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Calculating Liquidity Premiums for Insurance Contracts

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The current decision by the Financial Accounting Standards Board (FASB) and International Accounting Standards Board (IASB) in their joint insurance contracts project is to discount liabilities at a risk-free rate plus an adjustment for the difference in liquidity between certain insurance contracts and risk-free instruments. How to calculate this liquidity premium has not been specified, and there is clearly confusion as to how this would be done. Even board members have expressed concerns about how a liquidity premium could be calculated.

The Committee of European Insurance and Occupational Pensions Supervisors (CEIOPS) has made a proposal for calculating liquidity premiums that was included in the appendix to the agenda paper used by the boards in their discount rate discussion. Under the CEIOPS proposal, the liquidity premium would usually be insignificant, but in times of financial market stress a significant liquidity premium could be calculated using a structural model or by comparing the spread on corporate bonds with the spread on credit default swaps.¹ However, the liquidity premium in the CEIOPS proposal addresses illiquid financial markets. It does not deal with the illiquidity associated with particular insurance contracts, which appears to be the objective of the IASB/FASB decision.

significantly higher than risk-free rates, some other factor must account for insurers' willingness to pay such rates, while still achieving acceptable returns on capital in a competitive market. And contract illiquidity is likely a significant factor, since many insurance contracts have significant restrictions on a policyholder's ability to access the value of the contract for cash. In contracts such as disability income insurance or life payout annuities, the policyholder's ability to access cash in exchange for the value of his or her contract is far less than in any publicly traded financial instrument, since by definition a holder of a publicly traded instrument can quickly access cash by selling the instrument. The illiquidity of insurance contracts is a factor under all market conditions, not just in stressed markets such as during the financial crisis. Thus the CEIOPS approach would understate the discount rate and overstate the liability value under most market conditions. This would likely result in artificial losses being reported upon the issue of contracts that are expected to be profitable.

MEANING OF LIQUIDITY PREMIUM

It may be worth a brief digression to describe how illiquidity may impact an insurance liability. Financial textbooks are not unanimous in their definition of liquidity and illiquidity, but they generally define liquidity in terms of the ability of the asset holder to

... the liquidity premium represents the amount the liability holder ... needs to compensate the asset holder.

Nor do I believe the CEIOPS approach would generate an appropriate insurance liability value. After all, many insurance contracts credit an interest rate greater than the risk-free rate.² While some of the excess interest credit could be related to own credit risk, the own credit risk for an insurance contract issued by a regulated insurance entity is very small. This was acknowledged by the boards when they decided that including own credit in the insurance contracts discount rate is unnecessary.³ If own credit is not the reason for insurance contracts carrying interest rates

FOOTNOTES

- ¹ Under a structural model, a company's credit risk is determined by valuing the company's equity as a call option on the company's assets, using a Black-Scholes model. Under the CEIOPS proposal, in times of stressed markets the company's credit risk would be determined using a structural model, such as the Merton model. This credit spread would then be deducted from the interest rate on the company's debt to determine the liquidity premium.
- ² For this purpose, the credited rate might be explicitly stated (as in a universal life contract or deferred annuity) or implicit in the premium or dividend (as in a traditional contract). In the case of an explicitly stated credited rate, the credited used for this purpose needs to be the rate before deductions for the cost of services and guarantees. Although credited rates are typically reduced for the cost of services (such as acquisition costs) and guarantees (such as minimum interest guarantees) these items are not elements of the time value of money, and should be considered as separate fees for purposes of determining the discount rate within the context of the insurance contracts project.
- ³ The Boards' joint paper *Reducing Complexity in Reporting Financial Instruments* (2008) makes similar points about customer obligations of regulated entities.



quickly convert the fair value of the instrument to cash.⁴ So the liquidity premium represents the amount the liability holder, in this case the insurer, needs to compensate the asset holder, in this case the policyholder, for the fact that the asset holder is unable to quickly convert the fair value of the instrument into cash. A less liquid instrument would generally require a larger liquidity premium. For example, a bank checking account is very liquid since the account holder need only write a check to access cash. A bank savings account is at least somewhat less liquid because the bank has the right to delay payment (although in practice this right is rarely exercised) and might not provide cash access by simply writing a check. And bank savings accounts generally carry higher interest rates than checking accounts.

Taking an insurance example, a three-year SPDA with a market value adjustment and a surrender charge is less liquid than a three-year zero coupon Treasury bond. Both instruments' values should respond similarly to changes in interest rates. But the Treasury bond holder can quickly and easily convert the fair value to cash by selling the bond in a deep secondary market. The SPDA asset holder cannot quickly access a deep secondary market, and will incur a surrender charge reduction to fair value by surrendering the SPDA to the insurer. The insurer may also have the right to delay payment, which is a reduction in liquidity, even though such rights are rarely exercised. So, even without reflecting any credit quality differences between the Treasury bond and the SPDA, the insurer would need to credit a higher interest rate to compensate the policyholder for the SPDA's relative illiquidity. A life payout annuity is even less liquid than an SPDA, since there is generally no cash surrender at all. So we should expect that a life payout annuity would generally carry a larger liquidity premium than a market value adjusted SPDA.

POSSIBLE MEASUREMENT APPROACH

So how can a liquidity premium be measured? Probably not from looking at transactions of market traded instruments, since any market traded instrument is likely to have significantly greater liquidity than many

insurance contracts, such as disability income insurance or life payout annuities. However, there are arms-length transactions of insurance contracts that indicate the appropriate interest rate for an insurance contract—the initial sale of a contract between the insurer and the policyholder. The interest rate included in newly sold insurance contracts should include an appropriate liquidity premium. If the liquidity premium in the contract interest rate in newly sold contracts is too low, then customers would not be induced to purchase the contract.⁵ If the liquidity premium in newly sold

FOOTNOTES

⁴ For example, Downs & Goodman (2010) Dictionary of Finance and Investment Terms defines liquidity as "ability to buy or sell an asset quickly and in large volume without substantially affecting the asset's price. ... Liquidity also refers to the ability to convert to cash quickly." Morowski (2008) *Investment Decisions on Illiquid Assets* notes that "a quick sale of an illiquid asset is only possible at a discount to the fair value, but a higher price can be achieved if a time consuming liquidation process is conducted."

⁵ Arguably, the liquidity premium included in the credited rate for some insurance contracts is too low. An example may be life payout annuities. Although the risk of outliving one's income is well known, customers are reluctant to buy life annuities because they are reluctant to tie up their money in this manner. This is a classic and extreme liquidity issue. If insurers were able to credit a high enough liquidity premium to overcome customers' reluctance to tie up their money, more life annuities would be sold to meet the social need of insuring against outliving one's income. The fact that insurers are unable to credit a high enough liquidity premium (in large part because illiquid enough assets with high enough liquidity premiums are unavailable) is an indication that the liquidity adjustment within newly sold life annuities premiums is too low.

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contracts is too high, insurers would not be willing to sell the contract. So the appropriate liquidity premium for the valuation discount rate could be measured as the difference between the credited rate on newly sold contracts and the risk-free rate.⁶ A clear advantage of this approach is that the discount rate for newly issued contracts would be consistent with the credited rate, avoiding artificial losses when contracts are sold.

Of course, the interest rate in newly sold contracts also includes an element for own credit, but for a regulated insurance entity, the impact from own credit should be very small, and so only a small adjustment, if any, should be necessary. Even if the adjustment for own credit is difficult to measure⁷, it still could not be wrong by more than a few basis points.

Another issue with using the credited rate on newly issued contracts to determine the liquidity premium for the discount rate is that newly issued contracts may not have identical characteristics as in-force contracts. Of course, to the extent that new issues are significantly different from in-force contracts, the liquidity premium derived from new issues may not be directly applicable to the in-force contracts. But to the extent that the new issues do have similar characteristics to in-force contracts, the credited rate on new issues at least provides a starting point for determining the liquidity premium on the in-force contract. For example, a newly issued disability income contract may not have the exact same liquidity characteristics as a disability income contract sold five years earlier, but the liquidity characteristics of the new disability income contract is probably more similar to those of the five-year-old contract than those of any market traded instrument. In an extreme case, for a pure life-contingent payout annuity, the liquidity of a newly issued contract will be identical to that of any in-force, pure life-contingent payout annuity to the same customer.

A more serious problem with using the credited rate on newly issued contracts to determine liquidity premiums is that this approach presumes the pricing of the new contracts is correct. There are a number of reasons why this may not be the case. The insurer may be pricing over aggressively in an attempt to win market share,

for example. Or the insurer may be underestimating the potential default losses from high-yield bond investments, and passing the gains to the policyholders.⁸ Alternatively, the insurer may be overpricing a particular contract for strategic reasons. There is a way to avoid this problem. Reinsurers are also regulated entities that transact at arms length in insurance risks. Thus the current interest rate that a reinsurer would credit if it assumed the insurance contract being valued would incorporate an appropriate liquidity premium. That rate would also incorporate own credit, but as a regulated entity, the impact of own credit should be very small, similar to that of most direct insurers. Since reinsurers may assume in force contracts as well as newly issued contracts, the rate a reinsurer would credit could be valid for either type of contract.

A problem with using the liquidity premium that a reinsurer would credit is that reinsurance transactions do not take place all the time, and the pricing is not transparent. However, this is no different than the situation faced when applying fair value guidance for insurance contracts (in a business combination, for example) or embedded derivatives within insurance contracts (such as variable annuity guarantees). These contracts or benefits do not trade in active, observable markets. But the accounting rules still require the valuation to apply assumptions that a market participant would use in determining a transaction price. And insurers are

FOOTNOTES

- ⁶ As noted above, the credited rate may be implicit or explicitly stated, and if explicitly stated, the rate used for this purpose needs to be the rate before any deductions for the cost of services and guarantees, which may be higher than the actual stated credited rate.
- ⁷ One possible approach to estimating the own credit impact within the insurance contract credited rate would be to look to historical default rates net of recovery percentages for insurance companies with the same credit rating. This would likely be 10 basis points or less for any regulated U.S. insurer. This approach would not be consistent with a risk-neutral valuation, but since the measurement attribute in the insurance contracts project is not fair value, deviations from a risk-neutral valuation should be appropriate.
- ⁸ If the measurement objective for the insurance contracts project was fair value, then arguably any assumption of potential earnings over risk-free rates would be too high. In other words, the default assumption would have to equal any excess spreads, and no liquidity premium would emerge. However, the measurement objective for the insurance contracts project is current fulfillment value, not fair value, and so there is no necessity of assuming any earnings over risk free would be offset by defaults. In any case, under a fair value measurement objective, the discount rate would be increased for own credit.

able to apply the fair value guidance for these contracts and benefits, sometimes using hypothetical reinsurance pricing bases as inputs to determining the appropriate valuation assumptions. Similarly, insurers could use hypothetical reinsurance pricing bases to estimate the appropriate liquidity premium for an insurance contract valuation under the proposed IFRS/GAAP guidance.

In most cases, the insurer would not even need to go so far as trying to estimate the hypothetical reinsurance pricing basis. Generally, an insurer would have good reason to believe that its pricing is consistent with how a reinsurer would price the contract. In that case it would be clear that the insurer's credited rate would be similar to the rate a reinsurer would credit and so the insurer's credited rates would be appropriate for determining the liquidity premium. In such cases, the insurer's own credited rates would be an appropriate basis for determining the liquidity premium, without explicit reference to any particular reinsurer's hypothetical credited rate. Only in cases where an insurer is pricing over-aggressively (or under-aggressively) would the insurer need to estimate a reinsurance pricing basis (either on its own volition or under prodding from its auditor). Similarly, an appropriate replicating portfolio approach would likely generate a similar liquidity premium to a hypothetical reinsurance pricing rate, under an assumption that the reinsurer would likely base its pricing on a similar portfolio. Although in most cases looking to a reinsurer credited rate would not produce a different liquidity premium from the insurer's own credited rates, using a hypothetical reinsurer's credited rate as part of the measurement objective would add an important element of discipline to the process, and provide a basis for auditors to challenge the insurer's assumption. For example, if an insurer is aware that its credited rates are out of line with other insurers, those rates would likely be out of line with reinsurance credited rates as well. In such cases, an adjustment to the insurer's credited rate would be appropriate when calculating its liquidity premium.

SUMMARY

In summary, IASB and FASB have tentatively decided that the discount rate used when calculating insurance

liabilities in their joint insurance contracts project should include a liquidity premium. But they provide no guidance as to how such a liquidity premium should be calculated. In the absence of such guidance, auditors may be reluctant to permit any liquidity premium. Alternatively, under the proposed CEIOPS approach, a liquidity premium to the discount rate would only be permitted in times of general market illiquidity. This could generate artificial GAAP/IFRS accounting losses upon the sale of profitable contracts. This would be especially problematic for insurance contracts such as disability income or life payout annuities, which are far more illiquid than any publicly traded instrument.

However, insurers have information on the rate over risk free that they need to credit new policyholders at the point of sale. Although this rate includes compensation for both own credit and illiquidity, the boards have acknowledged that own credit in an insurance contract issued by a regulated insurer is small. Thus, the rates at which insurers sell contracts provide a good estimate of the appropriate liquidity premium for contracts with similar illiquidity characteristics. However, using an insurer's own credited rates has the disadvantage of possibly misstating the liquidity premium if the insurer's credited rates are significantly different from other insurers.

One method to add rigor to the process would be to determine the liquidity premium by reference to the liquidity premium that a hypothetical reinsurer would include in its credited rates on assumed business. Like the insurer, nearly all of a regulated reinsurer's credited rate in excess of risk free rates could be attributed to liquidity. This reference to a reinsurer's credited rate would be a hypothetical construct, similar to the approach taken in FAS 157 for fair value calculations, where assumptions are based on a hypothetical exit market participant even if an exit market for the product does not exist. Although it would be a hypothetical construct and generally not actually calculated, thinking about the liquidity premium from the standpoint of a different entity would add discipline to the process and provide a basis for auditors to challenge aggressive or conservative assumptions. ■