Attachment 11.2

Value of Imputation Credits

2016/17 to 2020/21 Access Arrangement Information

Australian Gas Networks

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1   Introduction

Under Australia's dividend imputation tax system, dividends that are paid out of company profits that have been taxed in Australia have imputation credits attached to them. A proportion of those credits will be redeemed against the domestic personal tax obligations of shareholders who receive them. However credits distributed to non-resident shareholders cannot be redeemed. Further, not all credits distributed to resident shareholders are in fact redeemed.[1]

The National Gas Rules (NGR) provide for the value of imputation credits to be taken into account in estimating the cost of corporate income tax building block, rather than by an adjustment to the return on equity. As noted in Section 11.2 of the Access Arrangement Information, gamma (γ) is the factor used to adjust the estimate of the taxable income of the benchmark efficient entity (ETI) for the value attributed to imputation credits.

This section sets out AGN's approach to estimating the value of imputation credits for the benchmark efficient entity and explains why this approach differs from that recently used by the AER. AGN relies on the following expert evidence to support its proposed value for gamma of 0.25:

- SFG Consulting (May 2014) – An Appropriate Regulatory Estimate of Gamma (Attachment 11.3);

- SFG Consulting (February 2015) – Estimating Gamma for Regulatory Purposes (Attachment 11.4);

- Frontier Economics (June 2015) – An Appropriate Regulatory Estimate of Gamma (Attachment 11.5);

- NERA (March 2015) – Estimating Distribution and Redemption Rates from Taxation Statistics (Attachment 11.6);

- SFG Consulting (June 2012) – Updated dividend drop-off estimate of theta, Report for the Energy Networks Association (Attachment 11.7); and

- NERA (June 2015) – Estimating Distribution and Redemption Rates: Response to the Australia Energy Regulator's (AER's) Final Decision for the New South Wales and Australian Capital Territory Electricity Distributors and for Jemena Gas Networks (Attachment 11.8).

2   General Approach to Estimating Gamma

Rule 87A was inserted into the NGR as part of the suite of changes made by the Australian Energy Market Commission (AEMC) to the NGR in 2012 (referred to as the 2012 rule changes). As noted in Chapter 1, the AER is required to make a decision on gamma that reflects the best estimate and that best promotes the National Gas Objective (NGO) and, in exercising discretion, take into account the Revenue and Pricing Principles (RPP).

Prior to the 2012 rule changes and the related insertion of Rule 87A, the NGR did not include a definition of gamma. The National Electricity Rules (NER) however included a definition of gamma in the formula for the estimated cost of corporate income tax, being "*the assumed utilisation of imputation credits*".[2] The AER historically took the same approach to estimating gamma for both electricity and gas businesses, which determined the value of imputation credits by calculating the product of:

- the proportion of imputation credits distributed (the distribution rate); and

- the value of the distributed credits to investors (theta or the utilisation rate).

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[1]   SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, paragraph 23. Provided as Attachment 11.4.

[2]   Previous National Electricity Rules, Rule 6.5.3.

Following a decision made by the Australian Competition Tribunal (ACT),[3] this approach resulted in an estimate of the utilisation rate of 0.35, which was based on the SFG Consulting 2011 "*state of the art*" dividend drop off study that was initiated by the ACT and a distribution rate of 0.70, which gave rise to a value for imputation credits of 0.25. This value for imputation credits of 0.25 was applied by the AER in all subsequent decisions up until the development of its Rate of Return Guideline.[4]

There is little commentary in the AEMC decision underpinning the 2012 rule changes relating to the insertion of the definition of gamma in Rule 87A. AGN considers that Rule 87A was clearly included to clarify and embody the existing regulatory approach to the estimation of gamma by defining gamma as the 'value' rather than the 'assumed utilisation' of imputation credits as reflected in the NER.

The AEMC makes no comment in its decision that it was concerned with the regulatory approach that had developed to estimate gamma or the Tribunal decisions in respect of it. Rather, the insertion of Rule 87A seems to have been made to align the definition with the regulatory practice. If the AEMC had intended to change the approach to estimating gamma, it would be expected to have consulted on such a change and included its basis and reasoning in its decision making process.

The definition of gamma in Rule 87A is a reference to the value, as in worth, placed on imputation credits by those who hold them, being equity holders. This interpretation reflects the natural meaning of the phrase "*value of imputation credits*" and is consistent with the conceptual approach in the NGR for dealing with imputation credits. The effect of Rule 87A is to reduce the cost of tax building block to take account of the "*value equity holders place on imputation credits*", reducing the required return to those equity holders.

The above interpretation is also the only interpretation that is consistent with achieving the NGO and the requirement to have regard to the RPP. This is because, if the estimate of gamma is not consistent with the value placed on imputation credits by equity holders, the resulting estimate of corporate income tax will not allow AGN to recover at least its efficient costs (required to be taken into account by the RPP), which includes a return to equity holders (thereby leading to investment that is not consistent with the NGO).

For the reasons set out in this chapter and the expert reports submitted by AGN, if the "*value of imputation credits*" is interpreted to mean the face value or the rate at which they are redeemed, the estimate will not reflect the value actually placed on imputation credits by investors. This interpretation would not result in compensation to AGN of the return required by equity holders and consequently will not promote efficient investment in and operation and use of the South Australian natural gas distribution network (the Network) that is in the long-term interests of consumers.

3   Recent AER Decisions on Gamma

On 30 April 2015, the AER released a series of decisions (referred to as the 2015 AER decisions)[5] whereby the AER departed from its estimate of the value of imputation credits in the Rate of Return Guideline (0.5) and estimated gamma to be 0.4 from within a range of 0.3 to 0.5. While the point estimates for each parameter are not explicitly stated, the AER arrived at its estimate of gamma by multiplying:

- the distribution rate; and

- the utilisation rate, which it now defined as "the utilisation value to investors in the market per dollar of imputation credits distributed."[6]

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[3]   *Application by Energex Limited ((Gamma) No 5) [2011] ACompT9.*

[4]   The AER was required under the 2012 rule changes to develop a (non-binding) Rate of Return Guideline outlining the approach it intends to take in setting the rate of return.

[5]   Preliminary Decisions for SA Power Networks, Energex and Ergon and Final Decisions for TransGrid, Networks NSW, ActewAGL, TasNetworks and Directlink. Available on the AER's website: www.aer.gov.au.

[6]   Ibid 4-15, Jemena Gas Networks Final Decision, 4-22. In its Guideline, the AER defined the utilisation rate as "*The extent to which investors can use the imputation credits they receive to reduce their personal tax*" (Explanatory Statement 159).

On 3 June 2015, the AER published its Final Decision for Jemena Gas Networks (JGN) in New South Wales for the 2015 to 2020 AA period. The AER's range for gamma of 0.3 to 0.5 and estimate of the value of imputation credits of 0.4 remained unchanged in that decision, but updated estimates of tax statistics (based on NERA) and of the distribution rate (based on Handley) were presented.[7] The June 2015 report of Professor Gray from Frontier Economics addressed the AER's most recent decisions on gamma (see Attachment 11.5).

There are two fundamental differences of approach between the AER and AGN and other Service Providers (jointly referred to as Service Providers) that result in differing estimates of gamma:

- The first fundamental difference of approach concerns which set of comparator businesses should be used when establishing a benchmark distribution rate. The AER takes the view that the data for the distribution rate and the data for the utilisation rate should be drawn from the same set of firms. AGN, the Service Providers and their advisers are of the view that:

    o the distribution decision is one that is firm specific but there will only be a single value for theta that will not vary from firm to firm; and

    o that being the case, there is no link between the data used to estimate the two parameters; and

    o that the distribution rate should be measured by reference to all equity data.

    This issue is addressed in more detail in Section 5 below.

- The second fundamental difference of approach relates to what is meant by the term "*value of imputation credits*" in Rule 87A. AGN, like the Service Providers the subject of recent AER Decisions, considers that Rule 87A requires an estimation of the worth of imputation credits to equity holders. The AER's approach relies primarily on estimates of the redemption rate, which can only ever be considered an upper bound, not a measure of value as in worth. This issue is addressed in more detail in Section 5 below.

There are also significant 'second order' differences between the AER approach and the analysis prepared by AGN's advisers, Professor Stephen Gray and Dr. Simon Wheatley of NERA:

- even if the AER's redemption rate approach were correct (or if a redemption rate estimate is calculated for the purposes of an upper bound check), Professor Gray and Dr Wheatley are of the view that the AER's implementation of that approach is incorrect; and

- similarly, while disagreeing that market value studies should be given any real weight, the AER is of the view that there are criticisms of Professor Gray's dividend drop off study (on which AGN and other Service Provider's estimate of the utilisation rate is based) that need to be addressed.

Section 5 below addresses these points.

4   Distribution Rate

The distribution rate reflects the proportion of imputation credits distributed to equity holders. In its recent decisions the AER has changed its approach to estimating the distribution rate from its historic approach and from the approach set out in the Rate of Return Guideline. In particular, the AER has departed from its estimate of 0.7 as set out in its Rate of Return Guidelines. The AER now relies on two different estimates of the distribution rate which it uses to derive its range for gamma:

- a market wide (all equity) distribution rate of 0.7; and

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7   JGN Final Decision, 4-17 and 18.

- an all equity distribution rate of 0.77.[8]

The distribution rate has never previously been estimated by reference to listed businesses only and the AER's explanation for departing from the Guideline is that it is open to it to have regard to evidence from both data sets and that it would be inconsistent to pair an estimate of the utilisation rate from only listed equities with an estimate of the distribution rate from all equities (or vice versa).[9]

However, the distribution rate and the utilisation rate are very much independent concepts and there is no reason to assume that the optimal data set used to measure them should be the same. In fact, there are strong reasons as to why the optimal data sets may differ when measuring the distribution rate and the utilisation rate.

It is commonly accepted that a distribution rate is a firm specific parameter. The distribution rate is a measure of the proportion of imputation credits distributed by a firm. As NERA note, after weighing up the costs and benefits of distributing credits, a firm may decide to distribute all credits that have been created while another might rationally decide to distribute no credits (for example, because it wishes to use internally generated funds to finance new projects).[10] Each firm will have different capital requirements and patterns for earnings. Just as the 60:40 debt to equity ratio is established as an optimal financing structure for a benchmark energy business, so too is the distribution decision.

In contrast, investors can effectively trade imputation credits via the purchase and sale of stocks and there is an extensive opportunity for arbitrage between the values of stocks in different industries. There is no reason to assume there will not be a single prevailing equilibrium price for imputation credits. In other words, the distribution rate is inherently firm specific while the same equilibrium market clearing value will be observable throughout the economy.

At the very least, there is broad support for the notion that the distribution rate should be firm specific (even if there is debate about where to draw the 'theta' value from). This is supported by the AER[11], NERA[12], Professor Gray's report,[13] Lally[14] and Handley.[15] For example, Handley says at page 7 of his May 2015 Report:

> *"it is correct to say that theta is not firm specific and the distribution rate is firm specific."*

The key question therefore relates to the correct distribution rate to adopt in the context where it is acknowledged that the distribution rate is a firm specific parameter. The AER[16] has rejected the notion that the distribution rate should actually be determined by looking at energy network company stocks because the data set is small. So the question is what is the next best source for a suitable distribution rate? In AGN's view the best estimate of the distribution rate is 0.70 based on all equity for the following key reasons:

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[8]   In its April 2015 Decisions, the estimate for listed equity was 0.8. This was updated in the JGN Final Decision 4-17, 18.

[9]   JGN Final Decision 4-22.

[10] NERA 2015, "*Estimating Distribution and Redemption Rates: Response to the AER's Final Decisions for the NSW and ACT Electricity Distributors and for Jemena Gas Networks*", June 2015, pg. 3.

[11] AER 2015, "*Final Decision TransGrid Transmission Determination 2015-16 to 2017-18 Attachment 4 - Value of Imputation Credits*", April 2015, pg. 20.

[12] NERA 2015, "*Estimating Distribution and Redemption Rates from Tax Statistics*", March 2015, Table 3.4, pg. 12. Provided as Attachment 11.6 to this AAI.

[13] Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 26. Provided as Attachment 11.5 to this AAI.

[14] Lally 2013, "*The Estimation of Gamma*," Report for the AER, November 2013.

[15] Handley 2015, "*Advice on the NERA Report: Estimating Distribution and Redemption Rates from Taxation Statistics*," A Report prepared for the AER, May 2015.

[16] AER 2013, "*Better Regulation Explanatory Statement Rate of Return Guideline*", December 2013, pg. 164.

- the AER has decided[17] that the benchmark efficient firm is "*a pure play, regulated energy network business operating within Australia*", the AER's own benchmark is not restricted to listed entities;

- as Professor Gray's June 2015 report,[18] and NERA's March 2015 report[19] explain, the top 20 Australian listed companies are predominantly multinational companies who have an extensive ability to choose distribution rates that are well below their full earnings but which favour the distribution of high proportions of Australian sourced income in order to 'unlock' high quantities of imputation credits for their shareholders:

    o it is not surprising that these firms have more than an 80% imputation credit distribution rate while other stocks are considerably lower;

- these top 20, predominantly multinational, listed entities are inappropriate comparators (at least unless their data is averaged with small firms in the economy who have low distribution rates):

    o this list, for example, includes businesses with well known international profiles such as BHP Billiton, the ANZ Bank, Macquarie Group, Rio and Westfield Corporation, all of whom self-evidently have significant foreign earnings;

- when the top 20 firms are 'backed out' of the overall data concerning listed equity, the figure is close to 70%:

    o in its recent Decisions, the AER relies on advice from Handley that Professor Gray's analysis of this issue in his February 2015 report was incomplete and oversimplified;[20]

    o the Professor Gray June 2015 report explains why the Handley advice is not accurate and takes the analysis further;

    o in addition, NERA have considered Handley's 2015 report and find there is no basis to change the view expressed in its March 2015 report that if significant weight is place on the distribution rate for companies that are not large Australian Securities Exchange-listed companies, an estimate of the rate for the benchmark efficient entity will not sit far from 0.70;[21]

- any firm with foreign profits will be able to distribute more imputation credits than they would otherwise have been able to. The 20 largest multinational companies obviously have material foreign income and they would obviously be able to distribute fewer imputation credits without that foreign income;[22]

- there is sufficient data available for both listed and unlisted entities, and in those circumstances, a better estimate of the distribution rate will be derived from the use of all equity data; and

- in any event, a proper understanding of the Handley (2014) and Lally (2014 QCA) analysis for listed firms gives rise to an estimate not materially different to 70%.[23]

Further, the distribution rate estimate using listed equity only has been updated by the AER from its April 2015 decisions, which results in a reduced estimate from 0.8 to 0.77. While the AER says it uses this

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17 AER 2013,"*Better Regulation Explanatory Statement Rate of Return Guideline*", December 2013, pg. 45.

18 Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 27-30. Provided as Attachment 11.4 to this AAI.

19 NERA 2015, "*Estimating Distribution and Redemption Rates from Taxation Statistics*", March 2015, pg. 13 and 23. Provided as Attachment 11.5 to this AAI.

20 SAPN Preliminary decision 4-66, JGN Final Decision 4-68.

21 At page 12.

22 Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 29. Provided as Attachment 11.4 to this AAI.

23 SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 46. Provided as Attachment 11.3 to this AAI.

revised estimate in its Jemena Gas Networks Final Decision,[24] there is no change to the AER's estimate of gamma or its approach to estimating the distribution rate. AGN considers that there is no reasonable basis for determining the distribution rate on the basis proposed by the AER.

5 Utilisation Rate (or Theta)

5.1 Conceptual Framework

In its Draft Decisions for a number of networks published in November 2014 (the 2014 AER decisions), the AER changed its definition of the utilisation rate to from that set out in its Rate of Return Guidelines. The AER's revised definition was stated to be "*the utilisation value to investors in the market per dollar of imputation credits distributed.*"[25] The AER has repeated this interpretation of the utilisation rate in its 2015 AER decisions.[26]

However, the AER says the views expressed in the Rate of Return Guideline and in its 2015 decisions are broadly equivalent and the current definition of the utilisation rate "*still reflects the extent to which investors in the market can use the imputation credits they receive*".[27] This is because the AER takes the view that the utilisation rate should reflect a 'before personal tax' and 'before personal costs' value.[28]

The AER approach assumes that once the effects of personal tax and costs are excluded, an equity investor who is able to fully utilise imputation credits will value each credit at its full face value. The AER says that it *does* consider that the utilisation rate represents the value to investors in the market, but the key difference between the positions of the AER and Professor Gray (as set out in the SFG Consulting February 2015 report) is the view of the AER that it needs to estimate the before personal tax and before personal cost value.[29]

SFG Consulting pointed out in its February 2015 report that these assumptions are flawed because:[30]

- personal costs are relevant because they are costs that reasonable, efficient investors would incur in relation to imputation credits, which do not apply to dividends or capital gains;

- Handley asserts that because personal taxes are not relevant, personal costs are also not relevant, however, there is an error in Handley's assumption that personal taxes are not relevant (and should be excluded) because they are 'personal'. Rather, personal taxes are not relevant because they are assumed to be symmetric between imputation credits and dividends/capital gains. Personal costs are not; and

- there is no difference between estimating gamma or any other rate of return (or weighted average cost of capital, WACC) parameter where adjustments are not made for personal costs.

In its recent decisions the AER still appears to interpret the words "*value of imputation credits*" in Rule 87A as representing the face value, rather than the "*worth*" of imputation credits to investors in the market. If the value of imputation credits is determined not from market data but from a "conceptual analysis" that causes the AER to diverge from the actual market based valuation, a mismatch will necessarily arise

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[24] JGN Final Decision 4-66.

[25] Jemena Draft Decision, 4-36. In the Guidelines the AER defined the utilisation rate as the extent to which investors can use the imputation credits they receive to reduce their tax (or receive a refund).

[26] See for example SAPN Preliminary Decision, 4-15 and 4-22, JGN Final Decision, 4-22.

[27] SAPN Preliminary Decision, 4-44, JGN Final Decision, 4-44.

[28] Ibid 4-45.

[29] Ibid 4-46.

[30] SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 8-10. Provided as Attachment 11.4 to this AAI.

between regulatory allowances and investors' investment return expectations. The effect will be to (positively or negatively) distort investment decisions, which is not in the long term interests of consumers.

As Professor Gray's report explains:

"In the regulatory setting, the regulator first estimates the return that shareholders' require and then reduces that according to the estimate of gamma. For example, suppose the regulator determines that shareholders require a return of $100 and that those shareholders will receive imputation credits that are worth $20 to them. The regulator would then allow the firm to charge prices so that it can pay a return of $80 to the shareholders. That is, the regulator's estimate of gamma determines the quantum of the reduction in the return that the firm is able to provide its shareholders by other means (dividends and capital gains).

If, for example, the regulator's assessment of the value of imputation credits is greater than the true value of imputation credits to shareholders, the shareholders will be under-compensated. In this case, the reduction in other forms of return (dividends and capital gains) will exceed the true value of the imputation credits.

Thus, when estimating gamma, the appropriate question to consider is this: What is the quantum of dividends and capital gains that shareholders would be prepared to give up in order to receive imputation credits? It is precisely this question that is addressed by market value studies that seek to quantify the relative value (to investors in the market for equity funds) of dividends, capital gains, and imputation credits.

The alternative is to reduce the regulatory allowance for returns from dividends and capital gains according to the proportion of investors who may be eligible to redeem credits, rather than according to the value of those credits. This approach will inevitably result in investors being mis-compensated because there is no attempt to consider whether the value of what investors are required to give up (dividends and capital gains) is equivalent to the value of what they receive in its place (imputation credits).

…

In my view it is abundantly clear that there are three components to the return on equity - dividends, capital gains, and imputation credits - and that a greater assumed value of imputation credits will result in a reduction in the regulatory allowance that generates dividends and capital gains. This is precisely what occurs in Row 35 of the PTRM - the return that could otherwise be provided to equity holders is reduced by the regulator's assessment of the value of imputation credits. Any suggestion that the regulatory allowance that generates dividends and capital gains is independent of the regulatory assumption about imputation credits is erroneous." [31]

In its 2015 Decisions the AER considered three types of evidence to arrive at its estimate of theta:

- *equity ownership rates* – an estimate of the proportion of Australian shares owned by resident investors. The AER places 'significant reliance' on this approach;[32]

- *redemption rates* – an estimate of the ratio of redeemed credits to distributed credits based on tax statistics. The AER places 'some' reliance on tax statistics;[33]

- *market value studies* – the AER places 'less reliance' on these studies (which studies are preferred by AGN, other service providers and their advisers);[34]

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[31]   Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 8-9. Provided as Attachment 11.5 to this AAI.

[32]   SAPN Preliminary Decision, 4-23.JGN Final Decision, 4-18 and 4-23.

[33]   Ibid, JGN Final Decision 4-18 and note 4-25, refers to placing "a degree of reliance on tax statistics".

[34]   Ibid, JGN 4-18

Each of the methodologies considered by the AER is addressed in more detail below.

5.2   Equity Ownership Rates

The AER considers that the value-weighted proportion of domestic investors in the Australian equity market is a reasonable estimate of the utilisation rate. It places significant reliance on the equity ownership approach in estimating the utilisation rate because it says:[35]

- it is well aligned with the definition of the utilisation rate in the Monkhouse framework;

- it employs a simple and intuitive methodology;

- it uses a reliable and transparent source of data; and

- it provides estimates of the utilisation rate for investors in both all equity and listed only equity.

The AER accepts that there are limitations to the equity ownership approach but does not consider them significant.[36] AGN and its advisers disagree.[37]

In its Draft Decisions in November 2014, the AER updated its analysis of equity ownership rates from its Rate of Return Guideline. The AER has further updated its estimates of both listed and unlisted Australian equity in its recent decisions:

- in respect of the combined data for listed and unlisted equity – a range of 0.56 to 0.68[38] (in the November 2014 decisions, the AER's range was 0.55 to 0.7), the current estimate being 0.58[39]; and

- in respect of listed equity – a range of 0.38 to 0.55[40] (the range in the November 2014 decisions was 0.4 to 0.6).

The AER's change in ranges since its November 2014 decisions is said to be in part a response to submissions from the networks, SFG and the advice from Handley. The AER:

- no longer relies on estimates of the single domestic ownership share (on the advice of Handley); and

- now considers only the period since July 2000 rather than data going back to the 1980s.[41]

Notwithstanding the revision in the AER's ranges of equity ownership rates, no change is made to the AER's range for gamma of 0.3 to 0.5. The equity ownership estimates in the AER's recent decisions are still 15 years old, and as such, could not reflect prevailing conditions in the market. As Professor Gray notes:

- the most recent estimate for listed Australian equity is 44% domestic ownership and it has been more than six years since the estimate was materially above 44%;[42] and

- the most recent estimate using all equity is 0.58.[43]

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[35]   SAPN Preliminary Decision 4-23, JGN Final Decision, 4-23.

[36]   JGN Final Decision, 4-24.

[37]   As set out in the SFG Consulting Report, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 8-10. Provided as Attachment 11.4 to this AAI.

[38]   JGN Final Decision 4-17.

[39]   SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 29-31. Provided as Attachment 11.4 to this AAI.

[40]   JGN Final Decision 4-17.

[41]   Ibid 4-73.

[42]   SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 30. Provided as Attachment 11.4 to this AAI.

In any event, equity ownership rates cannot be used as direct evidence of the utilisation rate. This is because equity ownership rates only identify the proportion of Australian equity owned by resident investors. To say anything about the value of the utilisation rate, it would need to be assumed that domestic investors would all be eligible to redeem imputation credits and that those investors value those imputation credits at their full face value.

Both of these assumptions are flawed for the following reasons:[44]

- in respect of eligibility of domestic investors to redeem imputation credits, the 45 day tax rule means that investors who only hold shares for a short period of time are not entitled to an imputation credit. Professor Gray notes that Handley and Maheswaran indicate the overstatement due to the 45 day rule may be material;[45]

- there are transaction costs associated with the redemption of credits which reduce their value to investors;

- there is usually a delay between credit distribution and the investor obtaining a tax credit which has the effect of diminishing the value of an imputation credit to an investor; and

- in order to make use of imputation credits an investor may reallocate some of its investment to Australian companies that pay franked dividends in order to obtain the benefit; there is a cost of moving away from what might otherwise be considered an optimal portfolio weighting.

The AER considers these factors to be either immaterial or should not be accounted for when estimating the utilisation rate.[46] Professor Gray responds to the AER's position on these issues in his June 2015 report.[47]

For these reasons equity ownership rates can only provide evidence of the maximum possible set of investors who may be eligible to redeem imputation credits and who therefore may place some value on them. Equity ownership rates cannot provide direct evidence of the value those equity holders place on distributed credits – they may provide an upper bound for theta, but do not provide the best estimate of it.

5.3 Redemption Rates Derived from Australian Tax Office Tax Statistics

In its November 2014 decisions the AER came to the view that the Australian Tax Office (ATO) statistics are subject to a number of issues prior to 2004 and that the estimates arising from tax statistics should be consistent with the AER's preferred estimates of the distribution rate. The AER then departed from its Rate of Return Guideline estimate of the redemption rate from ATO tax statistics in favour of a point estimate of 0.43.

In its 2015 decisions the AER said that it arrived at a range for the utilisation rate derived from tax statistics of 0.4 to 0.6, but noted that its estimate of the distribution rate implies it should adopt a utilisation rate of 0.43 from within this range.[48] In its Jemena Gas Networks Final Decision, based on updated statistics from NERA, the AER seems to rely on a point estimate of 0.45.[49]

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[43] SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 31; and Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015 pg. 32. Provided as Attachments 11.4 and 11.4 to this AAI.

[44] SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015; and Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015. Provided as Attachments 11.4 and 11.5 to this AAI.

[45] Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 41. Provided as Attachment 11.5 to this AAI.

[46] SAPN Preliminary Decision 4-54, JGN Decision 4-54.

[47] Section 7.

[48] SAPN Preliminary Decision, 4-25, JGN Final decision, 4-25.

[49] JGN Final Decision Table 4-1, 4-17, 4-26.

The AER notes that it places some reliance on these tax statistics in arriving at its estimate for gamma but, given limitations with the statistics, less reliance than on equity ownership rates.[50] Redemption rates derived from tax statistics do not take into account the fact that investors may value redeemed credits at less than their full face value. The reasons why an investor will value a redeemed credit at less than its full face value are the same reasons identified in Section 5.2 as to why equity ownership rates do not give a value of imputation credits to equity holders. To summarise, tax rules, transaction costs the time value of money and the portfolio effect mean that the true value of redeemed credits could be less than the full face value.

For the same reasons, redemption rates derived from tax statistics can only ever indicate the upper bound for the utilisation rate and do not provide direct evidence of the value of distributed credits to equity holders.

A detailed analysis of the AER's reliance on tax statistics in its estimate of the utilisation rate is set out in the SFG Consulting May 2014 report (see Attachment 11.2) as well as the SFG Consulting February 2015 report (see Attachment 11.3). Redemption rate estimates from ATO Statistics are also analysed in the NERA March 2015 report (see Attachment 11.5). In its June 2015 Report NERA consider the 2015 Handley report and address the question of the relationship between the redemption rate and theta. NERA conclude at page 4 that its analysis suggests the rate at which credits are redeemed exceed significantly the impact of credits on the cost of equity, or in other words, their value to investors.

5.4   Other Concerns with AER's Redemption Rate Estimates

Professor Gray's June 2015 report[51] also illustrates that the AER's methodology contains the following key internal inconsistencies when it comes to actually performing a redemption rate estimate:

- there is inconsistency as to whether the relevant redemption rate is a firm specific or market-wide parameter;

- the estimates of the redemption rate currently available are:

    o   from tax statistics – 0.43 (Hathaway 2013) and 0.45 (NERA 2015);

    o   from equity ownership – 0.44 (listed) and 0.58 all equity (latest observation); and

- these estimates do not support the AER's estimate of theta, which appears to be 0.6.[52]

Furthermore, the advisors relied on by the AER to support its conceptual approach to estimating theta have provided inconsistent views. Professor Gray (pp. 17 to 19) details these inconsistencies in his June 2015 report and shows that the approaches of Lally and Handley are inconsistent with each other.

It is also noted that both the AER's experts disagree with the approach it takes (for example Lally explicitly states that key aspects of the AER's approach is "*not correct*" and that he does "*not agree*").

Finally, Professor Gray's June 2015 report notes that the text book[53] authored by Associate Professor Partington (upon whose work the AER relies extensively in relation to establishing its preferred allowed rate of return for equity) defines gamma as "*the market value of franking credits as a percentage of face value*" and that "*the market value of the franking credit is likely to differ from its face value*". Partington states that: "*We do not know exactly what the market value is, but the evidence suggests that franking*

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[50]   SAPN Preliminary Decision 4-24, 25, JGN Final Decision, 4-25.

[51]   Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 31-32. Provided as Attachment 11.4 to this AAI.

[52]   Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, pg. 32. Provided as Attachment 11.4 to this AAI.

[53]   Brealey, Myers, Partington and Robinson (2000), p. 168

*credits are valued at a **significant discount to their face value**"*, which is inherently contradictory to the use of redemption rates as a "value of imputation credits" or gamma.[54]

Very recent work from Ainsworth, Partington and Warren (2015) reinforces Professor Gray's concerns with the AER's approach to estimating gamma, in particular the assumption an equity investor values imputation credits at their full face value, and therefore the utility of using redemption rate estimates in estimating the value of imputation credits.[55]

5.5   Market Value Studies

AGN considers that the only method that provides an estimate of the value, as in worth, of distributed imputation credits to equity investors, as required by Rule 87A, is the use of market value studies. This is the approach that complies with Rule 87A and results in an estimate of gamma that is consistent with the achievement of the NGO and the considerations required by the RPP.

The AER says that its re-definition of gamma and re-evaluation of its approach to the utilisation rate has led it to a position of not relying exclusively on market value studies. The AER prefers equity ownership and tax statistic estimates because they provide more direct and simpler evidence of the utilisation rate than market value studies.[56]

Further, the AER says it does not consider it reasonable to rely exclusively on the results of the SFG dividend drop-off study.[57] The AER has identified what it considers to be a number of limitations on market value studies. In particular:[58]

- the results from market value studies can reflect factors, such as differential personal taxes and risks, which are not relevant to the utilisation rate;

- the studies can produce nonsensical estimates (i.e. greater than one or less than zero);

- the results may not be reflective of the value of imputation credits to investors in the market as a whole;

- the studies can be data intensive and employ complex and problematic estimation methodologies; and

- it is only the value of the combined package of dividends and imputation credits that can be observed using dividend drop-off studies and there is no consensus on how to separate the value of dividends from the value of imputation credits (often referred to as the allocation problem).[58]

SFG Consulting provided a response as to why the AER's concerns in its November 2014 decisions do not apply to its 2011 dividend drop off study that was endorsed by the Tribunal. In particular SFG Consulting established that:[59]

- the Tribunal has previously accepted SFG's March 2011 dividend drop-off study as "*The best dividend drop-off study currently available for the purpose of estimating gamma in terms of the Rules*",[60] there is no basis for the AER's position that it is not reasonable to rely exclusively on the results of that study;

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[54]   Section 2.11.

[55]   Section 7.4.

[56]   SAPN Preliminary Decision, 4-26, JGN Final Decision, 4-26.

[57]   SAPN Preliminary Decision, 4-27, JGN Final Decision, 4-27.

[58]   See Jemena Draft Decision 4-22.

[59]   SFG Consulting 2015, "*Estimating Gamma for Regulatory Purposes*", February 2015, pg. 38-39. Provided as Attachment 11.3 to this AAI.

[60]   Application by Energex Limited (Gamma) (No 5) [2011] A CompT 9, paragraph 29.

- the AER's concern about studies reflecting differential personal taxes and risk is founded in its interpretation of the utilisation rate not reflecting worth to investors:

  - AGN considers that the value of imputation credits must be estimated by reference to the actual worth. Market value studies are entirely compatible with this definition and they will reflect the value of imputation credits to investors as reflected in market prices for traded securities;

- SFG's dividend drop-off analysis does not produce any implausible or nonsensical estimates and, as noted above, it has been accepted by the Tribunal; this limitation identified by the AER is therefore irrelevant to the study relied upon by AGN;

- as to dividend drop-off studies not being reflective of the value of imputation credits to investors in the market as a whole, the concern is based on an argument that increased trading volume that occurs around ex-dividend dates could potentially affect the estimate:

  - SFG Consulting has responded to this in detail and explains why, if anything, this additional trading would have the effect of increasing, rather than decreasing, the estimate of theta;[61]

- the fact that data must be collected and that the construction of dividend drop-off studies is complex is not a basis on which to reject any real reliance on dividend drop-off studies, the relevant data is available and has already been collected and analysed in the SFG Consulting dividend drop-off study. It has also been accepted by the Tribunal; and

- in relation to the allocation problem, the dividend drop-off approach does allocate the combined value of the dividends and imputation credits between each component, the benefit of this approach is that the sum of the components must equal the estimate of the whole.

In its 2015 decisions, the AER concluded that "*there is reasonable evidence to suggest that several of the limitations do apply to SFG's dividend drop off study*".[62] Professor Gray has responded again to those alleged limitations in his June 2015 report (Frontier Economics).[63]

The AER also asserts that Professor Gray's drop off studies should be "*recalibrated*" by dividing them upwards by an amount of 0.05, giving rise to an estimate of around 0.40. The idea of making an adjustment arises from the possibility that investors may value not only imputation credits but also dividends at less than their 'face value'. Professor Gray has provided further analysis of whether this is an appropriate adjustment to make. In his June 2015 report (page 37), Professor Gray reaffirms why no adjustment should be made.

To explain the effects of the AER's adjustment, Professor Gray considers a hypothetical situation in which an investor values dividends at only 90% of their face value. In summary, this hypothetical illustrates that:

> "*Rather than allowing a higher return, the AER proposed adjustment would result in a lower allowed return. The AER would propose that the 0.35 estimate should be divided by 0.9 to produce an adjusted estimate of 0.39. This higher theta would then result in shareholders receiving a lower return than they otherwise would. That is, rather than compensating investors for the lower value of dividends, the effect of the AER's propose adjustment would be to compound the problem by reducing the amount of dividends that the firm is able to distribute. Thus, such an adjustment produces a perverse outcome.*"

It is apparent from the AER's recent decisions that it places no weight on market value studies in deriving its range or point estimate for gamma. The AER says "*estimates from implied market value studies and*

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[61]   SFG (2014 Gamma) at pages 31-32.

[62]   SAPN Preliminary Decision 4-84, JGN Final Decision 4-86.

[63]   Section 5.3.

the level of reliance we place on them (including SFG's dividend drop off study) do not give us cause to move from the estimate of the value of imputation credits that we determine with regard to the evidence from the equity ownership approach and tax statistics."[64]

Market value studies, in particular the SFG 2011 dividend drop off study (updated), provide direct evidence of the value of imputation credits, as required by Rule 87A of the NGR should be used for that purpose. The state of the art dividend drop-off evidence presented by SFG and endorsed by the Tribunal (updated to apply to 2000 to 2013 data) giving rise to a value of theta is 0.35 remains the best evidence of the value of that parameter as confirmed in the June 2015 report from Professor Gray.[65]

5.6 The AER's Range for Gamma

In its Jemena Gas Networks Final Decision, the AER presented updated results of its analysis of the evidence from all and listed only equity.[66]

TABLE 1: ESTIMATES OF THE VALUE OF IMPUTATION CREDITS – EVIDENCE FROM ALL EQUITY

Evidence on Utilisation Rate	Utilisation Rate	Distribution Rate	Value of Imputation Credits
Equity Ownership Approach	0.56 to 0.68	0.7	0.40 to 0.47
Tax Statistics	0.45	0.7	0.31

Source: AER analysis.

TABLE 2: ESTIMATES OF THE VALUE OF IMPUTATION CREDITS-EVIDENCE FROM LISTED EQUITY

Evidence on Utilisation Rate	Utilisation Rate	Distribution Rate	Value of Imputation Credits
Equity Ownership Approach	0.38 to 0.55	0.77	0.29 to 0.42
Implied Market Value Studies SFG Consulting Dividend Drop Off Study	0 to 1 0.35 (0.4)[†]	0.77	0 to 0.77 0.28 (0.31) [†]

Source: AER analysis.

[†]*Following the adjustment proposed by Handley and Lally.*

The estimates presented above are slightly different to the estimates presented in equivalent tables in the AER's April 2015 decisions. The difference is due to updated analysis of tax statistics by NERA and a new report from Handley.[67] The AER says this evidence suggests that a reasonable estimate of the value of imputation credits is 0.3 to 0.5 and from within this ranges chooses a value of 0.4. Its reasons are:[68]

"• *the equity ownership approach, on which we have placed the most reliance, suggests a value between 0.40 and 0.47 when applied to all equity and between 0.29 and 0.42 when applied to only listed equity. Therefore, the overlap of the evidence from the equity ownership approach suggests a value between 0.40 and 0.42.*

• *the evidence from tax statistics suggests the value could be lower than 0.4. Therefore, with regard to this evidence and the less reliance we place on it, we choose a value at the lower end of the range suggested by the overlap of evidence from the equity ownership approach (that is, 0.4).*

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[64] SAPN Preliminary Decision Ibid 4-29, JGN Final Decision 4-29.

[65] Frontier Economics 2015, "*An Appropriate Regulatory Estimate of Gamma*", June 2015, paragraph 7d. Provided as Attachment 11.4 to this AAI.

[66] Ibid 4-18.

[67] Jemena Gas Networks Final Decision 4-17.

[68] Ibid 4-18.

> • *the evidence from SFG's dividend drop off study also suggests that the value could be lower than 0.4. However, we place even less reliance on this evidence. We therefore consider that choosing a value at the lower end of the range suggested by the overlap of evidence from the equity ownership approach (that is, 0.4) has appropriate regard to the merits of SFG's evidence. Moreover, evidence from other implied market value studies suggests that the value could be both higher or lower than 0.4."*

The AER seems to derive its range for gamma by relying on the overlap of ranges derived from its equity ownership and tax statistics approaches. However, the bottom of the AER's range does not reflect the relevant evidence that the estimate of gamma could in fact be below 0.3, in particular:

- the SFG 2011 dividend drop off study (updated) when combined with a distribution rate of 0.7, giving rise to an estimate for gamma of 0.25; and

- Handley and Lally's suggested adjustments to the SFG dividend drop off study still gives rise to an estimate for gamma of 0.28, when combined with a distribution rate of 0.7.

Further, as noted in Section 5.5, the AER's equity ownership rates and tax statistics rates, when the current and most relevant estimates are considered, even if relevant do not support the AER's implied theta of 0.6. NERA also note that even on its updated tax statistics, the upper bound for gamma should be considered to be 0.31.[69]

5.7   Summary of Imputation Credits

For the reasons set out in this attachment the AER's approach to estimating gamma:

- incorrectly estimates a range for the distribution rate of 0.7 to 0.77.

- misinterprets Rule 87A and in particular the 'value' of imputation credits required to be determined by that rule;

- consequently estimates the wrong thing, being the redemption rate;

- in any event incorrectly estimates the redemption rate;

- incorrectly and unreasonably places no or low reliance on market value studies, which provide a direct estimate of the value of distributed credits consistent with Rule 87A; and

- consequently gives rise to an estimate of gamma of 0.4 which is not the best estimate.

AGN's proposal is based on the recommendation of Professor Gray that the value of imputation credits should be estimated using the product of:

- a distribution rate of 0.7; and

- theta of 0.35 on the basis of the SFG dividend drop-off study endorsed by the Tribunal (updated to include 2000-2013 data);

- giving rise to an estimate of gamma of 0.25.

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[69]   Estimating Distribution and Redemption Rates from Taxation Statistics, March 2015, vi.

These estimates of the utilisation rate and the distribution rate are the best estimates available.[70] These estimates are also consistent with an estimate of the worth of imputation credits to equity holders, which AGN considers is the only sensible interpretation of Rule 87A of the NGR.

There is no basis to depart from the Tribunal decision endorsing this method for estimating the value of imputation credits.

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[70]   SFG Consulting 2015, "Estimating Gamma for Regulatory Purposes", February 2015, paragraph 22. Provided as Attachment 11.3 to this AAI.