**Incorporating sponsor covenants in capital assessments**

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**Abstract/Summary**

Ideally, regulatory capital assessment for occupational pension schemes should allow for the impact of the sponsor covenant (i.e. the scope the scheme might have to rely on its sponsor to make good shortfalls in the scheme). It is an important part of the pension landscape in some EU member states, including the UK. This paper explores how this might be done within a market consistent risk sensitive framework.

**Introduction**

At the time of writing, EU regulators are exploring the possibility of introducing across different EU member states a more harmonised regulatory capital framework for Institutions for Occupational Retirement Provision (IORPs), the name given to occupational pension schemes in EU directives. One possibility being considered is to introduce a market consistent risk-sensitive regulatory framework akin to the Solvency II framework being introduced for EU insurers. IORP liabilities have many similarities with those of (some) life insurance companies. However the regulatory capital frameworks within which IORPs operate are often quite different to corresponding current or prospective frameworks for insurers and also differ materially across jurisdictions.

Some of these differences reflect the generally greater 'social' dimension that IORPs exhibit versus many insurance contract types. However, it is not clear that this reason in isolation is good enough to justify the scale of the observed differences in applicable regulatory capital frameworks. IORP members (i.e. the individuals who are entitled to benefits from the IORP), particularly pensioners and deferred pensioners who are no longer employed by the IORP sponsor, are likely to believe (to the extent that they have an opinion on the matter) that the relevant regulatory frameworks that govern their benefits should offer similar levels of protection for what are otherwise similar liabilities. Most such members would have considerable difficulty identifying any fundamental differences in nature of the liabilities in question.

Other differences reflect the existence of benefit security mechanisms not commonly seen in insurance contracts, which differ by EU member state. A particularly important feature in some but not all member states is the sponsor covenant, i.e. the scope the IORP may have to rely on the sponsor to make good shortfalls in the IORP. Ideally, any harmonised regulatory capital framework should allow for these idiosyncrasies. In particular, if the aim is to introduce a market consistent risk-sensitive framework then it should ideally allow for comparable assessment of IORP benefit security with and without a sponsor covenant.

The purpose of this paper is to explore how practical it might be to develop such a framework. We conclude that it should in principle be possible to create variants of modern market consistent risk-sensitive regulatory frameworks that can take appropriate account of the additional security offered by an IORP sponsor covenant, although it may involve complicated calculations if the IORP has a complicated benefit structure.

**The sponsor covenant**

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The access that an IORP might have to additional contributions from its sponsor can come in a variety of forms:

- At one extreme, there might merely be a loose intent on the part of the sponsor to top up the IORP over some relatively long and perhaps ill-defined timeframe if it should have a deficit, but the sponsor is free to walk away from the IORP at any time if the sponsor so wished, even if the IORP was then in deficit and the sponsor was then financially buoyant;

- At the other extreme, there might be a clear legal commitment requiring the sponsor to make good any deficit in the IORP, perhaps including priority rights for the IORP in the event of the sponsor defaulting, and mechanisms in place stopping the sponsor from restructuring its business if this would be detrimental to the interests of the IORP.

A 'strong' sponsor covenant might thus be one where the commitment is legally binding and the sponsor is likely to honour it, while a 'weak' sponsor covenant might be one where there is no legally binding commitment and/or it is unlikely to be honoured (e.g. because the sponsor is just about to become bankrupt).

**Assessing benefit security with and without a sponsor covenant**

Suppose that we have two IORPs:

(a) IORP(1) is adequately funded at present, having (just) enough assets to satisfy the Solvency Capital Requirement (SCR) or equivalent required by a modern market consistent risk-sensitive regulatory framework (e.g. Solvency II or, in the main, Basel II/III or equivalent), but it does not have any likelihood of obtaining any further contributions from its sponsor.

(b) IORP(2) is not so well funded, but has access to an explicit sponsor covenant, i.e. a commitment on the part of the sponsor to make good shortfalls that might otherwise arise in the IORP. We will assume throughout this paper except otherwise stated that the commitment is legally binding, but is only honoured (at all) if the sponsor has not defaulted prior to the IORP's liabilities to its members becoming due.

How might we identify the level of funding that IORP(2) needs to have so that the two IORPs offer equivalent security of benefits to their members?

There are several possible ways of doing this. In the next few paragraphs we focus on one possible approach, illustrating the methodology with a very simplified example. The approach we highlight is consistent with the high-level characterisation of market-consistent regulatory frameworks given in Kemp (2009). Before doing so, we note that we may expect the answer to depend on at least the following:

- The creditworthiness of the sponsor. The higher the likelihood of sponsor default the less secure is IORP(2) versus IORP(1) for any given initial funding level of IORP(2).

- The degree of security being targeted by the regulatory framework. If it is very weak then even a relatively poor quality sponsor covenant could provide equivalence.

- The time to payment of the liability

- The expected future volatility of assets, liabilities and/or of assets versus liabilities.

To keep our example simple we assume that the liability to members that either IORP provides is a payment of 1 in $T$ years' time. We also assume that there is only one (tangible) asset in which either IORP can invest, the returns on which follow those implicit in a Black-Scholes world (without dividends), involving a risk-free rate (continuously compounded) of $r$ (that is constant through time) and a (risk-neutral) annualised volatility of $\sigma$ (that is also constant through time). The stochastic process that the returns follow is therefore:

$$\frac{dS}{S} = \mu dt + \sigma dz$$

where $S_t$ is the total return index of the underlying at time $t$, $\mu$ is the mean drift and $dz$ are (independent) normal random variables with zero mean and variance $dt$.

We further assume that neither IORP will receive any additional contributions between now and immediately before $T$. We assume that IORP(1) will not receive any further contribution at $T$ either (or later). However, we assume that IORP(2) *will* get a further contribution (at time $T$) but only if its sponsor has not defaulted before time $T$ and if its then tangible assets are less than its liabilities, in which case its sponsor will make good the shortfall between its assets and liabilities, if any. Thus we are assuming zero recovery on the sponsor covenant by IORP(2) in the event of its sponsor defaulting before time $T$. We assume that the continuously compounded (risk-neutral) annualised probability of default of the sponsor (if it hasn't already defaulted), i.e. the (annualised) sponsor default intensity, is $\lambda$ (assumed constant through time). We will initially assume that the pattern of default of the sponsor is independent of the behaviour of the tangible asset, although we will comment later on how the picture might alter if there is some assumed linkage between the two.

We assume that neither IORP is exposed to any risk other than market risk or, in the case of IORP(2), sponsor covenant risk.

In addition we assume that:

(i) The degree of solvency protection offered by the relevant modern risk-sensitive regulatory framework is characterised (for an entity without contingent assets such as a sponsor covenant) by a VaR-style computation of a SCR based on a confidence level of $\alpha$ over an $n$ year time horizon, with no assumption of additional mean excess return being provided by assets that are not risk-free (i.e. on the assets that the IORPs are actually investing in). For example, Solvency II attempts to target a 99.5% 1 year VaR and implicit in its market consistent focus is, in most respects, an assumption of zero mean excess return on assets that are not risk-free.

(ii) Members of neither IORP will be entitled to receive anything more than the liability in (i). This can be viewed as consistent with future surpluses accruing to the sponsor and/or members being indifferent about possible upside if asset returns are favourable and/or the regulatory framework being one in which zero weight should be given to such a possibility. We need to make some assumption about what happens if asset returns are favourable (even it is to assume, as here, that the upside should be ignored) as this will alter the utility members and/or regulators on their behalf place on belonging to a well-funded IORP relative to a not so well funded IORP. Hawkins and Keogh (2008), building on the likes of Chapman *et al.* (2001), describe a framework for apportioning value between stakeholders that has some similarities with the above except that they assume that some fraction $\phi$ of any surplus accrues to members and $(1 - \phi)$ to the sponsor. Similar ideas are also

presented in Kocken (2006) and Kemp and Patel (2011). We describe below how including a non-zero value for $\phi$ would alter the approach otherwise set out in this paper.

**Simplified methodology with example outcome**

Our first task is to identify for IORP(1) the (market consistent) value of the liabilities (at outset), $L$, an SCR that is consistent with (i) and hence the (market consistent) value of the assets, $A = L + SCR$, which IORP(1) will be holding at outset. Then for IORP(2) we want to identify the value of assets, $B$, that it needs to hold to provide equivalent security of benefits to its members.

In a market consistent valuation paradigm, the value of the liabilities, if they were sure to be honoured, is $L = e^{-rT}$. This is the case irrespective of which IORP we are considering.

The SCR for IORP(1) can be derived from the amount of assets that the IORP needs to hold for there to be a $1 - \alpha$ (risk-neutral) probability of the assets not exceeding the liabilities in $n$ year's time. In $n$ year's time the liabilities will have a market consistent value of $L_n = e^{-r(T-n)}$. Given the asset dynamics we are assuming, if we have assets of $A$ now, the (risk neutral) probability distribution of the asset value, $A_n$, at time $n$ will be given by:

$$(\log A_n - \log A) \sim N(rn, \sigma^2 n)$$

$$\Longrightarrow \frac{\log A_n - \log A - rn}{\sigma\sqrt{n}} \sim N(0,1)$$

Thus for $A_n$ to have a $1 - \alpha$ (risk-neutral) probability of exceeding $L_n$ we need (where $N(z)$ is the Cumulative Unit Normal Distribution Function and $N^{-1}(z)$ is its inverse):

$$\frac{\log L_n - \log A - rn}{\sigma\sqrt{n}} = N^{-1}(1-\alpha)$$

$$\Longrightarrow A = e^{-r(T-n)} e^{-rn-\sigma\sqrt{n}N^{-1}(1-\alpha)} = Le^{-\sigma\sqrt{n}N^{-1}(1-\alpha)}$$

The SCR for IORP(1) is thus:

$$SCR = L\left(e^{-\sigma\sqrt{n}N^{-1}(1-\alpha)} - 1\right)$$

For example, suppose the regulatory framework has $\alpha = 99.5\%$ and $n = 1$ and suppose $\sigma = 0.1$. Then $N^{-1}(1-\alpha) = -2.575$ so $SCR/L = 29.4\%$ and $A/L = 129.4\%$

However, members of IORP(1) won't always receive 1 in $T$ years' time. Instead they will receive 1 if $A_T$, the value of the assets at time $T$, is greater than 1 but only $A_T$ if $A_T$ is less than 1. They are in effect short a (European-style) put option giving the option holder the right but not the obligation to sell a current quantum, $S$, of the asset for a (strike) price of 1 in $T$ years' time.

Given our assumptions about the dynamics of the tangible asset, the (market consistent) value of a put option with strike price $K$ can be derived directly from standard Black-Scholes option pricing formulae but with the dividend yield, $q$, set to 0. Thus the put option has a value at time 0 of $P(S, 1; r, 0, \sigma, t)$ where:

$$P(S, K; r, q, \sigma, t) = -Se^{-qt}N(-d_1) + Ke^{-rt}N(-d_2)$$

and

$$d_1 = \frac{\ln\left(\frac{S}{K}\right) + \left(r - q + \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}}$$
$$d_2 = d_1 - \sigma\sqrt{t} = \frac{\ln\left(\frac{S}{K}\right) + \left(r - q - \frac{\sigma^2}{2}\right)t}{\sigma\sqrt{t}}$$

Thus the (market consistent) value of the members' entitlements from IORP(1) at time 0 is:

$$V(1) = L - P(A, 1; r, 0, \sigma, T)$$

For example, suppose $\alpha = 99.5\%$, $n = 1$, $\sigma = 0.1$ and suppose $T = 20$. Then $P(A, 1; r, 0, \sigma, T)/L = 8.8\%$ and $V(1) = 0.912$, irrespective of the value of $r$. Thus the (market consistent) value to the member of the (not fully certain to be delivered) benefit being provided by IORP(1) is approximately 0.5% per annum less than it would have been had it been provided by an entity absolutely certain to pay it in full. If it were possible for the member to 'trade' his or her benefit in an open market then this 0.5% per annum deduction is akin to the credit spread that the market should ascribe to such a liability.

Consider now the members of IORP(2). If the sponsor defaults then the picture is similar to that for IORP(1) except that the initial (tangible) asset base is lower ($B$ rather than $A$). In contrast if the sponsor does not default then they will receive 1 in full irrespective of $B$. The (annualised) sponsor default intensity is $\lambda$ so the probability that it hasn't defaulted by time $T$ is $e^{-\lambda T}$. Thus the (market consistent) value of their entitlements at time 0 is:

$$V(2) = \left(1 - e^{-\lambda T}\right)\left(L - P(B, 1; r, 0, \sigma, T)\right) + e^{-\lambda T}L = L - \left(1 - e^{-\lambda T}\right)P(B, 1; r, 0, \sigma, T)$$

One way of defining 'equivalence' (although not the only way, see below) is to choose $B$ so that the (market consistent) value of the members' entitlements is the same in either case, i.e. so that:

$$V(1) = V(2)$$
$$\Longrightarrow L - P(A, 1; r, \sigma, T) = \left(1 - e^{-\lambda T}\right)\left(L - P(B, 1; r, 0, \sigma, T)\right) + e^{-\lambda T}L$$
$$\Longrightarrow \; P(B, 1; r, 0, \sigma, T) = \frac{P(A, 1; r, 0, \sigma, T)}{\left(1 - e^{-\lambda T}\right)}$$

For example, suppose $\alpha = 99.5\%$, $n = 1$, $\sigma = 0.1$, $T = 20$ and suppose $\lambda = 0.02$. Then $\left(1 - e^{-\lambda T}\right) = 0.3297$ and we need $P(B, 1; r, 0, \sigma, T)/L = 0.2671$, again irrespective of the value of $r$.

There is no simple analytical formula that identifies the value of $B$ that achieves this equivalence (akin to the Black-Scholes option pricing formulae described above). Instead it must be found numerically (iteratively). With $\alpha = 99.5\%$, $n = 1$, $\sigma = 0.1$, $T = 20$, $\lambda = 0.02$ we find that equivalence is achieved with $B/L = 81.9\%$, again irrespective of the value of $r$. Given these values of $\alpha$, $n$ and $\sigma$, the ratio of $B/L$ seems to be reasonably insensitive to $T$, i.e. the duration of the liabilities, but more sensitive to $\lambda$, the creditworthiness of the sponsor:

| | **Asset/Liability ratio ($B/L$)**[1] | | |
|---|---|---|---|
| | (risk-neutral) per annum probability of sponsor default[2] | | |
| Liability duration ($T$) (years) | $\lambda = 0.01$ | $\lambda = 0.02$ | $\lambda = 0.04$ |
| 10 | 56.4% | 81.3% | 99.7% |

| | | | |
|---|---|---|---|
| 20 | 52.5% | 81.9% | 104.3% |
| 30 | 53.6% | 85.5% | 109.6% |

[1] that, coupled with a sponsor covenant, achieves an equivalent benefit security to an Asset/Liability ratio of 129.3% without a sponsor covenant
[2] with zero recovery in the event of default

**'Holistic' IORPs balance sheets**

In such a framework we might characterise the holistic balance sheet of the two IORPs as follows (using the example of $T = 20$ and $\lambda = 0.02$ and where the two provide equivalent benefit security as above):

| **IORP(1)** | | | |
|---|---|---|---|
| Liabilities | 100.0 | Tangible assets | 129.4 |
| SCR | 29.4 | Sponsor covenant | 0.0 |

| **IORP(2)** | | | |
|---|---|---|---|
| Liabilities | 100.0 | Tangible assets | 81.9 |
| SCR | 29.4 | Sponsor covenant | 47.5 |

We see that an IORP with a strong sponsor covenant can provide an equivalent level of benefit security to one that is materially better funded at present but without a sponsor covenant.

It may be worth noting that the degree of benefit security being offered by an IORP may differ according to the class of member, if different classes have different priority rights in the event of the IORP being unable to meet its liabilities in full. We do not explore this point here but it is analysed further in Kemp (2011).

**Benefit linkage to surpluses**

All of the above analysis assumes that members receive no benefit from surpluses (i.e. from $A_T$ or $B_T$ exceeding 1). If instead they receive a fraction $\phi$ of this surplus then the members are in effect long a call option relative to the position above, since they will also share some further upside if the asset value exceeds that of the liability at time $T$. Given the dynamics we are assuming for the asset this call option can also be valued using standard Black-Scholes option pricing formulae for call options, again with the dividend yield, $q$, set to 0. Thus the call option has a value at time 0 of $\phi C(S, 1; r, 0, \sigma, T)$ where:

$$C(S, K; r, q, \sigma, t) = Se^{-qt}N(d_1) - Ke^{-rt}N(d_2)$$

The (market consistent) values of the entitlements of IORP(1) members and of IORP(2) members at time 0 are then $V_\phi(1)$ and $V_\phi(2)$ respectively, where:

$$V_\phi(1) = L - P(A, 1; r, 0, \sigma, T) + \phi C(A, 1; r, 0, \sigma, T)$$
$$V_\phi(2) = L - \left(1 - e^{-\lambda T}\right)P(B, 1; r, 0, \sigma, T) + \phi C(B, 1; r, 0, \sigma, T)$$

We would now identify $B$ so that it equated $V_\phi(1)$ with $V_\phi(2)$, rather than equating $V(1) \equiv V_0(1)$ with $V(2) \equiv V_0(2)$.

Even relatively modest entitlements to future surpluses can lead to a materially higher (tangible) asset ratio that IORP(2) would need to hold to achieve equivalence with IORP(1). With $\alpha = 99.5\%$, $n = 1$, $\sigma = 0.1$, $T = 20$, $\lambda = 0.02$ we have:

| **Fraction of future surpluses accruing to members ($\phi$)** | **Asset/Liability ratio ($B/L$)[1]** |
|---|---|
| 0% | 81.9% |
| 25% | 107.7% |
| 50% | 116.5% |
| 75% | 120.3% |
| 100% | 122.4% |

[1] that, coupled with a sponsor covenant, achieves an equivalent benefit security to an Asset/Liability ratio of 129.3% without a sponsor covenant

**Practical computational challenges**

In practice, the computations would need to accommodate benefit payments occurring through time and dependent on mortality, retirement and withdrawal rates. Some benefits may be inflation-linked perhaps with caps and floors. In some EU member states a particularly important benefit security mechanism is conditional indexation. This involves the level of inflation linkage being dependent on the solvency level of the IORP at the time of the increase.

These can in principle be handled in a manner similar to the above, but the numerical computations become more involved, see e.g. Kemp (2011). The essence of the approach described above is to blend (market risk based) option pricing techniques with credit risk pricing techniques (since the problem involves both types of risk simultaneously).

An IORP's tangible asset base will often also be added to by future sponsor and/or member contributions. In the above analysis we have assumed that any contributions needed from the sponsor would only occur at the time the liability matured. However, sponsors often contribute more rapidly than this. Indeed in some EU member states underfunded IORPs are able to require sponsors to follow a given schedule of contributions which may target fuller funding much sooner than the average maturity date of their liabilities. Again the above approach can be modified to cater for exposures where the risks involved have different (average) timespans, but again this makes the numerical computations more involved.

A different sort of challenge is that the formulae include parameters (i.e. the $\lambda$ which in general may be term dependent) linked to the deemed (multi-year) creditworthiness of the sponsor. In some EU member states there may be many IORPs with small privately owned sponsors. There may be no market observables available for such sponsors to help in the derivation of market consistent values for these parameters. Some of these member states have state-wide pension protection arrangements that charge premiums linked to the deemed creditworthiness of the sponsor. This may provide an indirect guide that could help in the choice of such parameters.

**Different ways of defining 'equivalence'**

The above approach is not the only way of defining or determining equivalence although it is one of the simpler and more intuitive (while still theoretically justifiable) approaches. We have implicitly assumed in the above that members view equivalence through the lens of value weighting all outcomes in line with the (risk-neutral) probability of the outcome.

However, members may view the utility of the two pay-offs differently. As far as the member is concerned, the outcomes from IORP(2) are essentially binary in nature and involve (potentially sudden) jumps. Either the sponsor defaults or it doesn't. In contrast, the outcomes from IORP(1) are, we might presume, somewhat smoother. Members' pension rights may be a substantial part of their total wealth. It may be difficult or impossible for them to hedge their exposure to the risk of default of the sponsor of IORP(2) but it may in principle be easier for them to hedge their exposure to the market risk implicit in outcomes being dependent on the (tangible) asset performance.

The Solvency II SCR includes concentration risk within its Default (i.e. Counterparty) risk module and a similar refinement could be included in the computation of an IORP SCR if the IORP's effective counterparty exposure to its sponsor (via a sponsor covenant and/or other forms of self-investment) was significant.

**Capital tiers, 'basic' versus 'ancillary' own funds and loose versus hard legal commitments by sponsors to make good IORP deficits**

Different possible interpretations of 'equivalence' may also link to the notion of capital tiers. Modern market consistent risk-sensitive regulatory capital frameworks often differentiate between different types of capital because some types of capital may be more or less effective in a going versus a gone concern situation. Limits may be placed on the extent to which lower tier capital can be used to meet a firm's overall capital needs. For example, in Solvency II and Basel II/III common equity is generally seen by regulators as a more robust form of capital than debt-based capital.

Solvency II also includes the concept of 'basic' versus 'ancillary' own funds, with 'basic' own funds approximating to ones actually present in the balance sheet and 'ancillary' own funds being other types of own funds. It is currently envisaged that for insurers the Solvency II Minimum Capital Requirement (MCR) could only be satisfied using 'basic' own funds.

Not all of these concepts translate perfectly into the IORP world. For example, IORPs are typically not themselves managed on a for profit basis. There may be no sudden loss in value for them in isolation akin to the loss of franchise value that generally occurs when a for profit firm fails, rendering less relevant distinctions between capital effective in going versus gone concern situations.

Conversely, there may be other aspects of IORPs that may favour differentiating between possible sources of capital and/or sponsor support. For example, we noted earlier that some sponsor covenants might involve merely loose commitments by the sponsor to make good deficits while others might involve legally binding elements. IORPs that have a legally enforceable right to future sponsor contributions are in a stronger legal position than ones that do not. However, the latter might still have some reasonable expectation of future sponsor contributions, especially if other aspects of the social contract between labour and employer are taken into account. A regulatory framework could differentiate between the potential reliability of different types of sponsor covenant by treating them like different capital tiers and/or using a different apportionment between basic and ancillary own funds.

State-wide protection schemes provide another important benefit security mechanism in some EU member states. It is possible using a framework as above to include a market consistent value on such mechanisms in an IORP balance sheet. However, regulators might be worried that these protection schemes might in extremis require government support and so might want to limit the

extent to which IORPs might rely on such mechanisms when demonstrating an acceptable level of solvency.

**Incorporating a link between sponsor default and asset performance**

What happens if there is some linkage between the likelihood of the sponsor of IORP(2) defaulting and the behaviour of the (tangible) assets? One extreme case would be where the sponsor exists essentially only on paper and only has one component of value, namely exposure to the recapture of surplus in IORP(2) should $B_T$ exceed 1. In this situation, whenever IORP(2) has a deficit at time $T$ its sponsor would have defaulted and the sponsor covenant would be useless, as far as the members are concerned.

Although highly extreme, this situation does indicate that the larger the IORP is relative to the sponsor's net worth (ignoring the IORP), the less valuable becomes the sponsor covenant. Some linkage ought therefore in theory to be included. However, in practice for most IORPs the linkage may be tenuous at best (perhaps via the link that both have more generally to the economic cycle), and approximate upward adjustments in the assumed default rate may be adequate.

More generally, modern regulatory capital frameworks often include a requirement for regulated entities to carry out an Own Risk and Solvency Assessment (ORSA), Internal Capital Adequacy Assessment Process (ICAAP), Individual Capital Assessment (ICA) or the like. This would often include a review of the applicability of any standardised regulatory capital formulae that might otherwise have been applied to the entity in question. So, if there are ways in which a model such as the one we have described above were inadequate for a particular IORP benefiting from a sponsor covenant then some of the model risk involved could be mitigated by requiring the IORP to carry out an ORSA or the equivalent.

**Conclusion**

By appropriately blending (market risk based) option pricing techniques with credit pricing techniques it is possible to include the impact of the sponsor covenant in market consistent capital assessments. An IORP with a strong sponsor covenant can provide an equivalent level of benefit security to one that is materially better funded at present but without a sponsor covenant. The complexity of the calculations involved will depend heavily on the complexity of the IORP's benefit structures. A potential challenge is the identification of a deemed (market consistent) level of longer-term creditworthiness of mainly smaller sponsors with no available market observables dependent on their creditworthiness. Use of rates charged by national pension protection of guarantee funds may circumvent this issue in some jurisdictions. The concentration risk exposure that individual IORP members might have to the creditworthiness of the IORP sponsor and the impact of correlation between sponsor default and adverse IORP funding levels could be reflected in choice of definitions for capital tiers and by mandating use of ORSAs or the equivalent.

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