Review of Inflation Public Forum

Sydney – 14 June 2017

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Outline

- Role of the CCP in this review
- Our thoughts on the two issues at hand:
    1. Does the current AER approach results in the best measure of expected inflation?
    2. Is inflation appropriately compensated for in the post tax revenue, roll forward and pricing models?
- Our approach is to ensure that we understand the position of the various stakeholders to assist us in framing our views of what is in the long term interests of consumers

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Role of the CCP in this review

- Specially constituted CCP sub-panel to provide a consumer perspective on the
  - Measurement of inflation, and
  - The treatment of inflation within the AER's PTRM, RFM and Pricing models

  In the context of the National Electricity and Gas Objectives relating to the long term interests of consumers

- The sub-panel:
  - Participates in workshops and this public forum
  - Liaises with the Consumer Reference Group
  - Provides a submission by 29th June
  - Continues to be involved in the process until the final decision, anticipated in November 2017

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Our approach today

- We are in the process of understanding the very complex issues involved and exactly what the parties, particularly the networks, are arguing
- We have yet to come to firm conclusions and to help us we provide some specific questions for both the AER and networks to assist us in our considerations
- We are open to change that will genuinely better contribute to the achievement of the NEO/NGO

- Our philosophical position is that there has to be a very good reason to change – as the ACT noted in the SA Power Networks decision:
  - *595   One immediate observation to make is that the rule makers sought to expressly include a PTRM in the NER, specified the matters it should contain and how the PTRM should be amended. Having gone to those lengths, there is a strong suggestion that the rule makers intended the PTRM to occupy a particular place in the scheme of regulation in the NER.*

  - *603   The drafting of r 6.4 also lends support to this view. First, cl 6.4.1(c) requires the PTRM to be "in force" at all times. It is not merely that the PTRM be available for use. **Secondly, the PTRM cannot be amended at a whim.** It can only be amended under the distribution consultation procedures. There would be little point in the rule makers establishing such a significant **"gatekeeping" requirement** if the PTRM were little more than a tool in which to submit a proposal. Finally, **the PTRM must establish a "method" that the AER determines is likely to result in the best estimates of expected inflation (cl 6.4.2(b)(1)). The requirement to establish a "method" is a far stronger and significant direction than simply to establish a tool by which to submit a proposal.***

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1. Does the current AER approach results in the best measure of expected inflation?

Inflation issues – do we have the correct understanding - 1?

Issue	The level of agreement between the networks and the AER?
1. Should CPI be the measure?	• Agreement that the CPI is the best measure given the AER criteria of "simplicity, relative timeliness and a high degree of credibility and familiarity" • Parties are not willing to consider a move to another measure eg PPI or GDP deflator measure because there are no forecasts and/or has a longer delay in publishing vs CPI
2. If CPI is the appropriate measure, do we agree with the criteria proposed by the AER to assess the different measures of expected inflation	Discussion Paper p. 20 proposes: • Relative congruence with the market expected inflation rate, and • Robustness, transparency, replicability and simplicity • What are the networks views?

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Inflation issues – do we have the correct understanding - 2?

Issue	The level of agreement between the networks and the AER?
3. While the nominal risk free rate of return is based on a 10 year government bond, should the expected inflation period also be 10 years or should it be 5 years to match the reset period?	• There seems to be broad agreement between the AER and the networks to retaining 10 years given it corresponds to the term of the CGS yields (equity) and BBB+ bond yield (debt) in the overall WACC
4. If we agree with the criteria, what is the "best" (most unbiased) measure of expected inflation?	• AER wishes to retain the current RBA based method • Some networks wish to go back to the approach used until 2008 using the bond yield breakeven method

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What is the best measure?

- All proposed measures have problems so we either:
  - Pick the method with the fewest problems and stick to it unless there is a really good reason to change, or
  - Change the regulatory structure so that a measure of expected inflation is not required for WACC calculations (commented on below) and eliminating asset revaluation/indexation
- At this stage we are reviewing the AER arguments in favour of continuing with the RBA method or proposing some variation eg combination of measures?
  - eg how important are the claimed biases?
  - Recognising that we are not experts in this field

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Some questions/propositions – 1

- The AER is required to estimate expected inflation from the investor perspective
  - We need to be careful about who is the arbiter of what investors want vs what they need to provide the required investment
- Estimates should have regard to "current market conditions" ie at a particular point in time - but with respect to long term investments
  - But to what extent do long term expectations vary with current market conditions
- We are looking for the best measure of expected inflation not the best estimates or forecast of actual inflation
- Given the perceived impact on reducing network revenues when the actual inflation rate is lower than the expected inflation rate
  - Would we be having this debate if the actual inflation rate was above the expected inflation rate and network revenues were higher than expected?
- Networks seem to be more concerned about the absolute size of the expected inflation number (and its impact on real WACC) than whether it is a good measure of expected inflation

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Some questions/propositions – 2

- The current AER method came about in 2008 from network concerns that the bond beak-even method was biased because of lack of liquidity for indexed bonds and hence overestimated inflation expectations

- Now the networks are arguing that:
  - The previous biases in the bond break-even method have disappeared given their current liquidity
  - This means it is a better estimate of expected inflation
  - Because the AER's approach gives a higher measure of expected inflation it is an over-estimate

- Inevitably over time different measures will raise concerns in particular stakeholders minds
  - so will this debate repeat itself every 5-7 years depending on what approach the networks seems to benefit from?
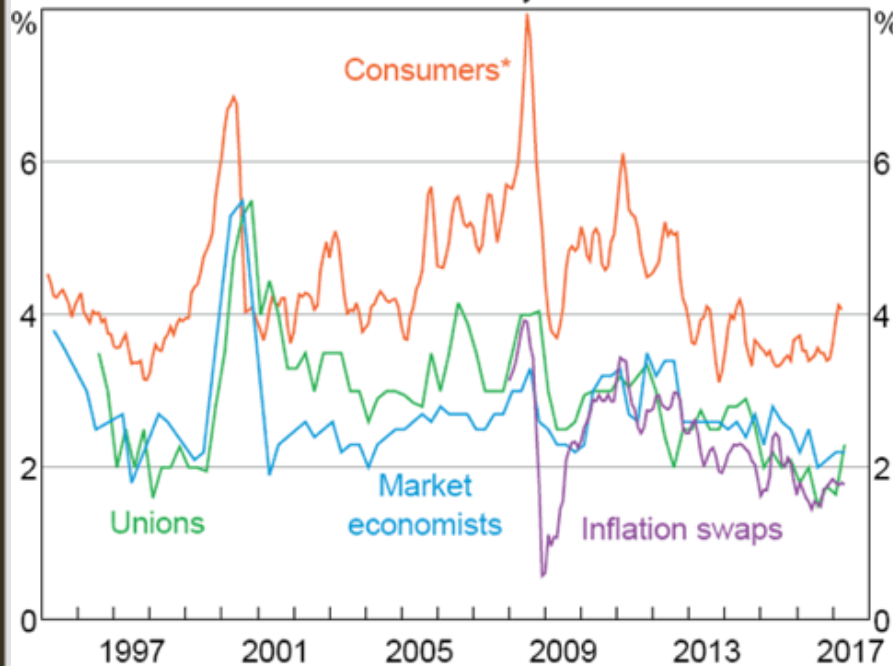
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Some questions/propositions – 3

- We see merit in having a consistent approach over time – not something that changes every 5 or so years
  - Consumers require a high level of certainty before a permanent change in approach/debt issue has indicated the real risks associated with changing methodology
- Then what is the basis for making substantial changes and introducing new risks based on what may be (relatively) short term events?
  - the AER (and others) argue that investor long term expectations are more anchored in the RBA range
  - we understand the argument that the recent period of low inflation below the RBA 2-3% range and the expectation that this is likely to continue until at least 2018/19 *could* lead to a fundamental change in 10 year inflationary expectations and this change
  - While the liquidity biases in the bond break-even approach may have reduced biases are still there and what guarantee do we have that they will not reappear in the near future eg when the Government reduces its bond issuance programme and liquidity issues re-appear?
  - We have seen a recent increase in the swap market measure and this is historically relatively close ot the RBA based measure
  - Economics and finance are full of these types of disagreements about long (and short) term market efficiency
- So an important issue is whether the variations from using one or another method will even out over multiple regulatory periods
  - we comment on this below

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Imagine we were back in 2007 and having this debate

Short-term Inflation Expectations — Over the next year. Sources: Australian Council of Trade Unions; Bloomberg; Melbourne Institute of Applied Economic and Social Research; RBA; Workplace Research Centre. * Smoothed.

Long-term Inflation Expectations. * Average over the next five to ten years. ** Average over six to ten years in the future. *** Five-to-ten-year forward. Sources: Australian Council of Trade Unions; Bloomberg; Consensus Economics; RBA; Workplace Research Centre; Yieldbroker.
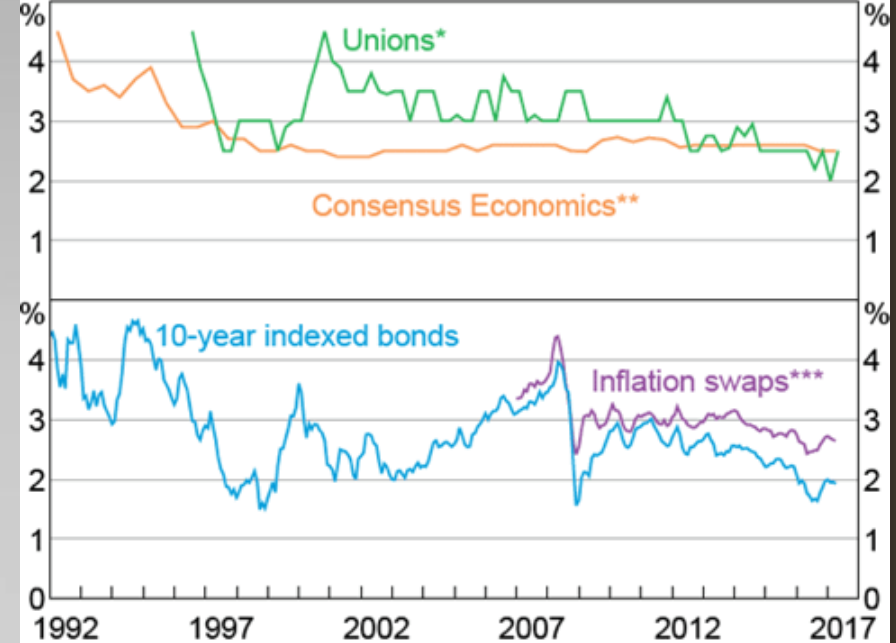
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So some questions to the AER

We wonder if the inflation swaps approach (AER's second choice) has been sold short

- <u>Hedging costs</u> – overseas academic literature suggests these costs are minor – what about Australian empirical data?

- <u>Inflation risk premia</u> – yes they exist (reference to a 1994 US study) but where is the local data on their size?

- <u>Inflation indexation lag</u> – "This bias is potentially small due to the short lag on indexed CGS and is not likely to be time varying" (Regulatory Treatment of Inflation Discussion Paper p. 30)

- <u>Counterparty default risk</u> – "In Australia, most inflation linked swaps are collateralised which is likely to mitigate the size of the counterparty default risk premia" (Working Paper 11 p. 76)

- <u>Liquidity premia</u> – "Observations of Australian data suggests that this liquidity premia may be negligible" (Regulatory Treatment…p.30)

So we think there would be benefit in more empirical analysis of Australian data and discussions with market participants.

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And to the networks

1. If you argue that financial markets are efficient then

- why to premia exist to cover participant risk?

- Why do you think that the market for bonds is more efficient than the market for interest rate swaps?

  - In 2009 IPART concluded that the swaps market was more efficient indicator and then changed in 2014 to the AER methodology

2. How do you address the issue that while the liquidity biases in the bond market might be low today that they may not increase over the next 10 years as the Government's bond buying programme changes?

  - Both political parties like to trumpet how soon they bring the budget back into surplus

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2. Is inflation appropriately compensated for in the post tax revenue and roll forward models?

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Some initial thoughts

- The AER's model is designed to ensure that the utility can achieve its **real** WACC ie the calculated nominal WACC based on market expectations less the AER's measure of expected inflation

- We understand the networks may be concerned that if the AER expected inflation is "too high" then the resulting real WACC will be "too low" and hence their required revenue stream estimate will be "too low"

- But Networks have also suggested that they may be adversely affected if actual inflation is below expected inflation.

- Our preliminary analysis suggests that
  - A lower inflation assumption at the start of the period can substantially increase prices and expected profits
  - But differences between actual and expected inflation in the period do not affect prices, revenues or profits in real terms

- Hence the key issue is not whether the assumed inflation is a good predictor of inflation but whether it is a good proxy for actual inflation expectations

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For example the current Electranet 2019-2023 proposal

- It proposes an expected inflation rate of 1.97% using the break-even method vs the RBA method giving ~2.45%

- This results in an increase in revenue of ~$77m or 4.74% (real)

- Preliminary analysis using the PTRM linked to the RFM indicates that **differences between the actual and expected inflation do not have a significant effect on real revenues and prices**.

- We are interested to hear the results of networks/ modelling over more than one period. The next slides provide our assessment using the PTRM and RFM

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Impact of lower inflation assumption

- While the common understanding is that PTRM uses a nominal WACC and models costs and revenues in nominal terms, it in fact operates so as to ensure expected real prices and revenues will ensure the real return determined at the start of the regulatory period will be achieved.

- The lower inflation assumption results in a higher real WACC. As a result:
  - The RAB is lower in nominal terms due to the impact of inflation on the indexation of the RAB and expected (nominal) capex. It is however, be the same in real terms.
  - The regulatory depreciation will be higher in nominal terms due to the smaller deduction to offset the indexation of the RAB, partially offset by the smaller nominal RAB. It will still be higher in real terms.
  - The MAR will be higher in nominal terms due to the increase in the regulatory depreciation offset by a slight reduction in the nominal return on assets (in $'s not as a % of the RAB) due to the lower nominal value of the RAB. Due to the lower inflation assumption the real WACC will be higher (in $'s and as a % of the RAB).

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Modelling of lower inflation assumption

- Model used:
  - **https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-distribution-december-2016-amendment/initiation**.

- Assumptions:

	Base Case	Low Inflation
Nominal WACC	7.62	7.62
Inflation Expectations	2.5	2.0
Real WACC	5.0	5.51
Actual Inflation	2.5	2.0

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Results

Base Case

Nominal values	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6 (next reg per.)
MAR	88.6	98.1	107.8	117.8	127.9	138.4
Reg Depreciation	9.5	11.6	13.9	16.4	19.1	22.6
Closing RAB	1134.3	1231.6	1329.5	1427.6	1525.9	1624.2
MAR (real)	86.5	93.4	100.1	106.7	113.1	119.3
Reg Depreciation (real)	9.3	11.0	12.9	14.8	16.9	19.0
Closing RAB (real)	1106.6	1172.3	1234.5	1293.3	1348.7	1400.5

Low Inflation

Nominal values	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6 (next reg per.)
MAR	93.6	103.0	112.6	122.3	132.1	142.1
Reg Depreciation	14.5	17.0	19.6	22.5	25.5	28.6
Closing RAB	1128.7	1219.6	1310.1	1399.9	1489.0	1577.2
MAR (real)	91.8	99.1	106.1	113.0	119.7	126.2
Reg Depreciation (real)	14.2	16.3	18.5	20.7	23.1	25.4
Closing RAB (real)	1106.6	1172.3	1234.5	1293.3	1348.7	1400.5

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Impact of difference between actual and assumed inflation

- NSPs have raised concerns that:
  - at the start of the period deduction from depreciation = RAB indexation; but
  - at the end of the period the RAB is indexed for actual inflation but no adjustment is made to the depreciation deduction
  - NSP may be worse off if actual inflation is less than assumed
- But this ignores the effect of indexing prices for actual inflation.
  - All components of forecast revenues are reflect assumed inflation at start of period
  - During the period total revenue – **and hence all components** – are adjusted for actual inflation, including depreciation
  - **Hence there is no inconsistency** (except year 1)

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Modelling of difference between actual and forecast inflation

- Model used:
  - **https://www.aer.gov.au/networks-pipelines/guidelines-schemes-models-reviews/roll-forward-model-distribution-december-2016-amendment/initiation**.
- Assumptions

  Base Case (scenario 1 in model)
  - Assumed inflation 2.5%
  - Actual inflations 2.5% in each year
  - Outcomes for approach B (current AER approach examined)

  Scenario – actual inflation less than assumed (scenario 5)
  - Assumed inflation 3.5%
  - Actual inflations 2.5% in each year
  - Outcomes for approach B (current AER approach examined)

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Base Case

Closing RAB (PTRM)	1037.4	1134.3	1231.6	1329.5	1427.6	1525.9	1624.2	1722.3	1820.2	1917.5	2014.1
MAR (PTRM)		88.6	98.1	107.8	117.8	127.9	138.4	149.0	159.9	171.0	182.4
MAR (Pricing)		**88.6**	**98.1**	**107.8**	**117.8**	**127.9**	**138.4**	**149.0**	**159.9**	**171.0**	**182.4**
Opening RAB (RFM)		1037.4	1134.3	1231.6	1329.5	1427.6	1525.9	1624.2	1722.3	1820.2	1917.5
Capex (RFM)	1024.7	106.3	109.0	111.7	114.5	117.4	120.3	123.3	126.4	129.6	132.8
Reg Depreciation (RFM)		9.5	11.6	13.9	16.4	19.1	22.0	25.2	28.6	32.2	36.2
Closing RAB (RFM)	**1037.4**	**1134.3**	**1231.6**	**1329.5**	**1427.6**	**1525.9**	**1624.2**	**1722.3**	**1820.2**	**1917.5**	**2014.1**
Cash Flow	-1037.4	-17.7	-10.9	-3.9	3.2	10.6	18.0	25.7	33.5	41.5	49.6
NPV overall	0.00										

NB: NPV is over multiple regulatory periods not shown

Actual below assumed inflation

Closing RAB (PTRM)	1037.4	1145.3	1255.8	1368.8	1484.1	1601.8	1640.0	1756.1	1874.0	1993.4	2114.3
MAR (PTRM)		89.5	100.0	111.0	122.4	134.3	139.7	151.9	164.6	177.8	191.4
MAR (Pricing)		**89.5**	**99.1**	**108.9**	**118.9**	**129.2**	**139.7**	**150.5**	**161.5**	**172.7**	**184.2**
Opening RAB (RFM)		1037.4	1134.3	1231.6	1329.5	1427.6	1525.9	1624.2	1722.3	1820.2	1917.5
Capex (RFM)	1024.7	106.3	109.0	111.7	114.5	117.4	120.3	123.3	126.4	129.6	132.8
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Closing RAB (RFM)	**1037.4**	**1134.3**	**1231.6**	**1329.5**	**1427.6**	**1525.9**	**1624.2**	**1722.3**	**1820.2**	**1917.5**	**2014.1**
Cash Flow	-1037.4	-16.9	-9.9	-2.9	4.4	11.8	19.4	27.1	35.1	43.1	51.4
NPV overall	17.94										

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Analysis of results

- Based on the concerns of NSPs a negative impact was expected (i.e. negative NPV)

- But it is slightly positive. Why?
  - This is due to the first year effect. Revenues in the first year of the period are set in nominal terms based on forecast inflation and not adjusted for actual inflation

- Key points to note:
  - RAB in the RFM reflects actual inflation only.
  - Actual inflation is the same in the scenarios, RAB is the same
  - Difference between prices modelled at start (MAR PTRM) and actual prices (MAR Pricing) reflects difference between forecast and actual inflation applied to all revenue – including depreciation allowance.

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Is an alternative for networks to receive a nominal return?

- Some stakeholders are starting to think about the potential for moving from a CPI-X framework to a "X" framework so that
  - Consumers' prices do not vary with inflation and are fixed in nominal terms with networks taking the inflation risk
  - So we do not need to worry about measuring expected inflation and networks take inflation risk

- We suggest resolving the issue around expected inflation first given the complexities in considering an "X" framework
  - Just imagine the rule change process!
  - What would be the impact on RAB valuation and past indexation?

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Summary

- We need to see a strong reason for change – not just "expectations based on one market measure have changed in the last two years so we need to have a fundamental change"

- Questions for both the AER and the networks to help our understanding of why they propose their particular approaches

- But given the interaction of the PTRM/RFM/pricing models – does it really matter?

- Comments / suggestions for the CCP can be sent via RateOfReturn@aer.gov.au

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