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Mr Warwick Anderson
General Manager, Network Finance and Reporting
Australian Energy Regulator
GPO Box 520, Melbourne Vic 3001

Lodged by email: [redacted]

25 November 2022

Dear Mr Anderson

APA submission on the alternative options for estimating the market risk premium

On 2 November 2022, the Australian Energy Regulator started a consultation process to consider the alternative options for estimating the market risk premium (MRP).

APA thanks you for the opportunity to comment on the draft instrument.

APA is an ASX listed owner, operator, and developer of energy infrastructure assets across Australia. Through a diverse portfolio of assets, we provide energy to customers in every state and territory in Australia. As well as an extensive network of natural gas pipelines, we own or have interests in gas storage and generation facilities, electricity transmission networks, and over $750 million in renewable generation.

APA's submission is attached for your consideration.

This submission does not contain confidential information and may be published by the Australian Energy Regulator.

If you wish to discuss our submission in further detail, please contact Ignatius Chin on [redacted] or [redacted]

Sincerely

[redacted]

Edward Stephan

General Manager Economic Regulatory and External Policy

always powering ahead

APA submission

Draft 2022 Rate of Return Instrument

Market Risk Premium sample period

25 November 2022

1 Introduction

This document sets out the APA's view on the Australian Energy Regulator's (AER's) consultation on the Market Risk Premium (MRP) sample period.

Section 2 sets out the APA's view.

Section 3 provides the relevant background information.

APA's view is informed by its assessment as set out in Section 4.

2 APA's view

An unconditional estimate of the MRP requires, for its estimation, an Historical Excess Return (HER) series which commences long before 1988 (and before 1972).

APA considers it ambiguous as to whether the AER is adopting the unconditional mean approach. This is because:

- In the *Draft Rate of Return Instrument Explanatory Statement* (page 129), the AER stated that it "should continue with the unconditional MRP because [AER] do not know how to estimate the conditional risk premium with any precision and trying to do so could introduce more noise and error in the process".
- Yet, the in the *Draft Rate of Return Instrument*, the AER uses HER series from 1988.

All Options 1 to 4 produce a conditional estimate of the MRP because they use a short HER series which commences in 1988.

Adoption of Option 4 would use the most recent excess returns data to make an estimate of the MRP reflective of current market conditions. This would also effectively produce a conditional estimate of the MRP and not the unconditional estimate which estimation using HER is intended to provide.

If the AER now intends the estimate of the MRP to be a conditional estimate, that estimate should be made using the dividend growth model, and it should be updated throughout the period of the 2022 Rate of Return Instrument.

If the AER intends to use the unconditional mean approach for estimating the MRP, an HER series should commence long before 1988 (and before 1972).

In addition, APA considers:

- Adoption of Option 1 would ignore current market data, but continue past practice, ensuring certainty and predictability in the regulatory process.
- Adoption of Option 2 would arbitrarily remove excess returns data for three years from an already short data series, potentially biasing the MRP estimate.
- Option 3 has been made redundant by the AER's decision to delay publication of the 2022 Rate of Return Instrument until February 2023.

3 Background

On 2 November 2022, the AER announced that, as recommended by the Independent Panel, it had sought expert advice to consider the extent to which some of the rate of return parameters may have been impacted by the low interest rates and quantitative easing which is now being unwound. The AER sought this advice from the Reserve Bank of Australia (RBA) and the Australian Commonwealth Treasury (The Treasury).

Having regard to the advice, the AER is now conducting a public consultation which focuses on four options for Market Risk Premium (MRP) estimation from historical excess returns (HER). These options are:

- **Option 1:** No change from the current approach as set out in the Draft Rate of Return Instrument as published on 16 June 2022. This approach uses HER data to December 2021;
- **Option 2:** Use HER data to December 2019 (with no use of data for 2020-2022, the period of the Covid-19 pandemic, which may be affected by RBA quantitative easing and its subsequent unwinding);
- **Option 3:** Use HER data to September 2022;
- **Option 4:** Use HER data to December 2022, which would require either:

    (i) delaying finalisation of the 2022 Rate of Return Instrument until data for December 2022 became available; or

    (ii) including a formula in the 2022 Rate of Return Instrument to allow a mechanical calculation of an MRP estimate from HER once data for 2022 had been published.

On 14 November 2022, AER announced that it had decided to delay the publication of the 2022 Rate of Return Instrument until February 2023.

Delaying the publication of the 2022 Instrument should ensure that data are available for the AER's estimation of the MRP using excess returns to December 2022.

This delay means Option 4(ii) is now redundant. That is, Option 4 reduces to: use HER data to December 2022.

4 APA's assessment

4.1 Should MRP estimation use HER data to December 2021 (Option1)?

- Adopting this option promotes stability of process which in turn preserves stakeholder confidence in the process.
- On the other hand, this option means the AER will not be using the latest available data for estimating the MRP.

Stakeholders have previously advised that they value stability of process, and this value of stability has been acknowledged by the AER. Stability of process enhances stakeholder confidence through the way it imparts a degree of certainty and predictability to regulatory outcomes, thereby reducing the risks to which stakeholders would otherwise have been exposed.

If stability of process is valued, then there is a case for continuing the current approach, which uses HER data to December 2021, to estimate the MRP.

Against this, by the time the draft 2022 Rate of Return Instrument was issued and the Independent Panel was preparing its report, the data available were indicating that the year-on-year change in the market total return index had reached a peak in December 2021 and was declining. An MRP estimate made using HER data to December 2021 may not reflect current market conditions. This has further implications, which we consider in our assessment of Option 4 below.

4.2 Should MRP estimation use HER data to December 2019 (Option 2)?

- Using HER data only to 2019 would arbitrarily remove excess returns data for three years, and potentially bias the MRP estimate.
- There is also no justification for shortening the HER sample period to end in 2019.

APA considers that using HER data only to 2019 would arbitrarily remove excess returns data for three years from an already short data series (from 1988), potentially biasing the MRP estimate.

In addition, there is no justification for shortening the HER sample period to end in 2019 when estimating the MRP for the 2022 Rate of Return Instrument.

In particular:

- The Treasury's advice does not justify shortening the data series;

- Papers referred to by The Treasury do not justify shortening the data series;
- History shows that the market is volatile by nature. There is nothing special about the last economic shock, and the corresponding quantitative measures, that deserves special treatment of the economic data during the relevant period for the purpose of estimating the MRP.

4.2.1 Treasury's advice does not justify shortening the data series

In July 2022, the Independent Panel recommended that the AER gives further consideration to whether the RBA's monetary policy response to the Covid-19 pandemic had led to high equity returns which were not representative of those returns over the long term.

The AER sought expert advice and, in a letter dated 26 October 2022, The Treasury advised:

- the RBA's monetary policy response to the pandemic (quantitative easing) was likely to have increased HER in 2020 and 2021; and
- measured excess returns were likely to decline with the subsequent unwinding of that quantitative easing.

Shortening the HER sample period to end in 2019 was, The Treasury proposed, a simple way of reducing any possible bias in the measured HER.

APA notes that The Treasury qualified its advice by stating that it "has not conducted analysis of changes in the equity market risk premium in Australia from late 2018 to now".

This means The Treasury has not provided the advice based on analysis of data for the period which the AER is seeking to exclude. The Treasury's advice does not prove that inclusion of data for 2020-2022 would bias the measured HER.

4.2.2 Papers referred to by The Treasury do not justify shortening the data series

None of the papers listed in Attachment B to The Treasury's letter to the AER examined the equity market implications of the RBA's strategy of quantitative easing and its unwinding, or the implications of the that strategy for the Australian equity market.

Among the papers listed which examined equity market implications, the paper by Kapp and Kristiansen noted that unconventional monetary policy in the euro-area in 2014 appeared to have an insignificant effect on the Equity Risk Premium (ERP). This ERP effect was a net impact of various policy interventions. Some of these policy interventions have significant positive impact on the ERP while some have negative effects. They way a policy

intervention was communicated to the financial market also had an impact on the ERP.[1]

The implication of the Kapp and Kristiansen paper is that the specific policy intervention actions taken by the RBA for Australia needs to be assessed in its own context – rather than relying on the context of other economic regions.

In 2020 and 2021, the RBA purchased specified fixed quantities of Australian Government bonds and, in this respect, its strategy was similar to that of other central banks. However, the RBA also made bond purchases specifically targeting the yield on Australian Government bonds with terms to maturity of three years. This yield curve control response to the Covid-19 pandemic was unique to Australia.[2]

Without specific assessment of RBA's strategy for Australia, on the ways in which the RBA communicated its strategy, and on the specific effects of that strategy across markets for financial assets, little can be said about the impact of quantitative easing and its unwinding on HER and on an HER-based estimate of the MRP in the Australian context.

4.2.3 There is nothing special about the last economic shock and the corresponding quantitative measures

In Figure 1 below we plot the Historical Excess Return (HER) from the AER's November 2022 HER spreadsheet.

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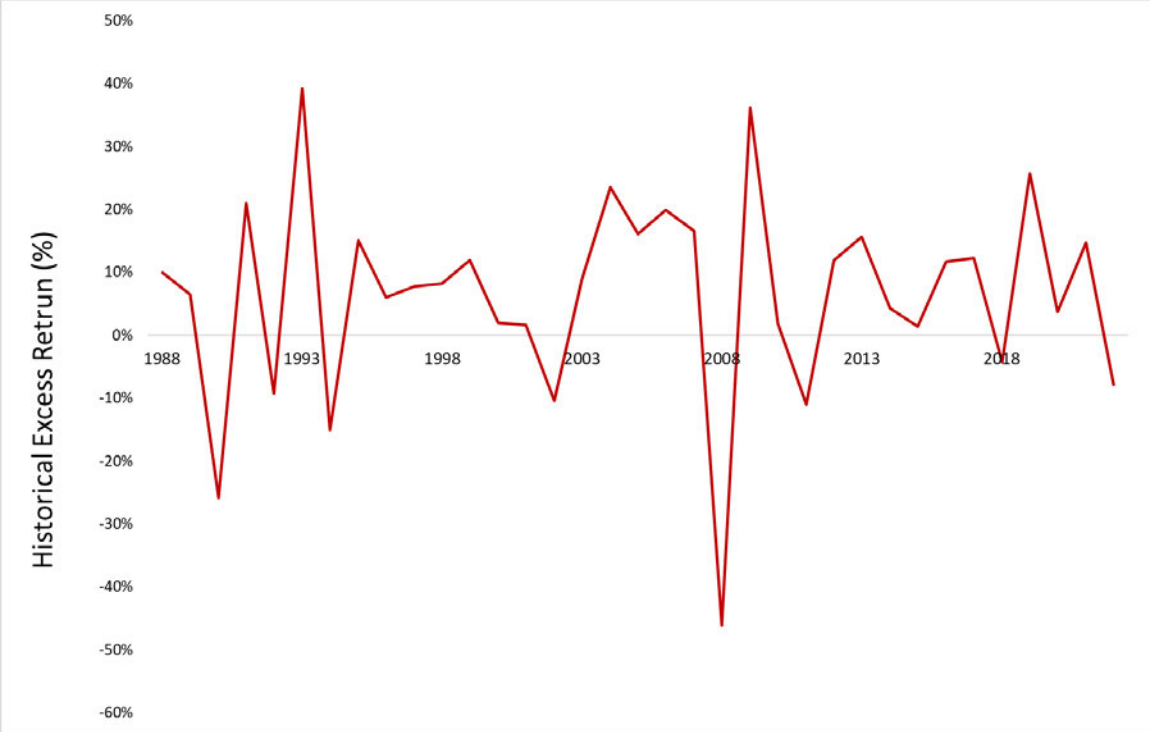
1 Daniel Kapp, Kristian Kristiansen, "Euro area equity risk premia and monetary policy: a longer-term perspective", European Central Bank Working Paper Series, No. 2535, April 2021.

2 The RBA's yield curve control (YCC) was examined in a Federal Reserve Bank of New York staff report (David O. Lucca and Jonathan H. Wright, "The Narrow Channel of Quantitative Easing: Evidence from YCC Down Under", April 2022) which, among other things, concluded that yield curve control had only limited spillovers on the prices of other financial instruments.

Figure 1: Historical Excess Return



The above figure shows that the market (and therefore the HER) is volatile by nature and is subject to various economic shocks. The Covid-19 pandemic seems to have been one of a number of shocks which have affected equity returns since 1988. Those shocks include (most obviously) the 1990-1991 Gulf War, recession in Australia and in most industrialised countries in the period around 1991 (to which higher oil prices attributable to the Gulf War may have contributed), and the 2008-2009 Global Financial Crisis. Australian equity returns also fell in 2002, coincident with sharp falls in equity markets in North America, Europe and Japan

The HER (and equity market) may have been affected by the Covid-19 pandemic. The impact may not have solely been affected by quantitative easing and its unwinding, as illustrated by the following recent chain of events:

- By March 2020, once the potential effects of Covid-19 were understood, and extended periods of lockdown were being imposed by State Governments, business profit expectations were likely to have been revised downward.
- However, by the beginning of 2022, the RBA was advising that the Australian economy had "bounced back strongly" from the lockdowns, and a significant risk of an upswing in global inflation was emerging.[3] Inflation had

[3] RBA, *Statement on Monetary Policy*, February 2022.

reached the mid-point of the RBA target range for the first time in over seven years.

- In its May 2022 *Statement on Monetary Policy*, the RBA advised that, globally, bond yields were rising as the inflation risk was recognised, and equity prices were declining as market participants continued the downward revision of their profit expectations.
- By November, the RBA was warning that growth in the global economy was expected to slow significantly, in part as a result of increases in policy interest rates to combat inflation and also, in part, due to rising energy prices (to which the Russian invasion of the Ukraine was contributing).

To the extent that quantitative easing and its unwinding did have effects, those effects may have been superseded, initially, by the effects of policy measures to address rapidly rising inflation and, subsequently, by expectations of declining economic growth. Global recession is now widely anticipated.

Hence, inspection of the HER data does not reveal anything special about the data for the 2020-2022 period to warrant its special treatment for the purpose of estimating MRP, even though quantitative easing and its unwinding occurred within this period.

4.3 Should MRP estimation use HER data to September 2022 (Option 3)?

Delaying publication of the 2022 Instrument until February 2023 has made redundant the option of using HER data only to September 2022.

If the HER sample period is to be extended from December 2021, APA sees no reason for extending the period only to September 2022 now that the AER has decided to delay publication of the 2022 Rate of Return Instrument to a time when December 2022 data should be available.

Delaying publication of the 2022 Instrument until February 2023 has made redundant the option of using HER data only to September 2022.

4.4 Should MRP estimation use HER data to December 2022 (Option 4)?

- The unconditional estimate should be a stable long-term average reflecting an underlying constant MRP. Underlying constant MRP is only achievable if the data series is large enough. Using the shortened data series (i.e., from 1988), additional of an extra year of data point significantly change the average HER. This is because the data series is too short.
- Long data series (i.e., from 1883) can be adopted for the purpose of producing a stable long-term average if the data is stationary. Dr Lally

has concluded that the HER data series is mean-stationary. Hence, the unconditional mean with the full data series can be adopted for the purpose of estimating MRP.

- It is ambiguous as to whether the AER intends to adopt the unconditional or conditional mean approach for estimating the MRP. By extending the HER data series to include December 2022 data, to take into account the recent economic condition, the AER seems to be adopting the conditional mean approach. If this the intended approach of the AER, then a way of doing so is to adopt the dividend growth model, and periodically update the MRP using the model to reflect the latest economic conditions. Otherwise, the unconditional mean requires the full HER data series to be used for estimating the MRP.

4.4.1 Unconditional mean should use large series of HER data

The AER's decision to delay publication of the 2022 Rate of Return Instrument makes possible use of the excess returns data for 2022 in MRP estimation.

Use of the one more year of excess returns data might be considered as ensuring that the MRP estimate is reflective of current market conditions. However, an MRP estimate which is reflective of current conditions is not the intended unconditional estimate to be made using an average of HER.[4] The unconditional estimate should be a stable long-term average reflecting an underlying constant MRP.

If the addition of one more year's excess return data - the data for 2022 - leads to a change in the estimate, the AER's method of estimation of an unconditional MRP is called into question. The addition of the excess returns data to September 2022 is signalling such a change: it is indicating that the AER's HER sample - from 1988 to September 2022 - is too short to provide an estimate of a constant underlying MRP.[5] If an unconditional estimate of the MRP is to be made, the AER must consider an HER series which commences long before 1988 (and, we contend, well before 1972).

4.4.2 Dr Lally's assessment aligns with use of HER series back to 1883 for estimating the MRP

Dr Lally examined, for the AER, stationarity in the series of Australian equity returns and excess returns which commence in 1883.[6] He concluded that the

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[4] The Draft Explanatory Statement advises (at page 129):
In our view, the unconditional MRP is most relevant to our regulatory task as there is difficulty in estimating the conditional MRP. As seen in the expert evidence session, there was no consensus among experts on how to estimate the conditional MRP. Therefore, we rely on HER data for our estimate of the unconditional MRP.

[5] In the third of the AER's Concurrent Evidence Sessions (17 February 2022), both Dr Lally and Dr Boyle expressed concern about the use of a short series - from 1988 - for estimation of a constant underlying MRP from HER.

[6] Dr Martin Lally, *Tests of mean stationarity for Australian share market returns data*, 2 June 2022.

Australian HER series was mean stationary. There was no evidence of a change in mean for the series from 1883 to 2021, or for the subperiods 1883-1936, 1937-1987 and 1988-2021. The underlying MRP was not changing over time; it was constant.

The Draft Explanatory Statement advises that the reason for not using HER data prior to 1988 is that those data do not incorporate any effects of dividend imputation (introduced into Australian taxation law in 1988). However, before 2018 (when the first Rate of Return Instrument was prepared and published), the introduction of dividend imputation had not been seen as an issue requiring truncation of the HER series to 1988. No evidence was subsequently provided of a structural break in the HER series in or around 1988.

In earlier submissions, APA has acknowledged the problems Brailsford, Handley and Maheswaran identified in establishing a market index for the period prior to 1958 and has proposed using the HER data from 1958 to estimate the MRP. Dr Lally raised the possibility, given the results of his work noted above, that some or all the earlier HER data, back to 1883, might be used in MRP estimation.

4.4.3 Ambiguity as to whether the AER is adopting the unconditional mean approach

APA considers it ambiguous as to whether the AER is adopting the unconditional mean approach. This is because:

- In the *Draft Rate of Return Instrument Explanatory Statement* (page 129), the AER stated that it "should continue with the unconditional MRP because [AER] do not know how to estimate the conditional risk premium with any precision and trying to do so could introduce more noise and error in the process".
- Yet, the in the *Draft Rate of Return Instrument*, the AER uses HER series from 1988.

Adoption of Option 4 would use the most recent excess returns data to make an estimate of the MRP reflective of current market conditions. This would also effectively produce a conditional estimate of the MRP and not the unconditional estimate which estimation using HER is intended to provide.

4.4.4 If the AER is adopting conditional mean, the dividend growth model should be adopted

If evidence were to be forthcoming that the introduction of dividend imputation in 1988 significantly affected the level of the MRP estimated using HER, then the AER should accept that it is restricted to making a conditional estimate of the MRP. At present, the only method available for making a such an estimate

which has sound conceptual foundations and some degree of support from most stakeholders is the dividend growth model.

If, in proceeding to consider excess returns to December 2022, the AER were to form the view that what was, in fact, required was a conditional estimate of the MRP, then, again, the dividend growth model should be used.

If the dividend growth model were to be used, APA is if the view that the MRP estimate should be updated throughout the life of the 2022 Rate of Return Instrument (as was proposed in Option 3b of the AER's Draft Explanatory Statement).

Otherwise, the unconditional mean requires the full HER data series to be used for estimating the MRP.