



DRAFT RORI EXPLANATORY STATEMENT

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Overview

- **Long-term floating-rate bond analogy**
 - The analogy does not support the term-matching proposal in the *Draft Explanatory Statement*
 - The required yield on a long-term risk-free bond with 5-yearly coupon resets is likely to be materially higher than the 5-year risk-free yield
- **Assessment of the Wright approach**
 - Section 7.2.3.1 of the *Draft Explanatory Statement* is not a fair or reasonable assessment of the Wright approach
 - Section 7.2.3.1 should be given no weight when the *Final RoRI* is made

QTC's role

- QTC is the Queensland Government's central financing authority. QTC:
 - currently has \$99.7 billion of nominal fixed-rate bonds and \$13.9 billion of nominal floating-rate bonds on issue
 - buys high quality bank and corporate floating-rate bonds for the \$9.7 billion QTC Capital Guaranteed Cash Fund
 - is an active participant in the Australian interest rate swap market, and
 - is a member of the Australian Financial Markets Association Swap Committee
- QTC provides debt funding to Energy Queensland Limited and Powerlink



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LONG-TERM FLOATING RATE BOND ANALOGY

Floating-rate bond analogy

A requirement for the term-matching proposal

- Based on advice from Dr. Lally, the AER now views regulated equity as a long-term floating rate bond with a coupon that is reset at the start of each 5-year regulatory period to equal the 5-year risk-free rate
- The floating-rate bond analogy avoids the assumption that investors receive an amount equal to the residual RAB *in cash* at the end of the regulatory period
- This assumption is one of the reasons why term-matching was not adopted in the 2013 RoRG and the 2018 RoRI

Floating-rate bond analogy

... we contemplated a long-term floating-rate bond that used a five-year CGS yield as a benchmark for the risk-free rate in the CAPM with the CAPM equity risk premium added to the benchmark.

- Based on the above, what the AER contemplated as the risk-free yield in the allowed return on equity is the required yield on a long-term risk-free floating-rate bond (ie, CGS) with a coupon that is reset every five years to equal the prevailing 5-year risk-free rate (ie, CGS yield)

Floating-rate bond analogy

- QTC does not consider regulated equity to be the same as a long-term floating-rate bond, and the analogy is not useful when determining how the allowed return on equity should be calculated
- For example, the floating-rate bond contemplated by the AER does not exist (which is informative) so the required yield cannot be observed
- However, a ‘package’ of instruments that do exist can be used to replicate the cash flows on the AER’s floating-rate bond
- The cash flows can be used to estimate the coupon and trading margin that would likely apply if the Commonwealth sought to issue a CGS with the same features as the AER’s floating rate bond

Coupon and trading margins

Real-world parameters for all floating-rate bonds

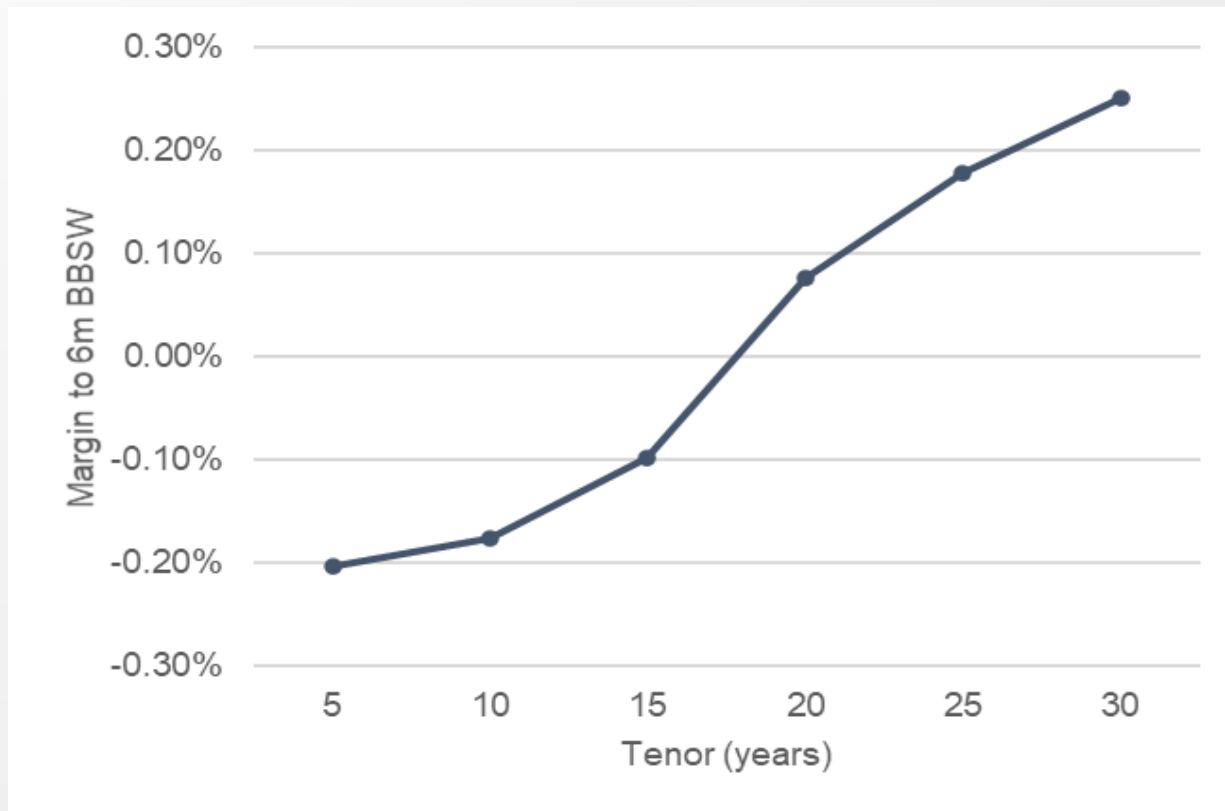
- **Coupon margin:**
 - fixed for the term of the floating-rate bond term (ie, an annuity)
 - added to the base yield to determine the total coupon
- **Trading margin:**
 - added to the base zero coupon yield curve to determine the discount factors to calculate the present value of the known cash flows, and the outstanding principal balance at the end of the current coupon period
 - the known cash flows include the coupon margins that will be received *after* the end of the current coupon period
- The floating-rate bond will be priced at par on a reset date, and at inception, if the coupon margin equals the trading margin

Coupon and trading margins

- The AER's floating-rate bond pays a coupon that is reset every 5 years to equal the prevailing 5-year CGS yield
 - This implies a coupon margin of zero relative to the 5-year CGS base yield
- The AER assumes the floating-rate bond is priced at par on each coupon reset date
 - This implies a trading margin of zero relative to the CGS yield curve
- If the above is correct, the total cost of a 25-year CGS with 5-yearly coupon resets is *exactly the same* as the total cost of issuing a 5-year CGS and having to refinance four times during the same 25-year period
 - Refinancing risk reduced at no cost = the Holy Grail for borrowers

Reducing refinancing risk is not free

Trading margin term structure for floating-rate CGS



Average monthly margins between October 2016 and July 2022

CGS swap package

A way to estimate the trading margin

- CGS swap package transactions:
 - issue a 25-year fixed-rate CGS at par
 - enter into a 25-year swap to receive fixed / pay 6-month BBSW
 - enter into a 5-year swap to pay fixed / receive 6-month BBSW today and at the end of year 5, 10, 15 and 20
- The first two transactions create a standard 25-year floating-rate CGS
- Each 5-year swap locks in a fixed base yield and nets out the 6-month BBSW cash flows for the corresponding 5-year coupon period

CGS swap package

Worked example – first 5 year period

TABLE 1: CGS AND SWAP PAR YIELDS – 17 AUGUST 2022

Tenor	CGS par yield (%)	Swap par yield (%)	CGS/swap par spread (%)
5 year	3.11	3.55	-0.44
25 year	3.68	3.60	+0.08

Source: QTC yield data and calculations

TABLE 3: CGS SWAP PACKAGE CASH FLOWS USING A 5-YEAR CGS BASE YIELD

Cash flows	Pay (%)	Receive (%)	Net payment (%)
Floating	6m BBSW + 0.08	6m BBSW – 0.44	0.52
Fixed	3.11	---	3.11
Total	6m BBSW + 3.19	6m BBSW – 0.44	3.63

The AER's floating-rate bond

- If the Commonwealth sought to issue a CGS with the same features the AER's floating-rate bond, the trading margin at inception must be consistent with the expected cost of the 25-year CGS swap package
 - The CGS swap package is a market-based alternative for the Commonwealth and investors, so it is the benchmark for pricing
- As shown in our submission, the estimated trading margin equals
 - the fixed margin on a 25-year floating-rate CGS, minus
 - the average expected 5-year CGS/swap spread on the five reset dates
- For the CGS to be priced at par at inception, the fixed coupon margin must equal the trading margin

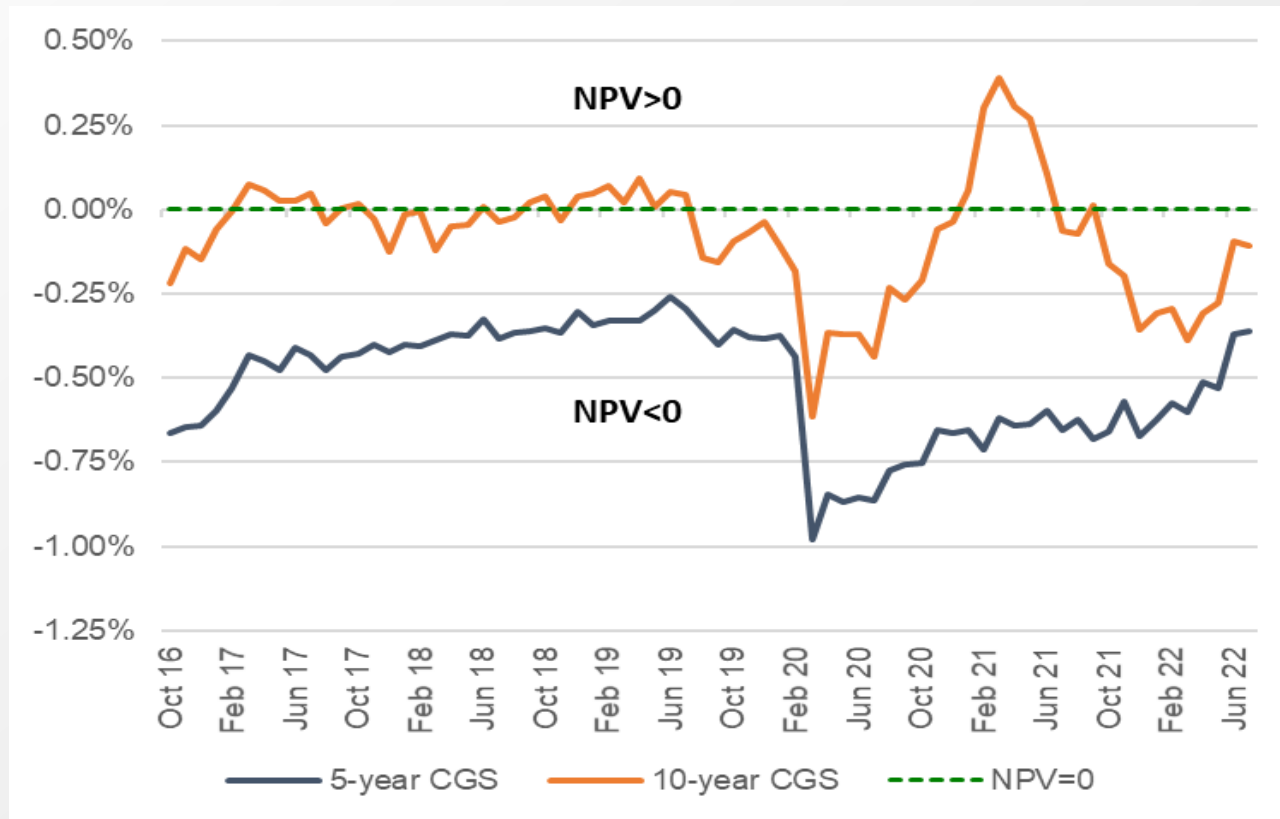
The AER's floating-rate bond

Estimated trading margins (average = 0.51 per cent)



NPV outcomes

10-year CGS as a proxy for the required yield



Based on monthly margin estimates between October 2016 and July 2022



ASSESSMENT OF THE WRIGHT APPROACH

Assessment of the Wright approach

- Section 7.2.3.1 of the *Draft Explanatory Statement* is not a fair or reasonable assessment of the Wright approach
- The assessment has been provided more than one year after the AER first made a commitment to consider the theoretical and empirical basis for the Wright approach
- As a consequence, stakeholders only have one opportunity to respond to the assessment before the *Final RoRI* is made

Assessment of the Wright approach

‘Subject to debate’ as an assessment criterion

- Some aspects of the Wright approach are criticised because they are ‘subject to debate’
- Most important topics in asset pricing are subject to ongoing debate by practitioners and academics, so this is not a useful criterion to determine the weight for any estimation approach
- A debate also implies there are at least two sides to be considered, however Section 7.2.3.1 does not identify a single point in favour of giving some weight to the Wright approach
- This is inconsistent with the advice already provided to the AER by Lally and CEPA, which supports giving weight to the Wright approach

Assessment of the Wright approach

The ‘Siegel’s Constant’ has been subject to debate, for instance:

- *Dimson, Marsh and Staunton (2001) argue that the Siegel’s Constant is not a global phenomenon.*
 - *Lettau and Ludvigson (2005) explicitly reject constant expected return.*
-
- Submitting two dots points as evidence without providing any context or further explanation does not represent a genuine attempt to fully engage with the findings in the research cited
 - Lettau and Ludvigson actually find that expected *excess returns* display countercyclical time-variation

Assessment of the Wright approach

Extreme interpretation of the empirical evidence

- The empirical evidence in the *Draft Explanatory Statement* shows that the real return on equity in Australia is stationary
- However, the AER has proposed zero weight for the Wright approach because real returns are more variable than excess returns
- The standard deviation of the rolling 30-year averages in the *Draft Explanatory Statement* are 1.60 per cent and 0.87 per cent respectively
- Inverse volatility weighting gives 35 per cent weight to Wright approach and 65 per cent to the HER approach

Assessment of the Wright approach

An appropriate course of action

- QTC considers the most appropriate course of action for the AER when making the *Final RoRI* is to:
 - place no weight on Section 7.2.3.1 of the *Draft Explanatory Statement*, and
 - follow the advice already provided by Lally and CEPA and give meaningful weight to the Wright approach
- A weighted average of the HER and Wright approaches can be combined with the implied MRP from the calibrated DGM to calculate the expected MRP in the *Final RoRI*

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