

# **Consumer Reference Group**

## **Review of submissions on international equity beta and market risk premium issues raised in the ERA 2022 gas rate of return Focussed Consultation Discussion Paper**

**This is a supplementary paper that should be read in conjunction with the CRG submission dated 7 May 2022**

**23 May 2022**

CRG Members

John Fallon – Chair  
Director, Economic Insights Pty Ltd

Graham Hansen  
Senior Policy Officer, Western Australian Council of Social Service

Paul Keay  
Consultant, energyXL

Adrienne LaBombard, Manager of Industry Competitiveness at The Chamber of Minerals and Energy of Western Australia

## CONTENTS

<b>Acronyms</b>	<b>1</b>
<b>1 Introduction</b>	<b>2</b>
<b>2 International Comparators for the Equity Beta</b>	<b>3</b>
2.1 <i>Australian Gas Infrastructure Group (AGIG) – Dampier Bunbury Pipeline</i>	3
2.1.1 <i>AGIG view</i>	3
2.1.2 <i>CRG view</i>	4
2.2 <i>ATCO Gas Australia Pty Ltd – Mid-West and South-West Gas Distribution Systems</i>	5
2.2.1 <i>ATCO view</i>	5
2.2.2 <i>CRG view</i>	6
2.3 <i>Goldfields Gas Transmission – Goldfields Gas Pipeline</i>	7
2.3.1 <i>GGT view</i>	7
2.3.2 <i>CRG view</i>	8
<b>3 Market Risk Premium</b>	<b>11</b>
3.1 <i>Australian Gas Infrastructure Group (AGIG) – Dampier Bunbury Pipeline</i>	11
3.1.1 <i>AGIG view</i>	11
3.1.2 <i>CRG VIEW</i>	12
3.2 <i>ATCO Gas Australia Pty Ltd – Mid-West and South-West Gas Distribution Systems</i>	14
3.2.1 <i>ATCO view</i>	14
3.2.2 <i>CRG VIEW</i>	14
3.3 <i>Goldfields Gas Transmission – Goldfields Gas Pipeline</i>	15
3.3.1 <i>GGT VIEW</i>	15
3.3.2 <i>CRG VIEW</i>	15
<b>5 References</b>	<b>17</b>

## ACRONYMS

AER	Australian Energy Regulator
AER CRG	Australian Energy Regulator Consumer Reference Group
AGIG	Australian Gas Infrastructure Group
ATCO	ATCO Gas Australia Pty Ltd
CAPM	Capital Asset Pricing Model
CMEWA	Chamber of Minerals and Energy Western Australia
CEG	Competition Economists Group
CRG	Consumer Reference Group
DGM	Dividend Growth Model
ENA	Energy Networks Australia
ERA	Economic Regulation Authority
GGT	Goldfields Gas Transmission
MRP	Market Risk Premium
NGO	National Gas Objective
RORI	Rate of Return Instrument
RFR	Risk Free Rate
TMR	Total Market Return

# 1 INTRODUCTION

The Economic Regulation Authority (ERA) is currently undertaking a review to help determine the rate of return it will allow for the gas pipelines it regulates in Western Australia for the four-year period starting in January 2023.

As part of the consultation process for the review, the ERA has established a Consumer Reference Group (CRG) to provide direct and ongoing feedback to the ERA on rate of return issues that represents broad consumer perspectives.

The ERA has published a paper setting out the engagement process and also a technical discussion paper on the 2022 gas instrument review. Submissions have been made on the ERA discussion paper including a submission by the CRG. The submissions are available [here](#)

Field Cod

The ERA hosted a Focussed Consultation, on 27 April 2022, on two key matters: (1) the scope for expanding the comparator set for estimating the equity beta to include international energy businesses; and (2) how the ERA should best combine inputs when estimating the market risk premium and whether the market risk premium should be fixed for the term of the 2022 gas instrument. The issue of using an arithmetic or geometric mean for the market risk premium was also discussed at the Focussed Consultation. Subsequent to the Focussed Consultations written submissions were provided to the ERA by AGIG, ATCO, GGT and the CRA.

This is a supplementary paper that provides the CRG's views on key issues raised in the industry submissions that were not directly addressed in the CRG submission of 7 May 2022 or where additional explanation is considered important. Section 2 covers equity beta issues and Section 3 covers market risk premium issues.

## 2 INTERNATIONAL COMPARATORS FOR THE EQUITY BETA

### 2.1 AUSTRALIAN GAS INFRASTRUCTURE GROUP (AGIG) – DAMPIER BUNBURY PIPELINE

#### 2.1.1 AGIG view

Key points made in the AGIG 2022 submission, following the Focussed Consultation, that were not directly addressed in the CRG submission are as follows:

1. “Some stakeholders have noted that the ERA’s filtering mechanism does not control for the degree to which the firms in question have regulated income and that this may impact the degree to which they are comparable to Australian regulated firms. Although regulatory risk is not a systematic risk (see below), we agree that this is an important dimension to the “like with like” comparison. To this end, we would suggest the CEG filter for regulated income, described in the APGA submission as an additional filter the ERA might consider.”<sup>1</sup>

And

“One example of this is the call by the ERA’s CRG and South 32 to adjust returns for the supposed low risk of regulated firms which occurs, supposedly, by virtue of their regulatory status.<sup>7</sup> Not only is this supposed low level of risk not established via any robust evidence,<sup>8</sup> but regulatory risk is not a systematic risk, because it is not a factor pervasive through the economy. To the extent that the degree of regulatory exposure is considered important, we believe it is better given effect by using a filter like that proposed by CEG to control for regulatory revenues which we mention above, than by some arbitrary adjustment to beta.”<sup>2</sup>

2. In relation to international equity betas: “Aside from the obvious adjustment to ensure that leverage is at the level the ERA believes is appropriate, we believe that no other adjustment should be made. We agree with the ERA’s view in the consultation session that choosing the right set of filters is a better approach than making arbitrary adjustments to beta, because it is much more transparent, and one can see the consequences of making a particular filtering choice very easily.”<sup>3</sup>
3. A recent paper by (sic) suggests that it is appropriate for regulators to use a WACC estimate above the mean under most circumstances because of the consequences on consumer surplus (including the value of lost load) of producing an estimate which turns out to be too low. This paper extends an earlier literature which formed the basis by which the New Zealand Commerce Commission formalised its approach of choosing the 67th percentile of its beta estimate, rather than its mean.

---

<sup>1</sup> AGIG 2022, pp. 1-2.

<sup>2</sup> AGIG 2022, p. 3.

<sup>3</sup> AGIG 2022, p. 3.

## 2.1.2 CRG view

1. In relation to (1) above, in response, the point is that regulation of a monopoly entity influences the equity beta to the extent that it ensures greater assurance of revenue recovery sufficient to recover allowed costs. It is not a matter of classifying the characteristic of regulation as an economy-wide systematic risk because it is well accepted that various operational and economic characteristics influence equity betas that are unique to the particular firm or investment.

For example, Lally (2000, 2004) considers that key factors affecting a firm's beta include: the nature of the firm's output (and in particular the income elasticity of demand for the firm's product), the pricing structure, the duration of the firm's contracts, its degree of monopoly power, the form of regulation (affecting the degree of protection for cost and demand changes), operating leverage, the firm's weight in the market, and the firm's real options.<sup>4</sup>

The point is that the form of regulation and particular country circumstances ( i.e. the extent to which an expected rate of return is likely to be realised) can have implications for the equity beta so that it is not as simple a matter as defining a quantitative threshold for regulatory revenues or assets and applying that threshold in foreign markets to the Australian situation.

Furthermore, even with a relatively high threshold for regulation, the betas for other activities for a firm that entail higher systematic risk could still bias the estimated beta for the comparators.

The CRG maintains the view it is not necessary nor appropriate to extend the sample to include international firms. We note that while some stakeholders have submitted that an international sample should be used, they have agreed this would require a range of differences to be controlled for and this could be done through the use of filters applied to the international sample set. Further, some stakeholders have put forward that the use of a filter is preferable to the use of regulatory discretion in relation to the international sample.

While the CRG agree, where appropriate, the use of a filter may be preferable from a transparency perspective, the critical issue is where such a filter can be relied on. In relation to use of an international sample it is the CRG's view that the use of filters will not address the fundamental issues with utilising an international sample as discussed in the CRG submission of 7 May 2022.<sup>5</sup>

2. In relation to (2) above, the CRG submission noted with respect to leverage:<sup>6</sup>

---

<sup>4</sup> Lally 2004, pp. 80-84 n and 2000, pp. 27-29.

<sup>5</sup> CRG 2022, pp. 5-12.

<sup>6</sup> CRG 2022, pp. 8-9.

“In addition, it is reasonable to question the adjustments for leverage as differing leverage across countries may suggest fundamental differences in the nature or businesses and/or the environment they operate in.<sup>7</sup>

Thus the leverage adjustment can be questioned where leverage and financial markets are materially different and materially different leverage can be indicative of other material differences that might impact on the equity beta.

Also the description of adjustments based on qualitative information as arbitrary can be interpreted as implying that the use of regulatory discretion has no meaningful restrictions or is not well supported by other relevant information. It is more reasonable to assume that regulatory discretion would normally be applied after careful consideration of qualitative evidence, for example, by examination of the extent to which the regulatory arrangements provide significant assurance that specified regulatory returns are reasonable and most likely to be realised.

And, as noted, although a filter may be transparent, the CRG’s view is that is only helpful to the extent it allows for materially different economic and regulatory circumstances.

3. In relation to (3) above, choosing a WACC estimate materially above the mean in order to ensure sufficient incentive to invest and continue to supply is not likely to be necessary and would be contrary to the long term interests of consumers if there is no evidence that efficient investment has been deterred.

## **2.2 ATCO GAS AUSTRALIA PTY LTD – MID-WEST AND SOUTH-WEST GAS DISTRIBUTION SYSTEMS**

### **2.2.1 ATCO view**

ATCO undertook a review of the international firms selected by the ERA based on the criteria outlined by ATCO in its February 2022 submission to the ERA’s December 2021 discussion paper. The result is listed at Appendix A with reasons for amendments to the ERA’s selected firms noted.

Key points made in the ATCO 2022 submission, following the Focussed Consultation, that were not directly addressed in the CRG submission are as follows:

1. The only adjustment made should be to re-lever beta to be consistent with the RORI benchmark gearing using the commonly used Brealey-Myers levering method.<sup>8</sup>
2. The screening criteria recommended by ATCO include: predominantly engaged in energy transmission or distribution as identified by some threshold specification for the proportion of regulated revenue, cash flow or asset value; companies with sufficient liquidity for their share transactions; eliminate companies whose stock returns may have been affected by M&A transactions; and stock price information available for the entire observation period.<sup>9</sup>

---

<sup>7</sup> Partington and Satchell 2018, p. 24.

<sup>8</sup> ATCO 2022, p. 2.

<sup>9</sup> ATCO 2022, p. 3.

Applying these criteria:

- There was only one Australian firm in the sample (APA).
- One UK firm, two Canadian firms and 16 US firms were removed. Two Canadian firms, considered more appropriate, were added.

According to ATCO: “These results demonstrate the improved robustness of the estimate using a larger sample size and conversely the potential for error created by using a small sample size. This point is elaborated at question 5 where the method of combining beta estimates is discussed.”<sup>10</sup>

In response to question 5:

“The table highlights some relevant points.

- The larger variation in estimates are for countries with a small sample size due to varying views on the appropriateness of including individual companies within the sample for that country.
- The relative stability of estimates for countries with larger sample sizes.
- The relative stability of average estimates whether it be by “Full pooling” or “Country Pooling”

### **2.2.2 CRG view**

1. In relation to (1) above, this issue was also raised by the AGIG submission and the CRG response is provided in 2.1.2.
2. In relation to (2) above, the only detail provided in relation to “robustness of the estimate using a larger sample size” related to a table showing estimates for each country where the most obvious effect was that for a US sample, reduced from 55 to 39, the beta averages were the same or only slightly different while the reduction in the Australian sample from 4 to 1 and in the UK from 2 to 1 had noticeable effects. There was no information on confidence intervals or potential bias presented.

Furthermore it is understood that APA has a small minority of its revenue regulated yet it was included in the comparator set despite a regulated revenue threshold being one of the screening criteria (and evidence indicating its beta is considerably higher than domestic energy network comparators with majority regulated revenues)<sup>11</sup>.

In relation to the claim of: The relative stability of average estimates whether it be by “Full pooling” or “Country Pooling”, there are material differences in full pooling and

---

<sup>10</sup> ATCO 2022, p. 5.

<sup>11</sup> CRG 2022, pp. 11-12 and GGT 2022, p. 8.



country pooling averages. For example, for the ATCO amended sample the full pooling averages are 1.07 and 0.8 for the OLS and LAD average estimates respectively but 0.82 and 0.74 for the country pooled average estimates respectively.

Also, in relation to the screening criteria it is not necessary to insist that stock price information should be available for the entire observation period, particularly where a long period of data is available as additional data can improve the statistical precision of the estimate assuming the sample is representative of the true beta.

## **2.3 GOLDFIELDS GAS TRANSMISSION – GOLDFIELDS GAS PIPELINE**

### **2.3.1 GGT view**

Key points made in the GGT 2022 submission, following the Focussed Consultation, that were not directly addressed in the CRG submission are as follows:

1. GGT continues to note that there are too many issues that still need to be resolved in order to use the suggested international comparators for beta estimation and continues to support the sample of domestic comparators used for beta estimation in 2018.<sup>12</sup>

GGT expressed its concern as follows:

“GGT remains concerned that no consideration is being given to the question of whether any of the potential comparators - Australian or international - has a degree of risk similar to the degree of risk of the Goldfields Gas Pipeline in respect of the provision of pipeline services. The Goldfields Gas Pipeline has similar risk characteristics to other regulated assets which serve the mining sector in the Pilbara and, with a benchmark gearing of 55%, should have an equity beta of at least 0.8.<sup>13</sup>

...

More detailed assessments of the potential international comparators listed in Appendix 1 of the ERA's April 2022 Discussion Paper are required before those potential comparators can be considered as providing a sample for estimation of the beta of the benchmark efficient entity.”

However, should the ERA decide to proceed with the use of international comparators, the GGT noted the following.

Beta estimates for APA, Ausnet and Spark do not appear to be stable since 2013. CGT presented a figure, prepared by Frontier Economics, with rolling beta estimates for APA, Ausnet and Spark for the period December 2010 to after December 2020. The estimates were stable to December 2013 then rose considerably to December 2019

---

<sup>12</sup> GGT 2022, p. 2.

<sup>13</sup> GGT 2022, p. 2.

before declining materially to the end of the review period.<sup>14</sup> Given the instability for this sample and the number of Australian comparators being reduced to one GGT considers a pragmatic approach needs to be taken i.e.: “using data from a carefully selected international comparators - can provide a beta likely to measure the degree of systematic risk of the benchmark Australian gas pipeline service provider.”<sup>15</sup>

2. The beta for a comparator can be defined as the product of the correlation between the comparator and the market return and standard deviation of the comparator divided by the standard deviation of the market return. CEG analysis showed each of the components for beta for the international comparator sample were similar to the components for beta for the Australian comparators and according to GGT: “this indicates similarity between the economic determinants of the betas of the international comparators and the betas of the remaining Australian comparators.”<sup>16</sup>
3. “If the ERA uses the data from an appropriately selected sample of international comparators in beta estimation, that will be because, among other things, the international comparators have shares which are traded in equity markets which are, for practical purposes, comparable to the Australian equity market.”<sup>17</sup>
4. “GGT is of the view that no adjustments should be made to the estimates of the international equity betas.”<sup>18</sup>

### 2.3.2 CRG view

1. In relation to (1) above, the figure 1 referred to by GGT does indicate considerable variability in beta over the period since December 2013 but as explained in the CRG 2022 submission, referring to the AER estimates in Table 2 there is stability for the longest period data as indicated in the estimates for the 2018 review and 2021 update for each of: the whole comparator set, the same three firms as per the figure 1 referred to by GGT and the still listed (at the time) majority regulated firms.<sup>19</sup> This relative stability in beta for the longest period available was also noted by the AER.<sup>20</sup>
2. In relation to (2) above, even if it is the case that it is difficult demonstrate a material difference in the statistical components of the beta this does not amount to a statistical test of the differences between an Australian domestic beta and the international beta estimates and does not consider the economic importance of observed differences in mean estimates.

This issue was discussed in the CRG submission following the Focussed Consultation as follows:<sup>21</sup>

---

<sup>14</sup> GGT 2022., p.8.

<sup>15</sup> GGT 2022, p. 13.

<sup>16</sup> GGT 2022., pp.10-11.

<sup>17</sup> GGT 2022, p. 15.

<sup>18</sup> GGT 2022, p. 15.

<sup>19</sup> CRG 2022, p. 12.

<sup>20</sup> AER 2021, p. 103.

<sup>21</sup> CRG 2022, pp. 5-6.

“However, importantly, a finding of no formal statistical difference does not prove that domestic and foreign betas are the same based on the standard interpretation of hypothesis testing. In other words, even where one cannot confirm statistically that the mean of an international sample is different to the mean of the domestic sample this does not mean that one can accept there is no difference. This follows from formal hypothesis testing where failure to reject the null hypothesis does not allow the interpretation that the null hypothesis can be accepted. The correct interpretation, when the null hypothesis cannot be rejected, is that there is insufficient statistical evidence from the specific test to confirm a statistical difference. And the observed difference in the means could be consistent with prior theoretical evidence and be economically important.

...

As noted, in a situation where the null hypothesis of no statistical difference cannot be rejected with the formal statistical methodology it is appropriate to consider the economic impact of assuming there is a difference based on observed differences in average estimates and also fundamental *a priori* reasons that are likely to mean there is truly a difference.

The economic importance of adopting different equity betas is shown in terms of the impact on the after tax nominal WACC in Table 1. The after tax nominal WACC is calculated based on the ERA’s working parameters as per its December 2021 Discussion Paper and a forecast inflation rate of 2.4 per cent.<sup>22</sup> For example the difference between adopting an equity beta of 0.4 and 0.9 amounts to an impact on the after tax nominal WACC of 1.3 percentage points.”

**Table 1: Equity beta and after tax nominal WACC**

Equity beta	After tax nominal WACC %
0.3	3.5
0.4	3.8
0.5	4.1
0.7	4.6
0.9	5.1

Note: based on ERA working assumptions as per ERA 2021 with inflation forecast to be 2.4 per cent and market risk premium of 6.0.

Furthermore, similarity in statistical components of the beta estimate does not necessarily indicate similarity between the economic determinants of the beta of the international comparators and the betas of the remaining Australian comparators. The fundamental determinants include: the regulatory framework, the domestic economy, geography, business cycles, industry structure, and other factors, such as the degree of vertical integration and extent of involvement in different activities that are not regulated,

---

<sup>22</sup> ERA 2021.

3. In relation to (3) above, this is essentially a claim that the equity markets in the US, UK Canada and New Zealand are for practical purposes comparable to the Australian equity market but this is an empirical issue where the GGT proposition is not tested and it is well known that the share market compositions in the US and the UK are materially different to the Australian market.
4. In relation to (4) above, this issue was also raised by the AGIG and ATCO submissions and the CRG response is provided in 2.1.2.

## 3 MARKET RISK PREMIUM

### 3.1 AUSTRALIAN GAS INFRASTRUCTURE GROUP (AGIG) – DAMPIER BUNBURY PIPELINE

#### 3.1.1 AGIG view

Key points made in the AGIG 2022 submission, following the Focussed Consultation, that were not directly addressed in the CRG submission are as follows:

1. “We maintain our view that the relevant data points are the *arithmetic* historical mean and the DGM, with the geomean playing no role. Sapere, for the AER CRG show that the geometric mean only has a role to play if there is serial correlation in the sample set. Work undertaken by CEG suggests that there is not (see memorandum from CEG appended to this letter).”<sup>23</sup>
  - a. The CEG memorandum reports empirical findings as follows:<sup>24</sup>
    - “The MRP series exhibits evidence of autocorrelation (albeit weak evidence);
    - The TMR series does not have statistically significant evidence of autocorrelation;
    - The RFR series has strong statistically significant evidence of autocorrelation.”
  - b. The CEG conclusions are as follows:<sup>25</sup>

“Two implications follow our conclusion;

    - First, the evidence of autocorrelation in the TMR series is not sufficiently strong to justify giving material weight to the geometric average; and
    - Second, if, nonetheless, weight is to be given to the geometric average MRP it should be estimated by taking the difference between the geometric average of the two portfolio it is open to investors to invest in.”
2. Specify the method for determining the DGM in the RoRI. We believe this method should be the Frontier method, noting that this is essentially the AER’s existing 3-stage DGM with the long run growth rate  $g$  determined using Frontier’s approach.<sup>26</sup>

---

<sup>23</sup> AGIG 2022, p. 5.

<sup>24</sup> CEG 2022, p. 1.

<sup>25</sup> CEG 2022, p. 2.

<sup>26</sup> AGIG 2022, p. 5.

### 3.1.2 CRG VIEW

1. In relation to (1) above, the finding of limited serial correlation in total returns based on annual observations is not relevant if the holding period for investors is considerably longer than 1 year. Since with a longer holding period, the annual results are not realised in practice. Even without dividend re-investment it is reasonable to assume that it is unlikely that investors in the regulated entities typically liquidate their total investment capital each year and then re-invest the liquidated amount. It is more likely that they at least retain their principal plus any undistributed returns.

As noted in the CRG 2022 submission to the focussed consultation Partington and Satchell in their report to the AER for the allowed rate of return 2018 Guideline Review explained:<sup>27</sup>

“It is well established that the arithmetic average of annual returns will overestimate expected returns if the holding period is more than one year. The holding period of investors is likely to be more than one year. For example, in the expert evidence session it was suggested that some investors in the regulated businesses had investment horizons of 20 years. Given investor holding periods of more than one year it is appropriate for the AER to have regard to the geometric average for returns. It is also appropriate for the AER to consider return periods of more than one year.”

The issue of recognising a holding period longer than one year is also explained by Patterson as follows:<sup>28</sup>

“The CAPM is a single period model that estimates the return required by investors over some unspecified investment horizon. If, for instance, the relevant period is two years, the geometric mean of two successive one-year returns is the proper measure of the average return over the full period. However, for the purpose of determining the typical return in any two-year investment period, the arithmetic mean of returns in different two-year periods is the proper method to use.”

Similarly Boyle and Murray, in the Sapere report referred to by CEG, consider that:<sup>29</sup>

“The answer as to which of arithmetic or geometric averaging is better depends on the context in which the question is asked. If the objective is to assess performance over some historical period, then the geometric average is superior.”

Thus if the investment horizon is more likely to be 10 years, then a geometric return for a 10 year period would be relevant and not the arithmetic mean.

---

<sup>27</sup> Partington and Satchell 2018 in CRG 2022, p. 25.

<sup>28</sup> Patterson 1995, p. 109.

<sup>29</sup> Boyle and Murray 2022, p. 45.

There is also the issue of the convergence of the arithmetic mean to the geometric mean as Patterson notes that increases in the holding period will decrease mean returns asymptotically to the geometric mean.<sup>30</sup>

This proposition is also related to the issue of how the predictability of returns affects the relationship between the arithmetic and geometric mean returns. This issue was also discussed in the CRG 2022 submission to the focussed consultation.<sup>31</sup>

To recap: Wright, Mason and Miles note that if returns have a log normal distribution, which is commonly assumed, then the relationship between the arithmetic return and the geometric return is as follows:<sup>32</sup>

arithmetic return = geometric return plus half the variance of the log normal return.

Given the monopoly status of the regulated entities and the form of regulation that applies it is reasonable to recognise there is likely to be relatively low variance of returns to the regulated entities. As noted in the CRG 2022 submission<sup>33</sup> Campbell (2001b) and Robertson and Wright (2002) have pointed out, if there is predictability of returns, this can significantly lower long-horizon return variances, compared to the random returns benchmark. The point is that the stronger is the predictability of returns the more that the arithmetic mean will converge to the geometric mean and the CRG considers there is high predictability of the cash flows and hence likely returns to the regulated gas pipelines in Western Australia.

As a minor point, in considering the statistical results reported by CEG, and as reported in the CRG 2022 submission to the focussed consultation, Fama and French<sup>34</sup> in their US study find that while the one-year correlations are low, the five-year serial correlations are strongly negative for all size classes. This raises the issue of whether the same result for a five year period would be shown for the Australian market. But in any case, as explained above, the more important issue is establishing the relevant investment horizon.

As a final point, when calculating the geometric mean, the CEG proposition that it should be calculated as the difference in the geometric means for each of total market returns and the risk free rate seems reasonable based on the information provided.

2. In relation to (2) above, the use of the calibrated DGM needs to be clarified. This is discussed further in response to the ATCO submission in 3.2.2, point 2, below.

---

<sup>30</sup> Patterson 1995, p.110.

<sup>31</sup> CRG 2022, pp. 26-27.

<sup>32</sup> Wright, Mason and Miles 2003, p. 24.

<sup>33</sup> CRG 2022, pp. 26-27.

<sup>34</sup> Fama and French 1992 in CRG 2022, p. 27.

## 3.2 ATCO GAS AUSTRALIA PTY LTD – MID-WEST AND SOUTH-WEST GAS DISTRIBUTION SYSTEMS

### 3.2.1 ATCO view

Key points made in the ATCO 2022 submission, following the Focussed Consultation, that were not directly addressed in the CRG submission are as follows:

1. “ATCO considers that the calibrated DGM model proposed by Energy Networks Australia provides additional confidence in the DGM. Regardless of the form of DGM, ATCO considers that the ERA should not rely solely on a backwards-looking historical estimate of the MRP, and that combining this with a forward-looking estimate from a DGM<sup>35</sup> will do a much better job at ensuring the MRP reflects currently prevailing conditions in the market for equity funds.”
2. “As discussed at the ERA’s Consultation paper forum on April 27 with Frontier Economics, DGM estimates from, for example, the last 3 to six months would then be used to set the DGM used in the MRP estimation by the ERA. This would ensure that the estimate was not unduly affected by a spike in MRP estimates in a single month due to a stock market correction occurring in that month.”<sup>36</sup>
3. “ATCO’s caution with regard to the use of conditioning variables is reinforced by implications of assuming MRP is fixed over time.”<sup>37</sup>

### 3.2.2 CRG VIEW

1. In relation to (1) above, the CRG understands that the ERA does not rely “solely on a backwards-looking historical estimate of the MRP, but rather that the ERA places more reliance on the historic market risk premium relative to the dividend growth model and determines a final point estimate by using regulatory judgement including consideration of relevant conditioning variables. The CRG supports the continuation of this approach.
2. In relation to (2) above, the use of the calibrated DGM needs to be clarified.

One approach is to simply use the long term growth rate for the calibrated model for the full sample period to set a forward looking growth rate for the period after three years in the two stage approach. This still entails bias problems in preparing forecasts for the first three years.

Another approach, as describe in (2) above is to make use of the implied market risk premium averaged over the last 3 to 6 months, however, this approach deviates substantially from the calibration assumption of ensuring the average MRP in the calibrated model matches the specified historic MRP. It in effect uses the implied MRP for the last 3 to 6 months which is not necessarily most relevant for a forward looking MRP for the regulatory period. However, this information could be used along with the conditioning variables as per the ERA’s current approach.

---

<sup>35</sup> ATCO 2022, p.10.

<sup>36</sup> ATCO 2022, p.10.

<sup>37</sup> ATCO 2022, p.13.



3. In relation to (3) above, as per the response to (1), the ERA does not assume the MRP is fixed over time in making its decision about an appropriate MRP.

### **3.3 GOLDFIELDS GAS TRANSMISSION – GOLDFIELDS GAS PIPELINE**

#### **3.3.1 GGT VIEW**

1. A point estimate of the MRP can only, and should be made, in a mechanical or formulaic way, with no weight given to conditioning variables and equal weight to historic excess returns and an MRP estimated using the calibrated DGM.<sup>38</sup>
  - a. Regulatory discretion gives rise to the risk of arbitrariness in setting the allowed rate of return and: “An arbitrary return on equity would not provide the service provider with a reasonable opportunity to recover financing costs which are usually a major component of the costs of providing reference services.”<sup>39</sup>
2. Once the growth rate for dividends  $g^*$  has been determined in the calibrated DGM that model can be used to estimate a forward looking MRP.<sup>40</sup>
3. The calibrated DGM estimated an average MRP since the global financial crisis (after 2009) of around 9 per cent exceeding the MRP currently used in regulatory rate of return determination.<sup>41</sup>
4. Observations of negative excess returns should be removed from the data as they do not reflect the ex ante expectation of rational investors. GGT calculates that this would increase the arithmetic mean for the period 2011 to 2021 from 6.4 to 9.9 per cent.<sup>42</sup>

#### **3.3.2 CRG VIEW**

1. In relation to (1) above, as explained under 2.1.2, point (2), in relation to a similar characterisation, the depiction of regulatory discretion as arbitrary can be misleading in the sense of implying that the use of regulatory discretion has no meaningful restrictions or is not well supported by relevant information. It is more reasonable to assume that regulatory discretion would normally be applied after careful consideration of qualitative and quantitative evidence, for example, by examination of the extent to which the regulatory arrangements provide significant assurance that specified regulatory returns are reasonable and most likely to be realised.

Furthermore, the CRG is not aware of credible evidence that allowed rates of return have been set too low consistent with providing efficient investment incentives including for the period since 2018 when the binding nature of the rate of return instrument has applied.

---

<sup>38</sup> GGT 2022, p. 4.

<sup>39</sup> GGT 2022, p. 22.

<sup>40</sup> GGT 2022, P. 18.

<sup>41</sup> GGT 2022, p. 19.

<sup>42</sup> GGT 2022, pp. 19-20.

2. In relation to (2) above, the use of the calibrated DGM needs to be clarified as discussed in 3.2.2, point 2, above.
3. In relation to (3) above, the CRG considers that the use of an MRP of 9 per cent for a forward looking MRP is excessive when contrasted with regulatory precedents and private sector practice.
4. In relation to (4) above, it is true that the ex ante MRP must be positive in order to provide incentives for equity investment. However, this does not justify the removal of negative excess returns because investors also expect there to be variability in returns over time and for different investments. Furthermore, the use of a long term historically based MRP effectively precludes the adoption of a negative MRP.

## 5 REFERENCES

AER (2021), Overall rate of return, equity and debt omnibus, Rate of return Final working Paper, December

AGIG (2022), ERA approaches to beta, ERA focussed consultation session, power point presentation dated 26 April.

AGIG (2022), Letter dated 6 May 2022 containing responses to questions raised in ERG focussed consultation.

ATCO (2022), Attachment 1: ATCO Submission 2022 Rate of Return Instrument Focussed Consultation Paper, 9 May.

Boyle , G., and K. Murray (2022), Estimation of the market risk premium and its relationship to the risk free rate in the context of regulation of electricity and gas energy networks: A report to the Australian Energy Regulator Consumer Reference Group, Sapere Research Group, February 25.

Campbell, J., (2001b): “Why long horizons? A study of power against persistent alternatives,” *Journal of Empirical Finance*, 8, 459–491.

CEG (2022), Analysis of the autocorrelation of the market risk premium, memorandum to AGIG, 4 May.

GGT (2022), Submission responding to ERA focused consultation, 9 May.

CRG (2022), Review of international equity beta and market risk premium issues raised in the ERA 2022 gas rate of return Focussed Consultation Discussion Paper, 7 May.

Fama, E.F. and K.R. French (1992), The Cross-Section of Expected Returns, *Journal of Finance*, Vol 47, 427-466.

Lally, M., (2004). The Cost of Capital for Regulated Entities. Report prepared for the Queensland Competition Authority, February.

Lally, M., (2000). The Cost of Equity Capital and Its Estimation, McGraw-Hill Series in Advanced Finance, v.3, T. Brailsford and R. Faff (eds.). McGraw-Hill Book Company Australia Pty Limited: Roseville, New South Wales, Australia.

Partington, G., and S. Satchell (2018), Report to the AER: Allowed Rate of Return 2018 Guideline Review, 25 May.

Patterson, C. (1995), *The Cost of Capital: Theory and Estimation*, Quorum Books.

Robertson, D., and S. Wright (2002): “The Good News and the Bad News about Long- Run Stock Returns,” Mimeo.

Wright, S., R. Mason and D. Miles (2003), A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K, on behalf of Smithers & Co Ltd, February 13.