Discussion paper

Value of imputation credits

March 2018

AUSTRALIAN ENERGY REGULATOR

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Shortened forms

Shortened form	Extended form
ABS	Australian Bureau of Statistics
AEMC	Australian Energy Market Commission
AER	Australian Energy Regulator
ATO	Australian Tax Office
CCP	Consumer Challenge Panel
COAG	the Council of Australian Governments
DGM	dividend growth model
energy networks	electricity and gas network service providers
FAB	franking account balance
MRP	market risk premium
NEL	national electricity law
NEO	national electricity objective
NER	national electricity rules
NGL	national gas law
NGO	national gas objective
NGR	national gas rules
RBA	the Reserve Bank of Australia
regulatory period	an access arrangement period for gas network service providers and/or a regulatory control period for electricity network service providers
the rules	collectively, the NER and NGR

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1 Introduction

The Rate of Return Guideline (Guideline) outlines our approach to setting the allowed rate of return for regulated gas and electricity network services. We are currently reviewing the Guideline.

The purposes of this discussion paper are to:

- outline background material relevant to further consideration of any issues
- set out our current approach as a starting point for discussion at the concurrent expert evidence session
- summarise submissions received from stakeholders on the value of imputation credits
- set out updated estimates of the value of imputation credits and potential issues on data sources; and
- set out questions to help frame discussion at the concurrent evidence session

In summary, our approach to date for estimating a value of imputation credit (or gamma) is to use the product of two sub-parameters: the 'distribution rate' and the 'utilisation rate'. In simple terms our current approach considers the value (to investors) of imputation credits created reflects:

- the proportion of imputation credits generated that is distributed to investors multiplied by
- the utilisation value to investors in the market per dollar of imputation credits distributed

In considering the evidence on the distribution and utilisation rates, we have broadly maintained the approach set out in the 2013 Rate of Return Guideline, but have re-examined the relevant evidence and estimates. This re-examination, of new evidence and advice considered since the 2013 guideline, led us to depart from the 0.5 value of imputation credits we proposed in the 2013 guideline. Instead, we chose a value of imputation credits of 0.4 from within a range of 0.3 to 0.5 in our recent decisions for regulated businesses.

We note that a key purpose of the concurrent evidence sessions is to assist the AER Board in making a decision which will best achieve the national gas and electricity objectives by allowing them to clearly define the issues of agreement and areas of disagreement between relevant experts. This discussion paper is prepared for the concurrent expert evidence session to assist with this purpose. We also note that the discussion papers and questions for the topics, including those contained in this discussion paper, cover a broad range of material that stakeholders wish to be considered in the Guideline review. This material should not be taken to imply the AER has already formed views on the appropriate approaches to apply, or numerical values to use, in the 2018 guideline in determining the allowed rate of return or the value of imputation credits.

2 Background

Under the Australian imputation tax system, investors receive imputation credits for tax paid at the company level. For eligible shareholders, imputation credits offset their Australian income tax liabilities. We factor the value of imputation credits (represented by the Greek letter, γ, 'gamma') into regulation to recognize that imputation credits benefit equity holders.[1] In particular, investors benefit from three potential value streams: dividends, capital gains and imputation credits.

The rules provide for a post-tax WACC framework with a rate of return that is after company tax but before personal tax. Under the post-tax WACC framework, the value of imputation credits is not a WACC parameter. Instead, it is a direct input into the calculation of the tax liability for the company, via the corporate tax component of the building block model. Hence, we adjust the corporate income tax allowance for the value of imputation credits to investors by applying:

$$Tax\ allowance = taxable\ income \times tax\ rate(1 - \gamma)$$

Where the value of imputation credits has a range of possible values between zero and one.

Unlike many other aspects of the National Electricity Rules/National Gas Rules (NER/NGR), there are no specific factors we must take into account in estimating the value of imputation credits. The allowed rate of return objective does not specifically apply to the value of imputation credits. However, the rate of return must be determined on a nominal vanilla basis that is consistent with our estimate of the value of imputation credits.[2]

In this context, the conceptual rate of return framework developed by Officer in a 1994 paper informs our current approach to interpreting and estimating the value of imputation credits.[3] It provides a consistent framework for determining the rate of return for a business, which takes into account the value that investors receive from imputation credits.[4] An important implication of this is that the value of imputation credits is not a standalone concept or parameter. It is part of a broader framework, and should be interpreted and estimated accordingly.

We have relied on the Officer framework in estimating the value of imputation credits since the 2013 guideline. We have accepted Handley's expert advice on the Officer framework that suggests the framework is on a 'before-personal-tax and before-personal-costs' basis. That is, 'the per dollar value of an imputation credit γ gamma should be measured prior to any personal tax on the credit and prior to any personal

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1 The terms, "gamma", "value for gamma" or "the value of imputation credits" have been used interchangeably in our past decisions and other literature. In this paper we have consistently used the term "the value of imputation credits" to avoid confusion.

2 NER, cll. 6.5.2(d)(2), 6A.6.2(d)(2); NGR, r. 87(4)(b).

3 R. Officer, 'The cost of capital of a company under an imputation system', *Accounting and finance*, vol. 34(1), May 1994, pp. 1–17.

4 For a detailed discussion of the Officer framework, see: J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014, pp. 7–12.

costs associated with the receipt of the credit'.[5] Therefore, our current approach based on the Officer framework takes the view that the value of imputation credits as the proportion of company tax returned to investors through the utilisation of imputation credits.

To estimate the value of imputation credits, we use the Monkhouse (1996) formula. The Monkhouse formula is a common way to model the value of imputation credits to investors. It implies that the value of imputation credits is the product of a payout ratio and a utilisation rate. However, both of these parameters are conceptually complex and difficult to estimate. Experts have advocated a wide range of values that investors place on generated imputation tax credits. These span from zero to one, including the different points within this range, with zero signifying no value and one full value.

In the 2013 guideline review, the AER conducted its review of the value of imputation credits. In that review, we proposed that the value of imputation credits should be set with regard to a benchmark efficient entity informed by market wide behaviour rather than with regard to industry or firm specific values.[6] Applying this approach, we adopted 0.5 as the value of imputation credits in the AER Rate of Return Guideline. This was the product of:

- A payout ratio of 0.7
- A utilisation rate of 0.7

Since 2015, we have adopted a value for imputation credits of 0.4 for final decisions released in 2015, 2016 and 2017.[7] We departed from the Guideline reasoning by not relying upon the 'conceptual goalposts approach'. This was based on advice from Handley indicating this approach is not a reasonable approach to estimating the utilisation rate.[8] In addition, in the 2013 guideline we considered that the equity ownership approach supported a utilisation rate of between 0.7 and 0.8. Post the 2013 guideline publication we re-examined the relevant data from the national accounts. This resulted in us updating and refining our estimates. The updated estimates from the equity ownership approach indicated a lower utilisation rate.[9]

We also have had regard to the distribution rate for listed equity in estimating the value of imputation credits post the 2013 guideline. We note in the 2013 guideline we only considered the distribution rate across all equity. We now consider that:

- It is open to us to have regard to evidence from all equity and/or listed equity only

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5 J. Handley, *Report prepared for the Australian Energy Regulator: Further advice on the value of imputation credits*, 16 April 2015, p. 5.

6 AER, *Rate of return guideline*, December 2013, p. 23.

7 We first adopted this value on our November 2014 draft decisions for Ausgrid and others.

8 J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, September 2014, p. 31.

9 AER, *Draft decision: Ausgrid distribution determination 2015-16 to 2018-19, Attachment 4: Value of imputation credits*, November 2014, pp. 14-19.

- It is not necessary to combine estimates of the distribution rate and utilisation rate from the same dataset

Having re-examined the relevant evidence and estimates, we decided to depart from the estimated value for imputation credits of 0.5 proposed in the 2013 guideline.

We note that the discussion since the 2013 guideline review has principally been around the legal interpretation of 'value' in the context of estimating the value of imputation credits under the Rules. A number of businesses previously took the view that the value of imputation credits should be interpreted as the post personal tax and personal cost market value. They considered the value of distributed imputation credits (or theta) should be estimated from implied market value studies which seek to infer the value of distributed imputation credits from market prices. We consider this issue has been largely settled following the federal court decisions. The federal court found that it is not an error of construction for the AER to focus on utilisation rather than on implied market value.[10]

This section sets out:

- Current approach to estimating the value of imputation credits
- Recent litigation on the value of imputation credits
- Submissions received in response to our issues paper

2.1 Current approach to estimating the value of imputation credits

Since 2015, our estimated value of imputation credits has been 0.4, from within a range 0.3 to 0.5. This was a departure from the value of 0.5 set out in our 2013 guideline, which we made after re-examining the relevant evidence and estimates. Our current approach to estimating the value of imputation credits has entailed:

- Adopting a conceptual approach consistent with the Officer framework.[11] This approach considers that the value of imputation credits is a post-tax value before the impact of personal taxes and transaction costs.[12] As such, we have viewed the value of imputation credits as the proportion of company tax returned to investors through the utilisation of imputation credits.[13]
- Having regard to evidence from all equity, as well as the sub-set of listed equity. There is no consensus on which approach better estimates the value of imputation credits. We have considered that both these estimation approaches are reasonably

[10] Federal Court of Australia, SA Power Networks v Australian Competition Tribunal (No 2) [2018] FCAFC 3, Jan 2018, para. 56.

[11] The Officer framework is set out in R. Officer, 'The cost of capital of a company under an imputation system', *Accounting and finance*, vol. 34(1), May 1994.

[12] Post-tax refers to after company tax and before personal tax.

[13] This means one dollar of claimed imputation credits has a post (company) tax value of one dollar to investors before personal taxes and personal transaction costs.

consistent with a benchmark efficient entity given the difficulties associated with choosing a representative dataset.

- Applying the widely accepted approach of estimating the value of imputation credits to investors as the product of the 'distribution rate' and 'utilisation rate'.[14]

2.1.1 The distribution rate

The 'distribution rate' (or payout ratio), represents the proportion of imputation credits generated by a benchmark efficient entity that is expected to be distributed to investors. In estimating the distribution rate, our current approach:

- Mainly has relied on the widely accepted 'cumulative payout ratio approach'. This approach uses Australian Tax Office (ATO) data on the accounts used by companies to track their stocks of imputation credits ('franking account balances'). Estimates of the cumulative payout ratio of 0.75 for listed equity and 0.7 for all equity were adopted in our recent decisions.[15]
- Has had some regard to Lally's estimate of 0.83 for listed equity from financial reports of the 20 largest ASX-listed firms, which he considers the most reliable data.[16]

2.1.2 The utilisation rate

The 'utilisation rate' (or theta) is the value to investors of utilising imputation credits per dollar of imputation credits distributed. In estimating the utilisation rate, we have relied on the definition of theta from the Monkhouse framework. The framework considers that the utilisation rate is equal to the weighted average, by wealth and risk aversion, of the utilisation rates of individual investors. For an 'eligible' investor, each dollar of imputation credit received can be fully returned to the investor in the form of a reduction in tax payable or a refund.[17] Therefore, we have considered that eligible investors have a utilisation rate of 1. Conversely, 'ineligible' investors cannot utilise imputation credits and have a utilisation rate of 0. Our current approach in estimating the utilisation rate has placed:

- Significant reliance upon the equity ownership approach, which estimates the value-weighted proportion of domestic investors in the Australian equity market. This reflects that generally, domestic investors who are eligible to utilise imputation credits would have a utilisation rate of 1 whereas foreign investors would have a

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[14] This approach is referred to as the 'Monkhouse formula' as set out in P. Monkhouse, 'The Valuation of Projects Under the Dividend Imputation Tax System', *Accounting and finance*, 1996, vol. 36(2), pp. 185–212.

[15] We note that the data currently gives the cumulative payout ratio for all equity is 0.67 instead of 0.7 from our earlier estimation. However, given the volatility in the data series, we consider the continued use of 0.7 (versus 0.67) has no material effect on our final estimate of 0.4 and has been consistent with energy networks' recent proposals.

[16] M. Lally, *Gamma and the ACT Decision*, May 2016, p. 6.

[17] This is the return to eligible investors before administrative costs, personal taxes and diversification costs. Handley advises that this is the desired basis for the utilisation rate.

utilisation rate of 0. We have used data from the National Accounts of the Australian Bureau of Statistics (ABS) to estimate the domestic ownership share.

- Some reliance upon ATO statistics, which provides an estimate of the amount investors redeem to reduce their tax liabilities (also called the 'redemption rate'). We have relied on estimates from this data source less than the estimates from the equity ownership approach as there are unresolved issues with the ATO statistics. We also have placed greater reliance upon estimates derived from post-2004 data, as this data is of higher quality.[18] We have also placed greater reliance upon estimates that are consistent with our estimates of the distribution rate using cumulative distribution rate data.[19]
- Less reliance upon implied market value studies, which infer the value of distributed imputation credits from market prices. While these studies employ various techniques, dividend drop off studies are common. These studies compare the price of a security with and without the entitlement to a dividend. We have placed less reliance on these studies because they are inconsistent with our conceptual approach, where the value of imputation credits is a post (company) tax value and before the impact of personal taxes and personal costs. Our limited reliance also reflects that there are many limitations with using dividend drop off studies to estimate the utilisation rate. This is supported by the Australian Competition Tribunal. It considers that market studies, in particular, the dividend drop-off study, which take into account of the investor's costs do not meet the Rules.[20] The Rules require that the value of imputation credits be measured before investor taxes and costs.[21]

2.2 Recent litigation on the value of imputation credits

The key issue that has been in dispute over the past few years is the meaning of "value" in the statutory context. Most of the businesses have taken the word "value" as the market value of imputation credits to investors as reflected in market prices and have proposed that the value of imputation credits should be examined principally through implied market value studies. Whereas the AER has taken the view that the value of imputation credits is a post company tax (post-tax) value before the impact of personal taxes and transaction costs.[22] As such, we view the value of imputation credits as the proportion of company tax returned to investors through the utilisation of

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18 N. Hathaway, *Imputation credit redemption ATO data 1988–2011: Where have all the credits gone?*, September 2013, para. 32.

19 However, this consistency principle does not preclude combining a utilisation rate estimated based on this principle with a higher estimate of the distribution rate for a benchmark efficient entity based on Lally, *Gamma and the ACT decision*, May 2016, pp. 5, 25.

20 Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 337.

21 Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 337.

22 Post-tax refers to after company tax and before personal tax.

imputation credits (a ‘utilisation’ approach to theta and to the value of imputation credits).

The matter was recently heard by the Full Federal Court in a decision handed down on 24 May 2017[23]. The Court found it was not an error of construction for the AER to focus on utilisation rather than on implied market value.[24] It accepted the AER's submission that the Rules require consistency in the way the relevant building blocks interact, that is, after company tax but before personal tax and personal costs.[25] The Full Federal Court found the Tribunal erred in concluding that the value of imputation credits is (only) the value claimed or utilised as demonstrated by the behaviour of the shareholder recipients of the imputation credits.[26] The Full Federal Courts decision on this point is consistent with the approach we have taken in all regulatory decision released since November 2014.

The Tribunal’s decision in October 2017 further upheld the AER’s decision on the value of imputation credits.[27] The Tribunal considered that it was open to the AER to consider both listed and all equity consistent with matching the distribution and utilisation rate estimates for each of those categories.[28] It accepted that the AER was entitled to come to the view that the Rules require that the value of imputation credits be measured before investor taxes and costs.[29] It accepted the expert advice that “before investor taxes and costs” means the value of imputation credits is to be estimated before allowing for the impact of those taxes and costs and that market studies, in particular, the dividend drop-off study, which take into account of the investor’s costs do not meet that requirement.[30] The Tribunal further came to the following conclusions:[31]

- The AER made no relevant error in its choice of the period over which it considered equity ownership data. That approach was open to it, and as explained by it, reasonable.
- The AER made no relevant error in choosing the estimate that it did from within the equity ownership range. Its manner of choice, as described in its Final Decisions, was clearly open to it.

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[23] Federal Court of Australia, Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017] FCAFC 79, May 2017

[24] Federal Court of Australia, Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017] FCAFC 79, May 2017, p. 216.

[25] Federal Court of Australia, Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017] FCAFC 79, May 2017, p. 216.

[26] Federal Court of Australia, Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017] FCAFC 79, May 2017, p. 216.

[27] Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017

[28] Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 299.

[29] Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 337.

[30] Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 338.

[31] Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017, para. 346, 347, 348,351.

- The reliability of the tax statistics is unclear. The AER did not err in giving some reduced weight to tax statistics; nor did it err in the manner in which it took them into account, as set out in detail in its Final Decisions.

The Full Federal Court's January 2018 decision also affirmed the AER's interpretation of the value of imputation credits by stating that it is not an error of construction for the AER to focus on utilisation rather than on implied market value.[32]

2.3 Submissions

A number of submissions on our October 2017 rate of return issues paper discussed issues relating to the estimation of the value of imputation credits (or gamma). It was agreed by most of the stakeholders that our approach to estimating the value of imputation credits has largely been settled following the Full Federal Court decisions. That is, it appears all stakeholders accept it is open to the AER to take a 'utilisation' approach to estimating the value of imputation credits. The main discussion on the value of imputation credits in the submissions was focused on the review of empirical analysis to inform a value of imputation credits. In particular, a key issue raised was around the use of tax statistics as one source of information to inform the estimate of the value of imputation credits given there is an unresolved discrepancy between datasets from the Australian Taxation Office (ATO). Some submissions also suggested the use of ATO tax statistics could give a direct estimate of the value of imputation credits. Individual submissions on the value of imputation credits are outlined in Table 1below.

Table 1 Submissions on the value of imputation credits

[32] Federal Court of Australia, SA Power Networks v Australian Competition Tribunal (No 2) [2018] FCAFC 3, Jan 2018, para. 56.

Stakeholders	View
APA	Rule 74(2) of the NGR requires that a forecast or estimate be made on a reasonable basis and be the best possible in the circumstances. Limiting the review to the updating of earlier empirical analysis would not be in accordance with the rule.
ATCO Gas Australia	The AER should consider the composition of the empirical evidence used to update the value of imputation credits as well as that of the benchmark efficient entity. This includes consideration of the suitability of adopting the distribution rate of firms in the ASX 20 or the market as a whole as a proxy for the benchmark efficient entity given that various business models exist among listed businesses. There should be consistency across the empirical evidence used to estimate the rate of return.
Australian Pipelines and Gas Association	The main issue is around tax statistics and it is unclear how the top-20 firms can be seen to have any connection to the BEE.
Cheung Kong Infrastructure, Energy Networks Association, AusNet Services	The businesses accept the AER's utilisation rate approach to estimating the value of imputation credits. The data for company tax paid and franking credits redeemed from ATO tax stats should give a direct estimate of the value of imputation credits as per Dr Hathaway. The equity ownership approach in estimating the utilisation rate does not take into account investors who receive imputation credits but who do not redeem them. ABS data is also less reliable. Lally's distribution rate derived from the financial statements of top 20 listed firms does not give an accurate reflection for the benchmark efficient entity. The AER should set out clearly how the updated empirical analysis has been used and distilled into a point estimate
Consumer Challenge Panel 16	The AER's focus on equity ownership and tax statistics is appropriate. The AER should develop a consistent framework and data set for the assessment of the value of imputation credits based on that. The AER should continue to seek refinement of the tax return data given it should be useful for estimating the payout rate and the utilisation rate. The AER should also look at relevant data on taxation and imputation policies of the relevant businesses.
Ergon Energy and Energex, Public Interest Advocacy Centre, EUAA	The definition of the value of imputation credits should be regarded as settled, following recent Federal Court decisions, the update to empirical analysis should be used to inform the estimate of the value of imputation credits.
Major Energy Users	The MEU is concerned that the actual tax paid by networks is far under the amount of tax assumed by the AER and has reservations about the assessment of utilisation and distribution rates that are used. A value of imputation credits of 0.4 is much too conservative and needs to be increased.
Spark Infrastructure	It is not appropriate to limit the review to an update of the empirical evidence. It should be extended to consider the method, data and how the range and point estimates are to be determined.

Source: APA, *APA submission responding to AER issues paper,* 12 December 2017, p. 12; ATCO Gas Australia, *Response to Revie of Rate of Return Guideline – Issues Paper*, 12 December 2017, p. 9; APGA, *Submission to the Issues Paper*, 12 December 2017, p. 10; Cheung Kong Infrastructure, *Review of the Rate*

of Return Guideline, 12 December 2017, pp. 5-6; CCP (subpanel 16), *CCP Submission to the AER on its Rate of Return Guideline Issues Paper*, December 2017, pp. 9-10; ENA, *Response to AER Issues Paper*, 12 December 2017, pp. 35-38; AusNet Services, *Submission to AER issues paper*, December 2017; Ergon Energy and Energex, *Ergon Energy and Energex submission on AER Issues Paper*, 12 December 2017, p. 7; PIAC; *PICA letter to the AER*, December 2017, p.2; EUAA, *EUAA submission to AER Rate of Return Review issues paper*, October 2017, pp. 9-10; Major Energy Users, *Submission by the MEU to the review of the rate of return guideline*, 18 December 2017, p. 17; Spark Infrastructure, *Response to issues paper on the review of the Rate of Return Guideline*, December 2017, p. 10.

3 Updated estimates of the value of imputation credits

For this guideline review, we have updated the data to the latest data available.

3.1 Updated estimates

Table 2 and Table 3 show estimates of the value of imputation credits that arise from internally consistent evidence from all equity and only listed equity.[33] Table 2 also shows the estimated value of imputation credits from Lally's recommended approach. These individual sources of evidence allow us to present estimates to two decimal places. However, we consider it reasonable to determine a value of imputation credits to only one decimal place when determining a single value from across this evidence.

Table 2 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	0.61 to 0.70[34]	0.7[35]	0.43 to 0.49
Equity ownership approach (using the most recent quarter's estimate)[36]	0.65[37]	0.7	0.45
Equity ownership approach (Lally estimated distribution rate)	0.61 to 0.70[38]	0.83	0.51 to 0.58[39]

[33] Note that our estimates of the distribution rate for listed equity come from ATO data on public companies. Handley advised that it is not strictly correct to refer to ATO data on public companies as data on listed companies. This is because the ATO definition of a public company includes but is not limited to listed companies. However, Handley also advised that referring to the public company data as relating to listed companies is suitable for our purpose. J. Handley, *Report prepared for the Australian Energy Regulator: Further advice on the value of imputation credits*, 16 April 2015, footnote 26.

[34] We have recently updated the equity ownership data form the National Accounts of the Australian Bureau of Statistics (ABS). We note that the Finance and Wealth publication has incorporated revisions as a result of a Historical Review by the ABS that was undertaken across the National Accounts. The time series was opened back to 1988 in this review. The range using the ABS data prior to the revisions in the September 2017 quarter was 0.57 to 0.68.

[35] We have updated the distribution rate to the latest 2015 release based on ATO FAB data. We find the cumulative payout ratio for all equity is 0.67. However, we remain of the view that using an estimated distribution rate of 0.7 is appropriate for all equity given the volatility in the data series.

[36] The estimate of the utilisation rate is from the total equity ownership data for the quarter September 2017.

[37] The point estimate for the June 2017 quarter increased from 0.60 to 0.65 due to revisions in the September 2017 ABS release. The September 2017 point estimate was approximately the same as the revised June 2017 number.

[38] Lally does no use a range for the utilisation rate, rather Lally recommends a utilisation rate of at least 0.6 (all equity). See Lally, *Gamma and the ACT Decision*, May 2016, pp. 5, 6, 21, 23, 31, 32.

[39] Lally recommends a gamma estimate of at least 0.5 which is based on a distribution rate of at least 0.83 and a utilisation rate of 0.6. See: M. Lally, *Gamma and the ACT Decision*, May 2016, p. 6.

Equity ownership approach (Lally estimated distribution rate and the most recent quarter's estimate)	0.65	0.83	0.54
Tax statistics	0.5	0.7	0.35
Tax statistics (Lally estimated distribution rate)	0.5	0.83	0.41

Source: AER analysis; Lally, *Gamma and the ACT Decision*, May 2016, p. 6.

Table 3 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	0.52 to 0.58[40]	0.75	0.39 to 0.43 [(a)]
Equity ownership approach (using the most recent quarter's estimate)[41]	0.58[42]	0.75	0.43
Implied market value studies	0 to 1	0.75	0 to 0.75
SFG dividend drop off study	*0.35 (0.4)*[(a)]		*0.26 (0.30)*[(b)]

Source: AER analysis.

(a) We note Lally recommends the utilisation rate from all equity over the utilisation rate from listed equity. However, if his estimated distribution rate was paired with the utilisation rate for listed equity it would give a range for the value of imputation credits of 0.43 to 0.48.

(b): Following the adjustment proposed by Handley and Lally. This adjustment is discussed further in in AER's recent decisions.

Overall, the evidence suggests that a reasonable estimate of the value of imputation credits is within the range 0.3 to 0.6.[43] This is a broader range than the range set out in determinations since the Guideline of 0.3 to 0.5. The broader range is driven by revised equity ownership data from the ABS and Lally's estimate of the distribution rate based on the annual financial report data of the top 20 ASX firms.

We also make the following observations based on current data:

- The equity ownership approach, on which we place the most reliance, suggests a value between 0.39 to 0.49 using 'matched' distribution and utilisation rates for all equity and for all listed equity, respectively. This is based on a range of 0.43 and

40 The range using the ABS data prior to the revisions in the September 2017 quarter was 0.38 to 0.55.

41 The estimate of the utilisation rate is from the listed equity ownership data for the quarter September 2017.

42 The point estimate for the June 2017 quarter increased from 0.47 to 0.58 due to revisions in the September 2017 ABS release. The September 2017 point estimate was approximately the same as the revised June 2017 number.

43 Although implied market value studies produce estimates below 0.3 and above 0.5, we place less reliance on these studies.

0.49 when applied to all equity and 0.39 and 0.43 when applied to only all listed equity. The overlap of the different evidence from the equity ownership approach using these 'matched' distribution and utilisation rates suggests a value of 0.43. We also note using Lally's recommended approach, and combining the use of an all equity utilisation rate from the equity ownership approach with a distribution rate for listed equity from financial reports of the top 20 ASX listed firms, gives a range of 0.51 to 0.58.

- Some businesses submitted that the AER's constructed range for its equity ownership estimates is based on data that is out of date. They suggest that the AER should place more weight on the prevailing equity ownership figures.[44] To address this potential issue, we have included the most recent estimate, from the September 2017 ABS release, in the tables above. The most recent estimates give a utilisation rate of 0.65 for all equity and 0.58 for listed equity. It suggests a value of imputation credits of 0.45 and 0.43 using 'matched data'. The use of the most recent point estimate of the utilisation rate for all equity with a distribution rate estimated by Lally from the top 20 ASX firms gives an estimate of the value of imputation credits of 0.54.
- The evidence from tax statistics, on which we have placed less reliance, suggests a value of imputation credits around 0.35 based on a utilisation rate of 0.50 and an economy wide distribution rate of 0.70. This is below the equity ownership approach range of 0.39 to 0.49 using 'matched' data. The taxation data also suggests a value around 0.41 based on a utilisation rate of 0.5 and Lally's estimated distribution rate for a benchmark efficient entity of 0.83.
- The evidence from implied market value studies, on which we have placed even less reliance, suggests a value of imputation credits of between 0 and 0.75. In particular, SFG's dividend drop off study suggests a value of 0.26 or 0.30. This is both below the 'matched' equity ownership approach range of 0.39 to 0.49 and below Lally's recommended estimate of the value of imputation credits of at least 0.5.

3.2 Potential issues on data sources

Two important sources of information used for estimating the value of imputation credits are:

- the equity ownership data obtained from the National Accounts of the ABS to inform the utilisation rate
- tax statistics obtained from the ATO

3.2.1 ABS equity ownership data

[44] ENA, *AER Rate of Return Guidelines: Response to issues paper*, 12 December 2017, p. 37.

The September quarter 2017 ABS data has recently been released. We note that the ABS has undertaken some quality assurance work for the historical data through reviews of compilation methods and through source data across the National Accounts. The time series was opened back to 1988 in this review. The Finance and Wealth publication has incorporated the revisions as a result of the historical review.[45]

We propose to use the updated ABS Finance and Wealth publication data (as opposed to the ABS data contained in prior Finance and Wealth publications) as one source of information for estimating the utilisation rate to inform our estimate of the value of imputation credits.

3.2.2 Tax statistics

The ATO publishes aggregate statistics on the tax returns submitted by individuals, superannuation funds and companies, as well as on the imputation credits refunded to certain income tax exempt entities (for example, charities).[46] It also publishes aggregate statistics on tax paid and franked dividends distributed by companies. In theory, these statistics can be used to derive a distribution rate and a utilisation rate to inform a value of imputation credits. However, there are underlying data issues with tax statistics and as a result, we have questioned the reliability of a value of imputation credits estimated directly from this data in the past.

In particular, Hathaway identified a significant discrepancy associated with the tracking of imputation credits in the ATO data.[47] He found the franking account balance (FAB) data and dividend payment data from ATO tax statistics gives two different estimates of the distribution rate. We discuss this further below. Having regard to the issues with the tax data, Hathaway in his 2013 report says "'[t]he conclusion is that I accept the tax payments and FAB data as given post-2003, and assume that the problem is more likely to have arisen within the franked dividend payments data"[48] Hathaway also suggests to 'urge all caution in using ATO statistics for any estimates of parameters concerned with imputation credits'.[49]

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45 A technical note which provides details about the major quality assurance work that was undertaken can be found at: http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/5232.0Technical%20Note1Sep%202017?opendocument&tabname=Notes&prodno=5232.0&issue=Sep%202017&num=&view

46 These statistics are available at: https://www.ato.gov.au/About-ATO/Research-and-statistics/Taxation-statistics/. Accessed 9 April 2015.

47 N. Hathaway, *Imputation Credit Redemption ATO data 1988–2011 Where have all the credits gone?,* September 2013,

48 N. Hathaway, Imputation Credit Redemption ATO data 1988–2011 Where have all the credits gone?, September 2013, p. 25.

49 N. Hathaway, *Imputation credit redemption ATO data 1988–2011: Where have all the credits gone?*, September 2013, p. 5.

We note that Hathaway later updated his analysis of the tax statistics to include data for the 2011-2012 financial year. Importantly, in the updated report, he appears to come to a different conclusion to his 2013 analysis regarding the FAB data. He considers the implied gross distribution rate of 0.88 based on the updated FAB data is 'improbable' and much higher than the gross distribution rate implied by the dividend payment data (0.66, which appears to be considered by Hathaway in this report to be not the source of the discrepancy).[50]

We also note Energy Networks Australia has recently submitted a brief report by Hathaway to this guideline review process.[51] Hathaway in the report suggests the total amount of credits redeemed (as calculated from ATO statistics) divided by total company tax from ATO statistics could give a direct estimate of a 'national' value of imputation credits. However, this report does not resolve the underlying reconciliation issues that remain apparent in the ATO statistics. There is also the issue that a 'national' value of imputation credits (even if it was a reasonable estimate) does not necessarily represent an appropriate benchmark value of imputation credits. We note related to this that Hathaway's work implies he considers the appropriate benchmark is likely to be a relatively large publically listed firm and Lally also supports the use of a distribution rate estimated from the financial statements of a subset of large listed firms. [52]

In decisions to date having considered the underlying unreconciled problems with tax statistics, we have expressed the view that caution should be exercised with using ATO statistics to estimate any parameters concerned with franking credit which include the value of imputation credits, distribution rate and utilisation value.[53] This has been supported by expert evidence.[54]

3.2.2.1 Hathaway's reports

In considering the use of tax statistics we have attempted to replicate the numbers in Hathaway's reports. The first three columns of Figure 1 are largely based on ATO company tax table 1.[55] We obtain the same numeric results for columns one to two in figure 1 below, but have not been able to exactly replicate some numbers from column

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50 N. Hathaway, *Imputation credit redemption ATO data 1988–2012: Where have all the credits gone? (draft)*, October 2014, pp 28, 30.

51 ENA, *Submission on rate of return issues paper, attachment A.1 Engagement approach*, 12 December 2017

52 N. Hathaway, *Imputation Credit Redemption ATO data 1988–2011 Where have all the credits gone?,* September 2013, p. 42; Lally, *Gamma and the ACT Decision*, May 2016, p. 4–6.

53 See for example, AER, *Final decision* AusNet *Services transmission determination 2017-22, Attachment 4—Value of imputation credits*, April 2017; AER, *Final decision* TransGrid *transmission determination 2018-22, Attachment 4—Value of imputation credits*, September 2017

54 J. Handley, *Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits*, 29 September 2014, p. 31; M. Lally, *Estimating gamma*, 25 November 2013, p. 4. Also see M. Lally, *Gamma and the ACT Decision*, May 2016, p. 4–5.

55 Table link: https://www.ato.gov.au/About-ATO/Research-and-statistics/In-detail/Taxation-statistics/Taxation-statistics-2010-11/?anchor=Detail_Company_tax_and_the_petroleum_res##Detail_Company_tax_and_the_petroleum_res

three. Specifically column three includes an estimated $7 billion timing difference and $6.4 billion of imputation credits received by life office and it is not entirely clear to us how he calculated these numbers.[56] However, we have (under certain assumptions) replicated these numbers within around $3 billion. Therefore, given the sum of the amounts of $7 billion + $6.4 billion is not material to the reconciliation discrepancy (of $87.5 billion) and we have also replicated Hathaway's estimates within a few billion dollars, we find consistent with Hathaway that the data in ATO table 1 cannot be reconciled and the irreconcilable difference is material.

Summary of key ATO Table 1 Hathaway numeric analysis

Hathaway assumes the following equation should hold if the ATO tax statistics in company tax table 1 is reliable:

$$Imputation\ credits\ (IC)\ created^{57} = IC\ distributed^{58} + IC\ retained^{59}$$

In theory, we agree with Hathaway that the equation above should holds if the ATO tax data used in Hathaway's analysis is reliable and relevant. The analysis is confined to the period 2004-2011 due to concerns with pre 2004 data.[60]

In Hathaway's analysis, the total number of imputation credits created for the period 2004-2011 comes from the item 'Net tax' (row 339) in company tax table 1. The total for that period is $421.5 billion.

The item 'IC distributed' on the right hand side of the equation is calculated from the item 'Franked dividend' (row 207) in company tax table 1. The item 'Franked dividend' represents the amount of fully franked dividends paid.[61] The number of distributed franking credits is calculated from the item 'Franked dividend' using the following formula:[62]

$$Franked\ dividend \div 0.7 \times 0.3$$

The calculation gives a number of $270.7 billion for the imputation credits distributed. Among the $270.7 billion imputation credits distributed, Hathaway considers there is a certain portion of credits that is recycled within companies and the $270.7 billion

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56 We note that these two numbers are not influential.

57 Hathaway assumes tax paid should be equal to imputation credits created. He uses "net tax" in company tax table 1 from ATO website.

58 Imputation credits distributed can be calculated from franked dividend. Hathaway uses "franked dividend" from company tax table 1 and then divided that number by 0.7 and times 0.3 to get imputation credits distributed.

59 Hathaway uses franking account balance data to inform the amount of imputation credits that has been retained by companies. The franking account records the amount of tax paid that a franking entity can pass on to its members as a franking credit.

60 Hathaway considers the ATO has had a lot of trouble deciding on the appropriate data for the period 2001-2003. The past data has been revised numerous times, both up and down in the year since then.

61 If a partly franked dividend was paid, only the franked portion will be recorded in item 'franked dividend'. The unfranked portion will be recorded as unfranked dividend paid.

62 Corporate tax rate was 30% during the period 2004-2011.

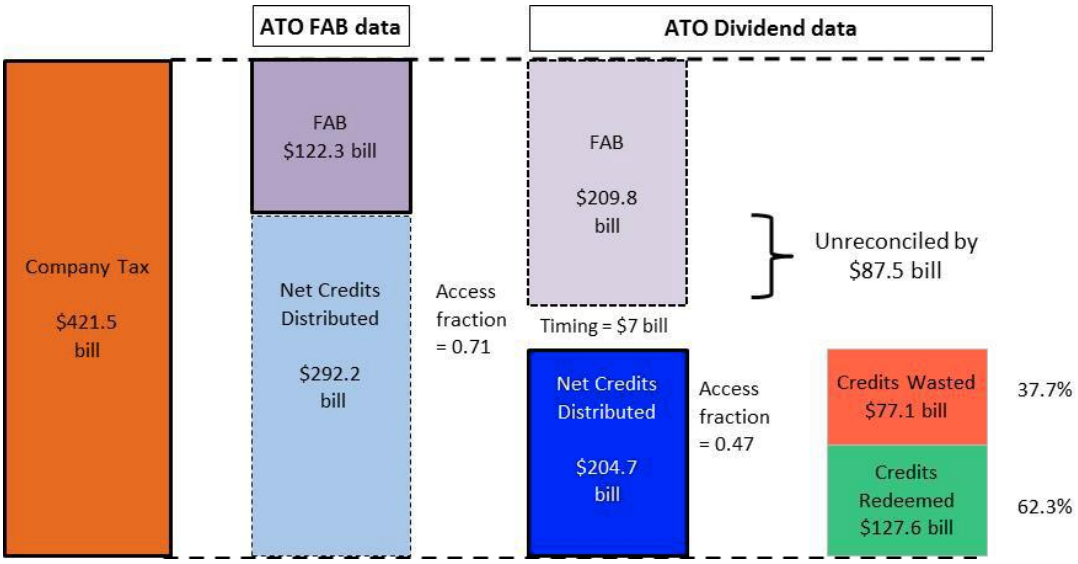
should be adjusted for that. An example for that could be company A pays company B franked dividend, when company B distributes the dividend to its shareholders the franked dividend will be recorded twice. Hence, the amount of imputation credits distributed calculated from the ATO dividend data should be adjusted for the recycled credits. We have attempted to replicate Hathaway's number of $66 billion of recycled credits. This appears to be calculated from the item 'other refundable credits' (row 322) and the item 'rebates/tax offsets' (row 328). These two items give a total of $72.3 billion and we then deduct an amount of $6.4 billion for the imputation credits received by life office[63]. The total imputation credits distributed after adjusting for the recycled credits is $204.7 billion (see Figure 1 below).

Instead of using the dividend payment data to inform the number of the item 'IC retained' on the right hand of the equation, Hathaway looks at the Franking Account Balance (FAB) data. The franking account records the amount of tax paid that a franking entity can pass on to its members as a franking credit. In other words, the franking account shows the amount of imputation credits that are available for distribution. The change in the FAB gives us the amount of imputation credits that were created within a certain period of time but have not been distributed. Hathaway uses the item "class c franking account balance" in company tax table 1 to work out the amount of imputation credits retained for the period 2004-2011. It is calculated as the 2011 value of the item 'Class C franking account balance' (row 213) minus the 2003 value. The FAB data gives a number of $122.3 billion of imputation credits retained for the period 2004 to 2011.

Theoretically, the sum of the items on the right hand side of the equation should be equal to the item on the left hand side of the equation. However, the sum we get from the right hand side of the equation is $334 billion (122.3+204.7+7 for timing) whereas the left hand side gives us a number of $421.5 billion. Clearly, there is $87.5 billion discrepancy between the two numbers. The Figure below is from Hathaway's reports that shows this discrepancy.

[63] It is not very clear to us how Hathaway gets the $6.4 billion number for the franking credits by life office. It seems that Hathaway estimates it with reference to the level of direct franking credits received by funds and the life office share of the total fund holding of Australian equities. The level of direct franking credits received by funds can be calculated from 'dividend franking credit' (row 41) of super funds table 1 (APRA regulated) plus 'dividend franking credits' (row 30) of super funds table 2 (SMSF)

Figure 1 Summary of ATO tax flow data: 2004-2011[64]



3.2.3 Lally's preferred approach

Lally has recommended pairing an estimate of the utilisation rate for all equity from the equity ownership approach, with a distribution rate for listed equity estimated from the financial statements of a subset of large listed firms, of which his estimate from the largest 20 ASX firms is one such estimate.[65] Hathaway has also implied that a large listed entity was a more appropriate benchmark.[66]

Lally considers the data from financial statements is of high quality given it is audited and subject to scrutiny in financial markets.[67]

Lally also considered that there is no necessity to combine estimates of the distribution rate and utilisation rate from the same dataset and good reason for not doing so.[68] This is because, even though the distribution rate may be estimated using market-wide data, it is, in principle, a firm-specific parameter. On the other hand, the utilisation rate is a market-wide parameter.[69]

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64 N. Hathaway, *Imputation Credit Redemption ATO data 1988–2011 Where have all the credits gone?,* September 2013, p. 8.

65 Lally, *Gamma and the ACT Decision*, May 2016, p. 4–6.

66 N. Hathaway, *Imputation Credit Redemption ATO data 1988–2011 Where have all the credits gone?,* September 2013, p. 42.

67 Lally, *Gamma and the ACT Decision*, May 2016, p. 26.

68 M. Lally, *Issues in the estimation of gamma*, April 2017, p. 13.

69 Lally's view on this issue appears consistent with the views of Gray. See Frontier Economics, *An appropriate regulatory estimate of gamma*, June 2015, pp. 12–13.

We note that Lally suggests, based on his preferred approach and estimate from the top 20 ASX firms, a distribution rate of at least 0.83 and hence a value of imputation credits of at least 0.50.[70] Based on the updated equity ownership data for the September quarter 2017 Lally's preferred approach and estimate for the distribution rate would give an estimate of the value of imputation credits of 0.54.

[70] M. Lally, *Gamma and the ACT Decision*, May 2016, p. 6.

4 Questions for discussion

For the purposes of the concurrent expert evidence session discussion of the value of imputation credits, we recommend the following questions would be useful:

1. What relative weights should be attached to the different data sources?

2. How likely is it that Franking Credits Redeemed/ Company Taxation Paid from ATO tax statistics would give a reliable estimate of the value of imputation credits for a benchmark firm?

3. What reliance should we place on tax statistics?

4. What role should the updated equity ownership data from the ABS have in informing the estimate of the utilisation rate used for estimating the value of imputation credits?

5. What regard should be given to Lally's preferred approach of using annual financial report data for a subset of large ASX listed firms (of which his estimate from the top 20 ASX firms is one such estimate) to inform the distribution rate of BEE?

6. What is a reasonable range for an estimate of the value of imputation credits given currently available empirical evidence (including the updated ABS data and Lally's estimate of the distribution rate based on data from the financial statements of the top 20 ASX listed firms)?

7. What point estimate of the value of imputation credits is appropriate given currently available empirical evidence (including the updated ABS data and Lally's estimate of the distribution rate based on data from the financial statements of the top 20 ASX listed firms)?

5 Bibliography

AER, Draft decision: Ausgrid distribution determination 2015-16 to 2018-19, Attachment 4: Value of imputation credits, November 2014

AER, Final decision: AusNet Services transmission determination 2017-22, Attachment 4—Value of imputation credits, April 2017

AER, Final decision: TransGrid transmission determination 2018-22, Attachment 4—Value of imputation credits, September 2017

AER, Rate of return guideline, December 2013

Federal Court of Australia, Australian Energy Regulator v Australian Competition Tribunal (No 2) [2017] FCAFC 79, May 2017

Federal Court of Australia, SA Power Networks v Australian Competition Tribunal (No 2) [2018] FCAFC 3, Jan 2018

Frontier economics, An appropriate regulatory estimate of gamma, June 2015

J. Handley, Report prepared for the Australian Energy Regulator: Advice on the value of imputation credits, September 2014

J. Handley, Report prepared for the Australian Energy Regulator: Further advice on the value of imputation credits, April 2015

M. Lally, Gamma and the ACT Decision, May 2016

M. Lally, Issues in the estimation of gamma, April 2017

M. Lally, Estimating gamma, November 2013

N. Hathaway, Imputation credit redemption ATO data 1988–2011: Where have all the credits gone?, September 2013

N. Hathaway, Imputation credit redemption ATO data 1988–2012: Where have all the credits gone? (draft), October 2014

R. Officer, 'The cost of capital of a company under an imputation system', Accounting and finance, vol. 34(1), May 1994

Tribunal decision in ActewAGL – re Application by ActewAGL[2017] ACompT 2, October 2017