Guideline

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Accompanying documents

- Derivatives Sound Practices for Federally Regulated Private Pension Plans (letter)

Introduction

This Guideline outlines the factors that the Office of the Superintendent of Financial Institutions (OSFI) expects administrators of federally regulated private pension plans to consider when developing policies and procedures for the sound risk management of derivative activities. While derivatives can be effective tools for risk mitigation, the associated risks must be identified, measured, monitored and controlled as part of a pension plan's comprehensive risk management framework.

Plan administrators should consider how this Guideline applies to their pension plan, keeping in mind the plan's investment objectives, risk tolerance and other relevant factors. Prudence may require some plans to have more rigorous practices and procedures than others. Prudence may also lead an administrator to a determination that derivative transactions, or certain types of derivatives, are inappropriate for a particular pension plan. It is the responsibility of the plan administrator to make these determinations.

1.0 Definition

Derivatives are financial or commodity contracts, whose market price, value, delivery obligations, payment obligations or settlement obligations are derived from, referenced to or based on an underlying interest. The value can be determined by fluctuations of the underlying interest, which may include stocks, bonds, commodities, currencies, interest rates and market indices. Derivatives include a wide assortment of financial or commodity

contracts, including forwards, futures, swaps and options.

A derivative contract is entered into between two parties – who are referred to as counterparties. These counterparties are subject to a pre-agreed set of terms and conditions that determine their rights and obligations under the derivative contract.

A derivative contract can be entered into on an exchange or through over-the-counter arrangements.

- **Exchange traded derivatives:** Typically standardized as to maturity, contract size and delivery terms and traded on an exchange and cleared through a central counterparty (CCP). A CCP is an entity that interposes itself between counterparties to contracts in a financial market, becoming the buyer to every seller and the seller to every buyer. A CCP becomes a counterparty to trades with market participants through a legally binding arrangement. Various measures, including multilateral netting of exposures and the posting of collateral, greatly mitigate the counterparty credit risk that clearing members face with respect to the CCP.

- **Over-the-counter (OTC) derivatives**: Privately negotiated agreements with specific terms and conditions determined and agreed to by the parties. They do not trade on an exchange. Unlike exchange traded derivatives, the contracting parties may negotiate specific terms and conditions that are customized to fit their individual risk preferences. OTC derivatives can either be transacted directly between two counterparties, or cleared through a CCP:
    - If an OTC derivatives contract is cleared through a CCP, counterparty credit risk (i.e. the risk that the other party will not fulfill their obligations under the contract) is greatly reduced by the presence of the CCP and its associated risk mitigation measures, such as netting and the posting of collateral.
    - If an OTC derivatives contract is transacted directly between the parties and not cleared through a CCP, the parties to the contract are exposed to the counterparty credit risk of the other party (and not the greatly mitigated counterparty credit risk associated with using a CCP).

This Guideline addresses both exchange-traded and OTC derivatives.

2.0 Use of Derivatives

When used prudently, derivatives can offer plan administrators efficient and effective methods for implementing risk management strategies that can reduce asset and/or funded status risks associated with changes in a range of financial variables including exchange rates, interest rates, market indices and commodity prices. A plan administrator can also use derivatives for other purposes, including speculation, portfolio rebalancing and for liquidity needs. Some examples of derivative transactions that a plan administrator could enter into include a derivative transaction to hedge a part of the interest rate risk inherent in liabilities or to take a position on changes in interest rates, currencies, securities and commodity prices. Derivatives can also expose the pension fund to increased leverage, amplifying returns but also increasing potential losses. Plan administrators should be aware of the risks before entering into a derivative contract.

The use of derivatives, particularly for risk management purposes, can be effective and entirely appropriate for a pension plan. As is the case with all risk-bearing activities, the risk exposures assumed through the pension plan's derivative activities should reflect the risk tolerance level of the pension plan and fund. The use of derivatives should not be considered in isolation but rather as part of the pension fund's overall investment and risk management strategy. Differences between exchange-traded and OTC derivatives in terms of standardization, credit risk, transparency, liquidity, and costs should also be considered by the plan administrator.

This Guideline outlines the factors that OSFI expects administrators of federally regulated private pension plans to consider when developing policies and procedures for the sound risk management of derivative activities. While this Guideline is intended to address sound practices regarding investment in derivatives, other financial instruments (e.g., repurchase agreements[1]) may exhibit some of the same risks. Plan administrators should consider applying similar prudence and risk management processes and procedures in respect of those financial instruments in order to guard against similar risks.

Depending on the complexity and the type of derivative transactions entered into, plan administrators are encouraged to adopt more rigorous controls and standards in their plan's internal risk management framework, as appropriate. As described in the next section, a plan administrator's use of derivatives must be guided by their duty to administer the pension plan and pension fund prudently.

3.0 Prudent Person Standard for the Investment of Pension Plan Assets

Subsections 8(4) and 8(4.1) of the *Pension Benefits Standards Act, 1985* (PBSA) impose a fiduciary standard of care on pension plan administrators when administering the pension plan and the pension fund. Subsection 8(4.1) of the PBSA sets out a "prudent person" standard, which requires the administrator of a pension plan to invest the assets of the pension fund in accordance with the Pension Benefits Standards Regulations, 1985 (PBSR) and in a manner that a reasonable and prudent person would apply in respect of a portfolio of investments of a pension fund. The PBSA also provides that, in carrying out its legislative responsibilities to administer the pension plan and fund, the plan administrator must use all relevant knowledge and skill that the administrator possesses or, by reason of the administrator's profession, business or calling, ought to possess.

A key element of the prudent person standard is its emphasis on exercising due diligence. Accordingly, plan administrators are expected to understand, monitor and mitigate the risks associated with derivative transactions. The exercise of prudence includes making decisions based on proper analysis of adequate information and documenting the factors that were considered and the reasons for making the decision to enter into a derivative transaction. A plan administrator who enters into a derivative transaction will have to consider how the derivative fits within the plan's statement of investment policies and procedures, what role the particular derivative transaction plays in the plan's overall investment portfolio and investment strategy, and the plan's potential exposure to losses from the derivative transaction. After considering all of the relevant information, a plan administrator may decide that the use of derivatives or certain types of derivatives is inappropriate for the pension plan.

4.0 Derivatives Risk Management

4.1 Statement of Investment Policies and Procedures

Subsection 7.1(1) of the PBSR requires that the plan administrator establish a written statement of investment policies and procedures (SIP&P). The SIP&P establishes the broad, overarching objectives, policies and procedures for the investment management of the pension fund. The PBSR requires that the SIP&P include policies and procedures pertaining to specific investment topics including "categories of investments and loans, including

derivatives, options and futures" in which a pension plan is invested.[2]

As required by subsection 7.2(1) of the PBSR, at least once each plan year, the administrator shall review and confirm or amend the SIP&P in respect of the plan`s portfolio of investments and loans.

4.2 Documented Policies and Procedures

In addition to the pension plan's SIP&P, plan administrators should also consider developing and documenting more detailed policies and procedures governing the use of derivatives as part of the pension plan's overall risk management framework. The pension plan's risk management framework should set out the material risks with respect to derivative activities, assess their potential impact, and include policies and procedures for effectively managing those risks.

The content of each pension plan's risk management framework will be different, and the level of detail should be consistent with the complexity and volume of each plan's derivative activities. Plan administrators may wish to seek expert advice when establishing policies and procedures for derivatives risk management.

The pension plan's risk management framework as it relates to the use of derivatives should include the following, as appropriate:

- Who is authorized to enter into derivative transactions on behalf of the pension plan
- A detailed description of authorized derivative investment strategies. For example, the description should state whether the strategy is for hedging , portfolio rebalancing, liquidity needs or for return seeking purposes
- Clearly defined roles and responsibilities for overseeing the pension plan's derivative activities
- Appropriate limits on derivatives risk taking that are consistent with the risk tolerance of the pension plan
- Documented policies and procedures for identifying, monitoring and reporting the risks associated with derivative transactions including stress testing and strategies for mitigating market, credit liquidity and operational risk;
- Documented policies and procedures for identifying and evaluating the costs associated with derivative transactions

- An annual, or more frequent, review of the risk management framework in order to measure its effectiveness and to ensure that the framework remains consistent with the pension plan's investment objectives, financial position and risk tolerance, particularly in light of changing circumstances

5.0 Types of Risk and Risk Mitigation Techniques

The following sections of this Guideline describe the main risks associated with derivative transactions. Best practices for mitigating each of these risks are also described. Best practices for mitigating risk apply where a plan administrator is entering into a derivative transaction or where external investment managers have been delegated authority to enter into derivative transactions on behalf of the plan administrator. Before delegating authority to an external investment manager to enter into a derivative transaction, the plan administrator should exercise appropriate due diligence to ensure that the external investment manager has established best practices for risk mitigation.

The sophistication of the approach to mitigating risk should match the pension plan's use of derivatives and the complexity of the derivative transactions entered into. The best practices for risk mitigation described below under the various risk categories should be considered by plan administrators and documented in the pension plan's risk management framework, as appropriate.

6.0 Market Risk

Market risk is the risk of financial loss arising from adverse changes in the market value (price) of the reference asset or instrument that underlies the derivative transaction. Market risk can be influenced by many factors, including movements in interest rates, credit spreads, equity prices, exchange rates or commodity prices. Plan administrators should pay particular attention to derivative transactions that involve the use of leverage, as these transactions can increase market risk by magnifying losses.

6.1 Mitigating Market Risk

To manage market risk, plan administrators should consider the following:

Monitoring Market Risk and Leverage

Derivative transactions can expose pension plans to market risk from a range of sources, and the amount of exposure can greatly exceed the plan's initial investment. Market risk can be increased due to the significant leverage effect of certain derivatives. For example, a minor fluctuation in the value of the underlying interest can potentially cause large fluctuations in the value of the derivative. The value of a derivative that has a leverage effect can, therefore, be highly volatile.

Plan administrators should ensure that any derivative transactions that involve the use of leverage are understood and closely monitored and managed in order to avoid undue risk. Limits should be established for the amount of leverage that the pension fund may obtain through derivative transactions that are consistent with maximum exposures authorized by the pension plan's risk management framework. When establishing limits on the use of leverage, plan administrators should take into account the pension plan's overall exposure from all of the leveraged investment strategies that the plan has entered into. Setting limits would allow the plan administrator to assess the maximum financial loss to the pension fund in the most extreme market conditions. These limits should be clearly understood by all parties who are authorized to enter into derivative transactions on behalf of the plan. Plan administrators should carefully consider the use of leverage when using derivatives since losses can be greater than the money put into these instruments.

Pricing and Value Measurements

The frequency with which the pension plan's derivative transactions should be valued and reported varies according to the nature and extent of the pension plan's use of derivatives and should reflect the price volatility and time horizon of the derivative transactions being valued.

For non-centrally cleared OTC derivatives, plan administrators should not rely on the counterparty to the transaction as the only source for determining the derivative's value. Plan administrators should consider using independent valuation inputs, and be able to incorporate these independent inputs into their own valuation models to determine pricing and value measurements. The valuation can be performed internally by the plan administrator where it has the appropriate expertise, or outsourced to a third party agent, such as the custodian or fund holder. Plan administrators may also seek to use industry standard methodologies to measure market risk, such as a value

at risk approach[3], potential future exposure or other types of measures. Those measures should be subject to ongoing and independent validation. The risk measure used by the plan administrator should be sufficiently accurate and rigorous. The process for valuing derivatives should be incorporated into the plan's risk management framework.

Monitoring Basis Risk

Basis risk is the risk that the change in value of the derivative used in a hedging strategy will not match the change in price of the interest that it is meant to hedge. This may occur due to how the hedge is constructed and the terms and conditions of the derivative contract that was used to implement the hedging strategy.

Before entering into any hedging strategy, a plan administrator should assess the effectiveness of the strategy and, once in place, monitor the strategy against potential sources of basis risk. For example, a plan administrator may implement a liability-driven investment (LDI) strategy which involves matching the interest rate sensitivity of the plan's assets to its liabilities. This can be achieved by using derivatives to implement a derivative overlay strategy. This strategy allows the plan to achieve this matching without otherwise changing the plan's investment holdings, including the fund's exposure to return seeking assets such as equities. From a pension plan perspective, a gain on the derivative transaction resulting from a decrease in interest rates would help offset an increase in pension plan liabilities. On the other hand, if interest rates rise, a loss on the derivative transaction would be offset by a decrease in the value of plan liabilities. The overlay strategy could be subject to basis risk to the extent that the interest rate on which the value of the derivative contract is based is different from the interest rates used to value the pension plan's liabilities. There would thus be a risk that movements in the derivative based hedges do not offset moves in the liabilities of the pension plan. Basis risk can result in a significant reduction in the effectiveness of a hedging contract (e.g. if the experience of a pension plan is such that the plan's liabilities increase more than the value of the derivative contracts).

7.0 Counterparty Credit Risk

Counterparty credit risk is the risk of loss due to a counterparty's unwillingness or inability to pay its contractual obligations under a derivative contract. When a plan administrator enters into a non-centrally cleared OTC

derivative transaction, the plan administrator takes on the risk that their counterparty will default, causing the loss of market exposure or hedge provided by the derivative transaction and potentially the loss of any unrealized gain from open derivative contracts. Prudent management of counterparty credit risk can help minimize the risk of loss in the event of a counterparty default.

As noted in section 1, counterparty credit risk is mitigated for derivative transactions that are cleared through a central counterparty (CCP). When a derivative transaction is cleared through a CCP, the initial counterparties to the transaction cease to be counterparties to each other; instead, each acquires the CCP as its counterparty. Various measures, including multilateral netting of exposures and the posting of collateral, greatly mitigate the counterparty credit risk that clearing members face with respect to the CCP.

7.1 Mitigating Counterparty Credit Risk

To manage counterparty credit risk, plan administrators should consider the following:

Credit Assessments

Counterparty credit risk can be managed through appropriate measurement of exposures, ongoing monitoring, timely evaluations of counterparties, and sound operating procedures. Before entering into a non-centrally cleared OTC derivative contract, plan administrators should conduct a comprehensive credit assessment of each of its proposed counterparties. Credit limits should be established for each counterparty, taking into account factors such as the creditworthiness of the proposed counterparty and whether collateral arrangements will be in place. A best practice for plan administrators is to diversify their counterparty exposure by limiting the concentration of derivative positions per counterparty and be satisfied that any counterparty credit risk is addressed through appropriate margins and collateral.

Collateral Management

In order to mitigate counterparty credit risk, plan administrators may consider entering into collateral posting agreements with their counterparties.

As previously noted, OTC derivatives that are not centrally cleared generally have higher counterparty credit risk than derivatives cleared through a CCP. Counterparty credit risk can be mitigated for non-centrally cleared OTC derivatives through the use of formal documentation including an International Swaps and Derivatives Association (ISDA) Master Agreement and credit support annexures where applicable. The ISDA Master Agreement sets out the standard legal and credit terms governing the derivative transaction.

Plan administrators should also ensure that any requirements imposed by securities regulators, central counterparties and any other applicable entities are complied with. The pension plan's risk management framework should have policies and procedures for the following:

- Providing the plan administrator with authority to enter into collateral arrangements and for the transfer of collateral pursuant to a derivative contract
- Restricting transactions to high quality counterparties
- Acceptable types of collateral
- The frequency of valuing collateral
- Counterparties use of pledged collateral
- The segregation and holding of collateral
- The management of collateral to ensure that the composition of the pension plan's underlying investment portfolio is not affected

Netting Agreements

One way plan administrators can reduce counterparty credit risk is to consolidate the exposure of the various derivatives transactions entered into with a particular counterparty through the use of a close-out netting mechanism. This can be achieved by entering into a master agreement, such as the ISDA Master Agreement, with each counterparty that provides for appropriate netting arrangements. Netting is the termination or cancellation of individual reciprocal obligations and their replacement with a single payment obligation. As a result of such netting provisions, if certain events occur that are likely to undermine the counterparty's ability to fulfill their obligations, these agreements provide for the consolidation and conversion of multiple obligations between two parties into a single net obligation, which generally reduces exposure to loss.

Plan administrators should control and monitor their derivatives' counterparty credit risk exposures on a net basis only when they have performed a sufficient legal review (e.g., obtaining a legal opinion) to ensure the enforceability of a close-out netting arrangement. A plan administrator should be able to demonstrate that it has exercised appropriate due diligence in evaluating the enforceability of the netting arrangements in place.

8.0 Liquidity Risk

Plan administrators who use derivatives are faced with two types of liquidity risk:

- **Market liquidity risk**: the risk that the plan administrator may not be able to exit or offset a derivatives position quickly or at a reasonable price. This inability may be due to inadequate market depth[4] or stressed market conditions.
- **Funding liquidity risk**: the risk that the plan administrator may not be able to meet the future cash flow obligations from its derivative transactions such as meeting margin calls. Whether the derivatives are exchange traded or OTC derivatives, changes in the mark-to-market value of the derivative may result in the receipt of collateral or the need to post collateral on a daily basis. Plan administrators will therefore need to ensure that a sufficient supply of liquid, eligible collateral instruments is on hand to satisfy potential margin or collateral calls and that the plan has the required operational and management capabilities to manage these transactions.

8.1 Mitigating Liquidity Risk

The pension plan’s risk management framework should address the processes and procedures by which liquidity risk is managed. These processes and procedures should include the following:

- Prior to entering into a derivative transaction, considering the market depth of the derivative transaction
- Monitoring market depth for derivative transactions on an ongoing basis
- Ensuring that when collateral is pledged, the pension fund’s liquidity is not compromised and the pension fund’s overall risk profile is not adversely affected

- Ensuring that sufficient cash reserves and cash equivalent instruments are maintained in the pension fund to meet potential collateral demands

9.0 Operational Risk

Operational risk is the risk of loss resulting from the actions of people, inadequate or failed internal processes and systems, or from external events. This is a particular risk in derivative activities because of the complex and rapidly evolving nature of some derivative strategies. Operational risk also includes legal risk. Legal risk is the risk that a derivative contract will not be legally enforceable. A number of factors contribute to legal risk, including the following:

- The legal capacity and authority of a counterparty to enter into a derivative contract
- The derivative contract documentation being deficient or unenforceable
- The derivative transaction not being in compliance with regulatory requirements

9.1 Mitigating Operational Risk

The controls in place to manage operational risk must be commensurate with the scale and complexity of the derivatives activity being undertaken. Before entering into a derivative transaction, a plan administrator should ensure that there are processes and procedures in place that demonstrate the following:

- That systems can support, and operational capacity can accommodate, the types of derivative transactions that the plan administrator is authorized to engage in
- That all relevant details of derivative transactions are documented
- That there is sufficient staff with the expertise to support the volume and types of derivative transactions that the plan administrator may enter into
- That staff who are involved with making decisions regarding the use of derivatives will be provided with on-going education
- That the methods for valuing positions are appropriate and the assumptions underlying valuation methods are reasonable

Legal Due Diligence

Prior to entering into an OTC derivative transaction, a plan administrator should satisfy itself that the counterparty to the transaction has the regulatory and legal authority to enter into the transaction. A plan administrator should also be satisfied that the terms of the transaction are adequately documented and legally enforceable. This is especially important with respect to provisions concerning the timing of the termination of outstanding transactions and the calculation of settlement amounts payable to or between parties upon the termination of the derivative transaction. In order to promote legal certainty, plan administrators should agree in writing to all material terms governing their trading relationship with their counterparty prior to or at the time of execution of an OTC derivative.

Regulatory Compliance

The 2008 financial crisis uncovered weaknesses in the OTC derivatives market, including the build-up of large counterparty exposures between market participants. In 2009, the G20 agreed to reforms in the OTC derivatives market to implement central clearing and, where appropriate, exchange or electronic trading of standardized OTC derivatives; reporting of transactions to trade repositories; and higher capital as well as margin requirements for non-centrally cleared transactions. These reforms are being implemented globally through legislative and regulatory measures.

Canadian provincial securities regulators and OSFI, along with authorities in other jurisdictions, are implementing the reforms agreed to by the G20. Plan administrators should be aware that they and/or their counterparties may be subject to specific regulatory requirements for registering, central clearing, risk mitigation and trade reporting if they transact in OTC derivatives.

Given the global nature of derivatives markets, plan administrators should have procedures for identifying, communicating, managing and mitigating regulatory compliance risk. Plan administrators should also maintain knowledge of the regulatory requirements that apply to their derivative activities, for all relevant jurisdictions.

10.0 Indirect Investment in Derivatives

Pension funds can gain indirect exposure to derivative investments via external managers in a number of ways. For example, a plan administrator can invest in a pooled, investment or hedge fund that enters into derivative transactions or the plan administrator may provide an external manager with a mandate to enter into derivative transactions. In either case, ultimate responsibility for the strategy and investments lies with the plan administrator.

Before a pension plan gains indirect derivatives exposure, the plan administrator should obtain sufficient information to determine the external manager's strategy with respect to use of derivatives, the extent of investment by the manager in derivatives, and such other information as would be appropriate under the circumstances. For example, before investing in a pooled, investment or hedge fund that uses derivatives, a plan administrator should conduct an appropriate due diligence process that includes the following:

- Reviewing all relevant information concerning the external manager’s use of derivatives
- Conducting reasonable inquiries into the external manager’s overall internal control procedures and risk management framework relating to the use of derivatives
- Considering whether the internal control procedures and risk management framework appropriately mitigate the risks that are set out in Sections 6 to 9 of this Guideline
- Documenting the procedures that were performed to validate the external manager’s overall internal control procedures and risk management framework
- Reviewing how the external manager obtains valuations for derivatives for which prices are not publicly available
- Considering the risks associated with the lack of control over the investment
- Seeking independent advice or expertise as is prudent and reasonable
- After considering the above factors, determining the percentage of the pension fund, if any, that it is prudent to invest with the external manager

If, after conducting appropriate due diligence, a plan administrator decides to invest in a pooled, investment or hedge fund, the plan administrator should carry out such supervision or monitoring of the investment as is prudent and reasonable. This may include obtaining periodic compliance certifications from the external manager.

11.0 Conducting Stress Testing

Plan administrators should, as appropriate, conduct stress testing of the pension plan's derivative transactions under various market conditions and scenarios. Plan administrators should incorporate within the stress testing procedures the likelihood of adverse events affecting derivative exposures (including adverse market movements, heightened counterparty credit or liquidity risks, or other possible events) to ensure that the plan administrator is aware of potential losses that the plan is exposed to from its derivative transactions.

Stress testing helps to identify how the pension plan's investment portfolio and liabilities respond to shifts in relevant economic variables or risk parameters. The sophistication of a pension plan's stress testing should be proportionate with the size and complexity of the plan's derivative activities.

12.0 Best Practices

The prudent use of derivatives has the potential to enhance investment returns and reduce risks. If not used properly, however, derivatives can lead to substantial losses for a pension plan. In order to use these instruments effectively, plan administrators must understand how derivative instruments can alter the risk and return profile of the pension plan and pension fund, and have a sound risk management framework to prevent unintended consequences.

Plan administrators have considerable choice regarding how they monitor and manage risk. At the same time, derivative strategies and investment portfolio compositions have become increasingly complex – which in turn requires more sophisticated risk management policies and procedures. This makes it even more important for plan administrators to understand, monitor and manage their risk exposures. As risk management practices for derivatives are constantly evolving, OSFI expects plan administrators to remain current with best practices and to adopt such practices as applicable.

1 A repurchase agreement or repo is a contract in which the seller of a security agrees to repurchase it from the buyer at a (higher) specified price at a designated future date, usually within a short period of time. Repos can be traded in much the same way as derivatives can be, either over-the-counter, or through an exchange (such as the Montreal Exchange in Canada) using a central counterparty (such as the Canadian Derivatives Clearing Corporation). Repurchase agreements are referred to as reverse repos from the buyer perspective.

2 Paragraph 7.1(1)(a) of the PBSR.

3 Value at risk (VaR) is a technique that uses statistical analysis of historical data to estimate the likelihood that a given portfolio's losses will exceed a certain amount.

4 Market depth refers to the number of open buy and sell orders for a security at different prices. This provides an indication of the liquidity of that security.