs of access regulation even more important in a policy context.¹

¹ Productivity Commission, “Review of the National Access Regime. Position Paper”, March 2001, pp xviii-xix.

3 Response to issues raised in the ACG report

3.1 Sources of data

ACG argue (page 45) that the four sources of data NECG identified (that is, regulatory decisions, individual companies from recent regulatory decisions, AGSM, and NECG estimates based on share price data) were really one source of information. To the extent this data is ultimately all sourced from ASX listed companies, we would agree with the ACG, although the point of the comment is not clear.

However, it should also be noted that regulators routinely review each other's assessment of beta, a practice ACG appears to endorse (which, evidently, is relevant to the comments made in relation to Envestra below). Furthermore, to the extent regulator's decisions have been informed by particular analysis (such as their own analysis of beta estimates, as would appear to be the case for the QCA's assessment), such analysis also becomes relevant to the current exercise. Finally, as ACG acknowledges, different beta estimation methodologies can yield different results. However, where this occurs, it is considered important to assess the reason for the difference rather than simply ignoring it as ACG appears to suggest.

Indeed, ACG in their own analysis place significant reliance on regulatory decisions as a separate source of information. For example, ACG state (at page 43):

Accordingly, while it inevitably is a matter for the Commission to decide how it exercises its discretion, it is recommended that, in the near term, it adopt a conservative approach, and not assume a proxy equity beta that is too far from the range of previous, relevant regulatory decisions.

3.2 Time period

We agree that betas move over time and that the most recent information should be used in beta estimation. However, there is an important implication that should be drawn from the observed volatility in beta estimates that is not mentioned in the ACG Report. This volatility in beta estimation over time clearly exposes regulated companies to a risk – a risk that a regulated business cannot hedge against. This fact, together with the dispersion in beta

estimation and the asymmetrical consequences of regulatory error, again serves to highlight the importance of exercising caution in the estimation of beta.

3.3 Comments on the AGSM database

The ACG report (at page 46) states:

The use of a widely available and frequently-updated beta estimation service also permits the same beta estimation methodology to be used across decisions and industries, and thus reduce the uncertainty associated with the regulatory process. As discussed in section 3.2, what look like minor methodological changes can have profound results on empirical beta estimates. By committing to use a credible, independent source for beta estimates, the likelihood that regulators or regulated entities may seek (or appear to seek) to cherry-pick the methodological choices to produce their desired result should be reduced, and thus reduce the uncertainty and controversy associated with price reviews.

Having made this statement, it is rather curious therefore that ACG place great weight on a range of other beta estimates that are determined by a range of methodologies that differ materially from the AGSM approach.

In other words, having made much of the merits of applying the same beta estimation methodology, ACG apply no less than four different methodologies in arriving at their beta estimate. The ACG Report states (at page 24):

For the purpose of this report, the Ibbotson service has been used to obtain beta estimates for the US firms, the LBS service for the UK companies, and the AGSM service for the Australian firms. These services are considered to offer the most robust estimation methodologies, are widely used for each of those markets, and have the advantage of being relatively easy to access. However, there is no easily accessible beta estimation service for the Canadian companies. Accordingly, the Bloomberg service has been employed these firms (SIC) , with the betas estimated against the default Canadian market portfolio (described above) and with a monthly sampling interval over five years of observations.

3.4 Systematic risk

ACG question (at page 46) what is meant by the statement "systematic risk is largely country specific" and go on to suggest that we might have meant that "the use of beta estimates for foreign entities requires an assumption that asset prices are determined with reference to an internationally diversified portfolio of assets".

However, the fundamental point we were making is self evident - the co-variance between a security's return and that of the market in which it is listed is largely determined by the economy in which that market is located. It is confusing why ACG has read what it has into the statement - it is agreed that US companies should be measured against US markets - precisely because systematic risk is largely country or economy specific.

3.5 Envestra's exclusion from sample

ACG criticises the exclusion of Envestra from the sample. It is interesting to note at the time of our report, the QCA's decision on Envestra (that is, in that instance, the very company that was the subject of the regulatory investigation) was excluded from its sample on account of the factors mentioned in our report. The following is an extract from the relevant QCA Report:²

² Queensland Competition Authority (2001) Final Decision Proposed Access Arrangements of Proposed Access Arrangements for Gas Distribution Networks: Allgas Energy Limited and Envestra Limited.

Industry	Asset beta range (based on adjusted equity betas)
Gas distribution (listed companies)	0.46 – 0.47 ¹
Electricity generation (listed companies)	0.88 – 1.22
Electricity distribution (listed companies)	0.46
Gas distribution (regulatory decisions)	0.40 – 0.60
Electricity distribution (regulatory decisions)	0.35 – 0.50

1. The actual range for Australian gas distributors is 0.09 to 0.47. However, for Envestra (asset beta of 0.09) the equity beta was estimated using only 46 observations, and the company had a leverage ratio of 0.8328. This makes Envestra's leverage ratio and therefore its asset beta an outlier relative to other distributors, which have a leverage ratio in the range of 0.1736 to 0.2988. It was therefore excluded.

Over time, the factors that caused the QCA to regard Envestra as an outlier may pass as new information emerges – although in our view Envestra's highly unusual capital structure still presents a significant risk of biasing beta estimation and considerable caution is therefore required in terms of including it as part of any industry average. Moreover, it is clear that the QCA decision provides a regulatory precedent to support the contentions that were made in the NECG report.

3.6 Adjustments to beta

ACG asserts that NECG overstated the level of regulatory endorsement of the Blume adjustment approach (at page 50-51 of the report). Nevertheless, ACG recognise that at the time the report was made, the regulators who explicitly considered the Blume adjustment had explicitly incorporated it into their decision-making. To the extent that there has been a large measure of consistency amongst regulators in relation to beta estimation, it is thought likely that other regulatory bodies have implicitly had regard to the Blume adjustment in their regulatory decision making.

It is acknowledged that since the report was made, the ESC has ceased to use the Blume adjustment. Nevertheless, in our view, great care must be taken with the estimation of beta. As the ACG report indicates, the average standard deviation of betas using AGSM data is over 0.3. This highlights the imprecision associated with estimating beta and in the context of a regulatory exercise, with asymmetrical implications from error, it seems highly dangerous to ignore the dispersion around a beta estimate.

The Blume adjustment provides one means of adjusting betas that is in fact performed by Bloomberg, as well as other well respected providers of beta information. NECG acknowledges that other approaches may also be used to explicitly recognise this issue. The approach that was adopted in our report simply reflected regulatory practice to the extent that it had been articulated by regulatory bodies. Moreover, the mean reversion sometimes attributed to such adjustments can be merely a manifestation in the inherent measurement error being corrected over time.³

3.7 Asymmetric risk

ACG comment on our remarks concerning the fact that CAPM does not address asymmetric risk but suggest (at pages 51-54) "the relevant matter is not how a particular asset may differ from the CAPM assumptions, but how it differs from other assets." However, this is relevant only insofar as these effects are captured in a beta estimate - it would appear that ACG acknowledge this limitation but do not suggest any adjustment that is necessary on account of these factors not being incorporated into the beta. In other words, in considering asymmetric risk it is irrelevant whether one firm departs from CAPM more or less than another - any departure renders CAPM an under specified model in this respect.

3.8 Relative risk of beta estimates

ACG commented on references made in a World Bank publication: Alexander, Mayer and Weeds (1996) "Regulatory Structure and Risk and Infrastructure Firms - An International Comparison", World Bank Policy Research Working Paper 1698. In our report we merely referred to regulatory practice elsewhere in noting that IPART and the QCA had cited that report in support of gas distributors having a higher asset beta than electricity distributors for high and intermediate-powered incentive environments. Again, this is relevant to the factors other regulators have had regard to in reaching their determinations. Table 6.4 of the Alexander, Mayer and Weeds paper contains the following:

³ We would be happy to elaborate further on this point if it assists the ACCC.

Average asset beta values by regulatory regime and sector

Incentives	Electricity	Gas	Energy	Water	Telecoms
High-powered	0.57	0.84	-	0.67	0.77
Intermediate	0.41	0.57	0.64	0.46	0.70
Low-powered	0.35	0.20	0.25	0.29	0.47

Source: Alexander, Mayer and Weeds (1996) "Regulatory Structure and Risk and Infrastructure Firms - An International Comparison", World Bank Policy Research Working Paper 1698, table 6.4

ACG comment:

it is considered that the results presented in World Bank working paper suggest that it is more likely that gas distributors have lower systematic risk than electricity distributors. First, the simple average of all of the asset beta estimates provided in the report for electricity distribution (34 observations) was 0.45, which exceeded the simple average of the asset beta estimates for the gas distributors of 0.33 (18 observations). Secondly, in the only country where multiple gas and electricity distributors can be compared – the US – the average asset beta for electricity distribution of 0.30 (9 observations) exceeded that for gas distribution of 0.20 (12 observations).

However, to reach this conclusion, ACG includes electricity and gas companies subject to rate of return regulation – rather than the high and intermediate incentive schemes considered by IPART and the QCA. Accordingly, ACG's manipulation of the data in this instance is disingenuous.

3.9 Competition and systematic risk

ACG argue that competition does not affect the level of systematic risk borne by GasNet and states (at page 55) "any gas sold to Victorian households will still need to travel through its

system, irrespective of the identity of the retailer and source of the gas." However, this is simply not the case. For example, the services provided by the Western Transmission System (WTS) will be capable of being replicated by the proposed SEA Gas pipeline which will pass a number of towns currently supplied by the WTS. The increased risks associated with this development will have implications for GasNet's diversifiable and undiversifiable risk.

4 Concluding comment

It is disappointing that in a report that highlights the imprecision associated with beta estimation that no reference whatsoever is made of the asymmetric consequences of error. The estimation of beta is not an arcane intellectual exercise with an end in itself, but rather, in this case, an attempt (albeit with a substantial and unfortunately unavoidable risk of error) to provide a basis for the assessment of risk to inform regulatory decision making.

To the extent that we allow ourselves to be seduced by the illusion of rigour in beta estimation we expose the community to the grave risk of materially and adversely affecting welfare by undermining the basis upon which infrastructure providers can reasonably commit to investment.