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RETURN ON DEBT: CHOICE OF THIRD PARTY DATA SERVICE PROVIDER

The Australian Pipeline Industry Association (APIA) welcomes this opportunity to comment on the AER's issues paper on the acceptability or otherwise of different bond indices in assessing the cost of debt for a service provider. Regardless of the merits the AER feels a particular bond index may have as an input, APIA remains of the view that it is only through the use of multiple relevant data sources, including third party indices such as Bloomberg and the RBA, that the question of a suitable cost of debt which meets the ARORO can be answered. If the process of assessment outlined in the issues paper results in a single input being "approved" by the AER to the exclusion of all others, we believe this would be a poor result.

It its issues paper, the AER has asked a series of detailed and technical questions about two indices. APIA believes that there are more general issues which need to be solved before restricting focus to just two potential inputs. Thus, rather than answering each of the questions posed by the AER in turn, we focus on these more fundamental issues. In particular, APIA makes three points:

- The interpolation mechanism proposed by the AER for the RBA data series produces arbitrary results which would only match true bond yields by pure chance.
- Both the Bloomberg and RBA indices are thin, and the small number of bonds in each raises the issue of a single bond entering or leaving an index and substantially changing its results. This means that one cannot be certain that movement in an index is due to true market movements, or just the idiosyncrasies of one bond.
- The issues paper raises questions concerning which inputs to use when assessing the cost of debt. However it omits to discuss how the AER proposes to assess whether a particular input meets the ARORO in a sufficiently robust fashion that stakeholders can understand how other inputs will be assessed, if and when they are proposed by stakeholders.

Each of these issues is discussed below.

If you would like discuss any aspects of this submission further, please contact me on (02) 6273 0577 or at sdavies@apia.asn.au.

Yours sincerely

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Interpolating from RBA monthly data

The RBA publishes data for yields on one trading day for each month, and the AER proposes to interpolate between trading days by increasing the yield each day by five percent of the difference between yields on two consecutive observations in the RBA's index. This gives it a daily yield series, which would then be averaged to produce the cost of debt at the commencement of and for each year during an access regime.

The basic problem is shown in the table below.[1] The two left-most columns replicate the AER's proposed interpolation mechanism, whereby five percent of the difference between the start and end dates (ie – the end of month one and the end of month two) is added each day. The remaining columns show how yields change if the daily growth rate is different from five percent, and the table shows several different random growth paths, each constrained such that the overall growth is the same in each case and gives rise to exactly the same end point. The final row of the table shows the 20-day average of each daily yield series.

Daily increase	Daily yield	Daily increase	Daily yield	Daily increase	Daily yield	Daily increase	Daily yield	Daily increase	Daily yield	Daily increase	Daily yield
	3.03		3.03		3.03		3.03		3.03		3.03
5.00%	3.04	23.63%	3.11	14.94%	3.08	0.00%	3.03	0.10%	3.03	10.77%	3.06
5.00%	3.06	0.22%	3.11	0.00%	3.08	11.37%	3.07	27.44%	3.12	0.10%	3.06
5.00%	3.08	0.00%	3.11	1.26%	3.08	0.00%	3.07	0.10%	3.12	0.10%	3.06
5.00%	3.10	0.00%	3.11	0.00%	3.08	0.00%	3.07	0.10%	3.12	0.10%	3.07
5.00%	3.11	15.56%	3.16	6.24%	3.10	18.51%	3.13	28.93%	3.22	0.10%	3.07
5.00%	3.13	0.00%	3.16	0.00%	3.10	0.00%	3.13	0.10%	3.22	26.93%	3.16
5.00%	3.15	16.37%	3.22	0.00%	3.10	8.25%	3.16	0.10%	3.22	0.10%	3.16
5.00%	3.17	9.41%	3.25	0.00%	3.10	12.66%	3.20	0.10%	3.22	0.10%	3.16
5.00%	3.18	0.00%	3.25	0.00%	3.10	0.00%	3.20	0.10%	3.22	0.10%	3.16
5.00%	3.20	0.00%	3.25	32.62%	3.22	19.07%	3.27	0.10%	3.22	0.10%	3.16
5.00%	3.22	5.41%	3.27	0.00%	3.22	0.00%	3.27	0.10%	3.23	21.37%	3.23
5.00%	3.23	9.78%	3.31	0.00%	3.22	0.00%	3.27	0.10%	3.23	0.10%	3.23
5.00%	3.25	0.00%	3.31	0.00%	3.22	1.35%	3.27	4.86%	3.24	0.10%	3.23
5.00%	3.27	16.76%	3.36	16.08%	3.27	0.00%	3.27	0.10%	3.24	3.69%	3.25
5.00%	3.29	0.00%	3.36	19.91%	3.34	0.00%	3.27	0.10%	3.24	0.10%	3.25
5.00%	3.30	0.00%	3.36	0.00%	3.34	28.82%	3.37	2.76%	3.25	13.86%	3.30
5.00%	3.32	2.87%	3.37	0.00%	3.34	0.00%	3.37	0.10%	3.25	0.10%	3.30
5.00%	3.34	0.00%	3.37	2.61%	3.35	0.00%	3.37	25.97%	3.34	4.49%	3.31
5.00%	3.36	0.00%	3.37	6.34%	3.37	0.00%	3.37	8.66%	3.37	0.10%	3.31
5.00%	3.37	0.00%	3.37	0.00%	3.37	0.00%	3.37	0.10%	3.37	17.60%	3.37
20-day avg yield	*3.200*		*3.249*		*3.197*		*3.218*		*3.216*		*3.187*

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[1] The actual data in the table come from daily RBA data on CGS yields from the middle of 2013. However, the numbers are not the issue; the principle is, and the numbers are for illustrative purposes only.

The average is different in each case. Intuitively, this would obviously be the case. An average is the sum of a series of observations divided by the number of observations. If Series A involved an increase from the starting value to the end value on day one and then constant yields thereafter and Series B involved yields equal to the starting value throughout the time period with a jump to the end value on the penultimate day of the series, then clearly the sum of Series A will not equal the sum of Series B. Consequently, the averages will also be different. The same is true for any two different growth paths during the period. Indeed, if we had allowed yields to decrease day-to-day in the table above, as well as increasing, one would see even more variation in averages. This is not an issue which arises because we have used yields (instead of spreads, as the AER suggests might be an option in its issues paper), but is a mathematical aspect of any interpolation mechanism for any series of numbers.

The basic problem is that the average depends upon which interpolation mechanism is chosen, and the AER cannot determine which one is correct. Absent of developing its own index, which the AER proposes not to do, it has two options. The first of these is to assume the growth path between two observations in the RBA series is the same growth path that exists in the Bloomberg series. This might be good enough as an approximation, though we note that the two series do not contain the same bonds, and it is not clear if they would move together.

Secondly, the AER could prevail upon the RBA to produce a daily, rather than a month-end series; something we understand the RBA may be considering at present. If this happens, then the interpolation problem vanishes, and thus the RBA index should not be discarded prematurely.[2]

Thin indices

Both the RBA and Bloomberg indices have only a small number of bonds. This means that, when a new bond enters an index or an old one leaves (particularly one which is large, and/or has a tenor close to the RBA's target tenor), there is a greater possibility of the index being moved by the addition or subtraction of that particular bond, particularly when compared to larger indices with more components. The problem with this is that, if only one new bond enters an index in a given month, and moves the index, it is not clear whether the index movement reflects a change in the market's views of risk in general as manifested in the rate available for that bond, or whether the rate for a particular bond reflects the idiosyncratic risks associated with the particular entity issuing that particular bond. The same is true if a bond leaves an index.

As the AER points out Bloomberg and the RBA have different criteria for including or excluding a particular bond from their indices. Thus, differences between the two indices in a given month would appear to be due in part to the bonds that are included in one index and not another.[3] There do not appear to be adequate reasons to suggest that Bloomberg's selection criteria are better than those of the RBA, or vice versa, and it would certainly be very difficult to mount an argument that

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[2] The RBA series is still new, and a shift from a monthly to a daily series is unlikely to be the only change made as the RBA improves upon its work. The AER will thus likely need to pay careful attention to the index and its derivation for some time.

[3] The other source of difference, obviously, is the way in which individual bonds are combined, particularly their weighting, to produce the index.

one set of selection criteria meets the ARORO better than the other; which we note that the AER has not (sensibly, in our view) attempted to do.

Combined together, the two issues noted above give strong reasons for considering both indices together; and indeed, relying on other evidence where it exists. For example, if Bloomberg falls and the RBA does not in a given month, this might be used as evidence that the "true" rate (that is, the one which best reflects the ARORO) ought not change from what it was the month before, because it is apparent that a new bond entered the Bloomberg index which did not enter the RBA index, and it is further apparent that the entity issuing this bond does not have risks which reflect those associated with providing the reference service.

The "thin indices" problem raises two further issues. Firstly, the AER will need to pay ongoing attention to both indices, regardless of which one it favours, to ensure it understand impacts such as those discussed above. If it does not, it can guarantee that service providers will and, moreover, that they will devote more attention to decreases in a given index than increases.

Secondly, problems may exist in meeting the requirement in the Rules that annual updating mechanisms be automatic if an index is used, as an index is a portfolio and, in the case of both indices proposed by the AER, one with not very many bonds in it.[4] In this respect, we note Professor Henry's recent comments about making comparisons of the cost of equity when the portfolio changes through time, and question whether these same concerns translate to portfolios of debt.

The missing question

Rule 87(14) requires the AER, in preparing its Guidelines, to do two thing. Firstly, it needs to highlight the methodologies it proposes to use. Secondly, it asks the AER to show how these methodologies are proposed to result in a determination which is consistent with the ARORO. Although "choose index A as an input" could only be described as a methodology if the broadest definition of the term is used, one might argue that the AER's issues paper covers the first of the requirements of 87(14).

However, despite making reference to a series of criteria, which we note are not the ARORO, the AER has not fulfilled the second of the requirements under 87(14). What is required, in our minds, is not a justification of the AER's own thinking, but rather the derivation of a transparent, robust test which is then applied to the AER's chosen methodology (here, favoured inputs) as a test case but which could be applied to any justification for a given cost of debt methodology proposed by a service provider or other stakeholder.

A justification of the AER's own thinking presupposes that, once such justification is provided, service providers and other stakeholders will simply adopt the AER's chosen methodology or input and ignore all others. This seems unlikely to occur. In part, this is because the Guidelines are not binding. However, it is also because the AER has not assessed every single conceivable methodology and then arrived at a handful which can be definitively shown to have met the ARORO, nor could it

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[4] Conceptually, the same issue would arise with any index. However, the greater the number of bonds in an index, the less likely a single bond is to move the index, and the less important this problem is likely to be in practice.

possibly hope to do so.[5] This means that there are likely to be many methodologies which have not been considered by the AER which might be shown to meet the ARORO. Service providers and other stakeholders will likely raise new methodologies in respect of debt (and other aspect of the rate of return). When they do so, they will need to show some kind of justification for their position, along the lines that the AER has done. The AER needs to assess this justification, and to have in place a transparent methodology for doing so. That, in our minds, fulfils the second of the requirements of Rule 87(14).

If no such "assessment of justification" approach is in place, the first time a new methodology is proposed by a service provider or other stakeholder, the AER will need to assess this methodology "on the fly".[6] Until it has done so (and maybe not even then, depending on the quality of the test) the market will be uncertain about outcomes, and this will have ramifications for all service providers; not just the particular service provider that has had a new methodology proposed in its access process. This introduces risk into the sector, which can be alleviated via a suitable set of Guidelines.

We believe that the Guidelines need to specify the output-based test that the AER will use to assess any model of the cost of debt put before it. The Guidelines might "pre-approve" certain models, like the use of the RBA or Bloomberg index, but they still need to show the test that will be used, and show how its own methodologies (or inputs) pass the test.

The Competition Tribunal's test

The AER, we note, has not ignored this output-based test issue entirely, and discusses in some detail a proposition put forward by the Competition Tribunal for an output-based test which involves comparison between the index and the actual bond yields for the set of firms which comprise the BEE. The AER does not appear to favour the Competition Tribunal's suggestion, although we note that most of its reasoning appears to focus on the difficulties involved and the problems of second-guessing experts, rather than on whether the test can or cannot be justified against the ARORO.

We agree with the AER that the Competition Tribunal's proposal has flaws, but we believe they are different from those the AER discusses. The major flaw, we believe, is that the proposal reverses the logic which ought to apply under the ARORO.[7]

If one has been through the process of developing the benchmark efficient entity (BEE) based upon assessing firms with similar levels of risk to those incurred when providing the reference service, we believe that the bonds associated with these firms ought to provide the primary information used in assessing the correct cost of debt for a given service provider, rather than being a benchmark against which an index ought to be tested. An index such as that produced by the RBA or Bloomberg is then the benchmark against which to test the results from the primary data for reasonableness. The reason for requiring such a benchmark is one of data availability; one cannot be sure that there

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[5] Nor would we suggest it try.
[6] We note that this applies more widely than just in the question of which debt index to use.
[7] We note, in defence of the Competition Tribunal that its proposal predates the inclusion of the ARORO in the Rules.

will be enough "BEE-bonds" available at the time an assessment is made to robustly estimate the cost of debt for a particular service provider,

However, even here, one needs to be very careful about what is being tested, and what new, useful information is being produced when the benchmark of the independent index is different from the results from the set of "BEE-bonds".[8] Say, for example, the set of firms in the BEE results in a set of bonds identical to those in one of the independent indices, but the agglomeration process which produces a single cost of debt is different to that which derives the independent index. If the results from the BEE-bonds and the independent index differ, what is really being tested is the agglomeration procedure in each case. Further, just as reasonable arguments could be made for both the Bloomberg (if we could see it) and the RBA processes of combining bonds into an index, reasonable arguments could be made for other agglomeration processes. Since there is no objective third benchmark against which to test the two agglomeration processes, it is unclear how one could determine which was "correct".

As a second consideration, consider the case where the agglomeration process is identical to the independent index (say because its creators have read and followed the RBA's working paper describing its methodology), but the set of bonds in the BEE are different from those in the independent index. Since the set of bonds in the BEE are based (or at least ought to be based) on a rigorous assessment of what firms face a similar level of risk to that faced in the provision of reference services, then what this test is really telling the analyst is that the set of bonds in the relevant independent index reflects risks that are different from those associated with the relevant reference service. The benchmark, in this instance, may provide little useful information.

In reality, both the set of bonds and the agglomeration processes are likely to be different, and the relevant test will involve decomposing any differences between the results from the BEE-bonds and the independent index into differences due to different bonds and differences due to different agglomeration processes. However the end result will still reflect (in some combination) the issues outlined in the previous two paragraphs. One should therefore be wary about uncritical acceptance of test results.

Is there an output-based test?

The discussion above suggests that simple comparisons between indices will not necessarily lead to results which can be characterised as "correct". However, it also highlights something else; if the AER is very careful about ensuring that the firms it includes in the BEE do reflect the risks associated with the provision of reference services, as the Rules require, then this is, in effect, a test of the veracity of the conclusions associated with the cost of debt. The actual bond rate which eventuates flows directly from this initial choice.

Aside from the issue of having enough data to make an estimate robustly alluded to above, two issues remain. Firstly, once the "right" set of bonds is chosen, one still needs to determine how these are combined. It is not clear whether the RBA's approach is "right" (or indeed whether there is one "right" approach), but it does have the advantage of being prepared by a highly credible

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[8] We note that, if one were to follow the Competition Tribunal and use the index as the primary data and then test it against the bonds from the BEE, exactly the same issues would arise.

source with a great deal of depth of experience in the field. The Bloomberg index no doubt has the same characteristics, but the methodology is proprietary. Other similarly credible means of combining bonds could also be suggested, and indeed, assessing such models may become a key component of the cost of debt determination process.

Secondly, Rule 87(5) requires consistency between the estimates of the cost of debt and the cost of equity. This provides an additional lever for regulators to ensure that no risks have been double-counted or excluded. Whether it be through formal means or the exercise of regulatory judgement, determinations ought to provide the evidence of this step in the process being undertaken, rather than debt and equity cost estimates being made in a mutually exclusive fashion.