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Note: Where this guidance note conflicts with the Financial Services Commission of Ontario Act, 1997, S.O. 1997, c. 28 (FSCO Act), the Pension Benefits Act, R.S.O. 1990, c. P.8 (PBA) or Regulation 909, R.R.O. 1990 (Regulation), the FSCO Act, PBA or Regulation govern.

*Note: The electronic version of this guidance note, including direct access to all linked references, is available on FSCO's website at www.fSCO.gov.on.ca. All pension policies and guidance notes can be accessed from the **Pensions** section of the website through the **Pension Policies** link.*

This guidance note includes technical terms that are specific to the subject matter covered. When used for the first time, these terms are bolded and cross-referenced to a glossary at the end of the document.

1.0 Purpose

An administrator of a pension plan (administrator) is responsible for investing the pension fund in accordance with the administrator's standard of care, in a prudent manner and in the best interests of the pension plan's beneficiaries. Prudent investing entails understanding, monitoring and mitigating risk. The purpose of this Guidance Note is to assist those administrators who have determined that derivatives are appropriate in the context of their particular plans and funds in developing appropriate policies and procedures relating to those investments and their associated risks.

This Guidance Note is intended to provide detailed guidance with respect to prudent investment practices related to derivatives. This Guidance Note is not an exhaustive checklist, but rather a starting point. Administrators should consider how this Guidance Note best applies to each plan, keeping in the plan's size, membership demographics, investment goals and objectives, and other relevant factors. Prudence may require some plans to have much more rigorous practices and procedures than others. Prudence may also lead the administrator to a determination that derivatives investments, or certain types of derivatives are inappropriate for a particular fund. It is the responsibility of the administrator to make these determinations.

This Guidance Note is also intended to assist administrators who indirectly invest in derivatives, for example, through a pooled fund or master trust arrangement that invests some of its assets in derivatives. See [section 7.0 \(Pooled Funds and Master Trusts\)](#) for more information on FSCO's expectations regarding pooled funds and master trusts.

While [repurchase agreements \(repos\)](#) are not generally considered to be derivatives, they do have similar risks associated with them as derivatives. As such, administrators should apply similar prudence, consideration and risk management processes and procedures to repos as are suggested for derivatives in this Guidance Note.

2.0 Background

A derivative is a financial contract whose value is derived from some [underlying](#) asset, index or financial rate. Derivatives are used as a [hedge](#) to reduce certain risks and account for a significant part of trading in global financial markets. They are flexible and can be combined with other instruments to create [synthetic exposures](#) and portfolios that have risk and return profiles similar to more traditional investments, potentially at a lower trading cost.

While derivatives can reduce risks, the specific nature and complexity of derivatives can also substantially increase risks across investment portfolios, depending on how they are used. Some of these risks include market risk, basis risk, liquidity risk, counterparty risk and operations and systems risks. For more information on these risks, refer to [section 6.0 \(Risk Monitoring\)](#).

[Exchange-traded derivatives \(ETD\)](#) are standardized and traded through an exchange which acts as a [central counterparty](#). [Non-standard over-the-counter derivatives \(non-standard OTC\)](#) present the greatest challenges because they are tailored to the circumstances of the contracting counterparties, are more difficult to value, are less liquid, and do not benefit from some of the protections offered by a central counterparty.

Canadian provincial securities regulators and authorities in other jurisdictions are implementing [G20 commitments](#) to create a comprehensive regulatory regime for OTC derivatives. Administrators should be aware that they and/or their counterparties may be subject to specific regulatory requirements for registering, central clearing, risk mitigation techniques and trade reporting if they deal in OTC derivatives. As a consequence, some [standardized OTC derivatives \(standard OTC\)](#), like the majority of Canadian interest rate swaps, are now centrally cleared, mainly through SwapClear in the UK.

Before the 2008 financial crisis, investor [risk tolerances](#) were generally high and derivatives were viewed as a way to target specific risks. The financial crisis revealed the extent of counterparty risk and deficient risk management practices. Investors in OTC derivatives who obtained insufficient [collateral](#) were left to find transactions to offset losses resulting from bankrupt counterparties.

It is now apparent that some investors did not understand the risks inherent in the complex OTC derivatives products they were purchasing and, in some cases, did not know the identities of their counterparties. The financial crisis highlighted the risks associated with a lack of management oversight and documentation, and the importance of taking a considered and comprehensive approach to the risks of derivatives.

3.0 Prudence and the Pension Regulatory Framework

Section 22 of the PBA sets out the administrator's statutory standard of care in the administration of a pension plan and fund, including the requirement that an administrator "exercise the care, diligence and skill in the administration and investment of the pension fund that a person of ordinary prudence would exercise in dealing with the property of another person" and to use "all relevant knowledge and skill that the administrator possesses or, by reason of the administrator's profession, business or calling, ought to possess." This fiduciary standard is often referred to as the [Prudent Person Rule](#).

It is the administrator's duty to ensure that all investments, including derivatives, comply with all applicable statutory provisions and regulations, including the Prudent Person Rule. The Regulation and the Federal Investment Regulations (FIR) have few requirements related to specific types of investments, including derivatives.¹ The use of derivatives is judged primarily in terms of the overall context of the plan and the investment portfolio.

Prudence includes making decisions based on the consideration of sufficient and relevant information and documenting the decisions, the reasons for them and the factors considered. It includes minimizing the risk of large losses to a pension fund associated with a sizable exposure to a single counterparty, asset or class of assets, and considering the risks of using derivatives compared to other investments with the same potential benefits.

4.0 Documentation

Section 78 of the Regulation requires the administrator to establish a Statement of Investment Policies and Procedures (SIP&P) for the plan that meets the requirements of the FIR which include the "categories of investments and loans, including derivatives, options and futures."² The plan's SIP&P should be consistent with the pension fund's diversification, asset mix, liquidity and the value measurement of investments.

Administrators should also consider developing and documenting risk management practices (RMP) for pension fund investments. Sound RMP require written policies and procedures that:

- clearly delineate responsibility for managing risk;
- put in place adequate systems for measuring risk;
- create appropriately structured limits on risk taking;
- establish independent internal controls; and
- describe audit mechanisms and timely risk monitoring and reporting.

RMP policies and procedures should reflect the degree and complexity of the derivatives investment strategies employed by the plan and disclose the intended purpose, use and strategies involving derivatives in which the administrator or those with investment

¹ The FIR are defined in section 66 of the Regulation as sections 6, 7, 7.1 and 7.2 and Schedule III to the Pension Benefits Standards Regulations, 1985 made under the Pension Benefits Standards Act, 1985 (Canada) as they may be amended from time to time. Section 79 of the Regulation provides that pension assets must be invested in accordance with the FIR (as modified in sections 47.8 and 79 of the Regulation).

² Section 7.1 (1)(a) of the FIR.

responsibilities are permitted to engage (e.g. to modify asset allocations, adjust [duration](#), create synthetic securities, hedge certain positions).

FSCO's expectations regarding Documentation include:

- Authorized use of derivatives is documented in the SIP&P and each category of derivative in which the pension fund is to invest is properly listed with a reasonable amount of specificity in the SIP&P. The proportion of the fair value of the portfolio that may be invested in derivatives, or put at risk through derivative investments, is clearly set out in the SIP&P.
- The extent to which assets of the plan may be pledged as collateral is clearly set out in the SIP&P. No assets are pledged except in accordance with the terms of the pension plan (including funding agreements) and the SIP&P.
- RMP documentation is established by the administrator that includes the following:
 - the uses and strategies to which the derivatives will be put in light of the Prudent Person Rule, the overall investment objectives, risk appetites and risk tolerances of the fund and the nature of the plan benefit liabilities, taking into consideration the funding and solvency of the plan and the ability of the plan to meet its financial obligations;
 - risk management considerations which include descriptions of main types of risks associated with derivative positions, risk measurement methodology, risk mitigation strategies, timely risk monitoring and reporting, and establishment of specific and unambiguous limits on derivative activities;
 - individuals or organizational units who are authorized to trade, settle, value and/or manage the risk created by derivatives positions, giving regard to segregation of responsibilities and management oversight;
 - independent internal controls, appropriately scaled audit mechanisms and compliance enforcement.
- RMP documentation and risk management processes are reviewed at least annually and updated promptly when statutory requirements or investment processes change.

5.0 Risk Mitigation

Given the potential risks inherent in derivatives, a number of risk mitigation best practices are used by market participants to help reduce unnecessary risks. The practices described in section 5.1 and 5.2 below apply primarily to non-standard OTC derivatives. The practices described in section 5.3, 5.4 and 5.5 apply equally to ETD and all OTC derivatives.

These best practices apply whether the investment is done directly by the administrator or has been delegated to an external investment manager. In cases where external investment managers are using derivatives, appropriate operational due diligence should be performed to ensure that appropriate RMP are employed, including those set out below.

5.1 Pricing and Value Measurement of Derivatives

The pricing of standard OTC derivatives and ETD is reasonably transparent because prices are quoted on derivatives exchanges; however, it can be challenging to determine the fair pricing of non-standard OTC derivatives at contract inception because they are not traded through exchanges.

In non-standard OTC derivative transactions, each counterparty has the responsibility to review and evaluate the terms and conditions of the contract and to obtain such additional information or independent professional assistance as it may require.

Derivatives need to be valued regularly with the same frequency and assumptions as other portfolio holdings. The plan administrator should use independent value measurement methodology for non-standard OTC derivatives and should not rely on counterparties as the exclusive source of derivative values. In some cases, the valuation can be outsourced to a third party agent, such as the custodian or fund holder.

5.2 Netting Agreements

Counterparties to non-standard OTC derivatives typically enter into **netting** agreements that allow for netting on settlement or liquidation. There is a risk that incomplete or inadequate documentation could result in legal disputes, especially in the case of a default or insolvency of one of the parties.

Standardized documentation, such as the International Swaps and Derivatives Association (ISDA) Master Agreement, is used by most market participants when trading in non-standard OTC derivatives to help mitigate credit risk by ensuring the enforceability of netting. The ISDA Master Agreement sets out the standard legal and credit relationships between the parties, so the parties are not required to repeat standard terms in every transaction between them. Standardized documentation is also used for repos.

5.3 Collateral Requirements

Some derivatives require the posting of collateral to a counterparty as the price of the derivative changes over time. Generally, they also require the delivery of cash or securities at maturity or when the derivative is exercised.

Some non-standard OTC derivatives have a minimum transfer amount indicating the degree of exposure permitted before one party will require additional collateral to be given. Terms are negotiated and documented in a credit support annex (CSA) to the master agreement. Adding a CSA allows the parties to specify the collateral that will be available in the event of a default.

Administrators should consider the collateral requirements appropriate for each derivative investment. It is important that administrators ensure that sufficient collateral is obtained in terms of nature, amount and quality, depending on the transaction. Terms and conditions regarding collateral should be properly documented.

Administrators should consider requirements imposed by regulators (including securities regulators), central counterparties and any other applicable entity. Specific requirements may relate to:

- acceptable types of collateral;
- the frequency of exposure or mark to market valuation;
- restrictions on re-hypothecation; and
- the segregation and holding of collateral.

Central counterparties that clear standard OTC derivatives often require collateral to be in the form of cash instead of the long-term financial assets in which pension funds typically invest (e.g. government bonds).

5.4 Limits on Derivative Activities

The pension fund's exposure to derivatives and repos should be subject to limits based on the intended use and strategies for derivatives and the risks associated with them.

These specific and unambiguous quantitative limits should be connected to the mark to market valuation of the position with a counterparty, the percentage of the fair value of the fund's investment assets (net of investment liabilities) put at risk, and the SIP&P.

Limits should be set at two levels: soft limits, where positions must be analyzed, and hard limits, where positions must be liquidated to comply with the quantitative limits that have been set.

5.5 Limits on Variable Compensation

Compensation practices for management and staff involved in derivative activities should be set so as to avoid undue risk-taking.

FSCO's expectations regarding Risk Mitigation include:

- Valuation of non-standard OTC derivatives are periodically provided by sources independent from counterparties. Value measurement can be outsourced to a third party where a contract specifies valuation procedures and the need for independent price sources.
- Appropriate legal documentation with appropriate collateral requirements is used with counterparties of non-standard OTC derivative trades and repos (e.g. master agreements, CSAs).

- Appropriate legal advice is obtained and appropriate legal due diligence is completed, including consideration of the ability to contain potential losses (e.g. stop loss provisions, the ability to terminate the contract).
- Appropriate mechanisms exist (either in the documentation or by virtue of the nature of the investment) to permit the administrator or its agent to contain potential losses.
- Original documents are stored safely in compliance with FSCO's Policy A300-200 (Management and Retention of Pension Plan Records by the Administrator).
- Quantitative limits to derivatives exposures are set by the administrator.
- The administrator will not enter into non-standard OTC derivative or repo contracts with a counterparty or associated counterparties where the exposure or mark to market position of all contracts with the counterparty or associated counterparties is greater than 10 per cent of the fair value of the fund's investment assets (net of investment liabilities), or such other limit as may be prudent.
- Compensation policies are set so as to discourage excessive risk-taking.

6.0 Risk Monitoring

Derivatives are subject to the same risks as other investments. However, the lack of transparency and leverage effect of some derivatives result in traditional risks manifesting themselves differently, thereby requiring more precise assessment and more frequent monitoring.

6.1 Market Risk Leverage

Some derivatives expose the holders to market risk in ways that are disproportionate to any initial cash outlay. A minor fluctuation in the value of the underlying could cause a major fluctuation in the value of a derivative. Other derivatives are effective in reducing market risk exposures.

Accordingly, the plan's exposure to each source of market risk should be controlled and monitored in a comprehensive manner. At a minimum, limits should be established for the sensitivity of a fund's portfolio to both expected and unexpected changes in discrete risk factors such as interest rates, foreign exchange rates, equity and commodity prices. Leverage should also be carefully and frequently monitored and controlled to avoid undue risk to the pension fund.

6.2 Liquidity Risk

Market liquidity of the underlying can have a serious effect on cash and derivative positions. If there is insufficient market activity, it may be difficult to unwind a position quickly enough to avoid serious losses. The ability to provide cash to satisfy collateral requirements on derivatives positions must also be managed.

Liquidity controls for non-standard OTC derivatives include assessing the ability and willingness of a counterparty to unwind a contract, if and when necessary.

6.3 Counterparty Risk

Counterparty risk monitoring encompasses a comprehensive credit assessment of each organization with which the pension plan is entering into non-standard OTC derivative contracts. This includes initial approval, assigning credit risk ratings, setting credit limits and ongoing reviews of all trading counterparties. All of these activities should be performed by persons who are independent of those engaging in transactions.

The pension fund's exposure to a specific counterparty and to associated counterparties should be subject to a hard limit based on the exposure or mark-to-market position of all contracts existing with this counterparty.

6.4 Basis Risk

Plan administrators should evaluate and monitor the effectiveness of hedging strategies against basis risk.

Basis risk is the risk that the prices of financial instruments in a hedging strategy will move in a way that reduces the effectiveness of the hedging strategy. Basis risk arises when an administrator uses a derivative to hedge against a risk exposure which differs from the risk exposure of the index on which the derivative contract is based.

For example, a longevity swap which results in a stream of payments based on current and future mortality tables issued by a particular actuarial association might not effectively hedge against plan member longevity where the longevity experience of the plan does not reasonably mirror the mortality tables. In this example, basis risk arises because the plan's demographics are not similar to that of the population on which the mortality tables are based.

6.5 Operations and Systems Risk

Deficiencies in information systems or internal controls could result in unexpected losses for a pension fund. Operating risks should be assessed through periodic reviews of procedures, data processing systems, contingency plans and other operating practices. The design of information systems should vary according to the scope and complexity of a fund's involvement in derivatives.

FSCO's expectations regarding Risk Monitoring include:

- Appropriate mechanisms are in place for precise and frequent monitoring of the risks associated with all investment positions, including derivatives.
- The fund's portfolio is monitored with a view to triggering the loss mitigation mechanisms, as appropriate.
- Initial approval and ongoing review of counterparties in non-standard OTC derivatives positions are performed by persons independent of those engaging in derivative transactions.
- Counterparties who suffer a credit rating downgrade by an independent credit rating agency are automatically reviewed.
- Ongoing monitoring is conducted to ensure that the exposure or mark-to-market position of all non-standard OTC derivative and repo contracts with a specific

counterparty or associated counterparties does not exceed 10 per cent of the fair value of the fund's investment assets (net of investment liabilities), or such other limit as may be prudent in the circumstances.

- Ongoing monitoring is conducted to ensure that the percentage of the fair value of the fund's investment assets (net of investment liabilities) that is invested in derivatives does not exceed limits set out in the SIP&P.
- Scenario analysis and stress testing are carried out to determine the potential impact of derivatives and other positions.
- Reviews of procedures, data processing systems, contingency plans and other operating practices are performed at least once each year.

6.6 Stress Testing

Scenario testing and stress testing are useful tools for determining potential impacts of derivative positions on the pension fund. Simulated scenarios may consist of historical or hypothetical events or be based on probabilistic random variables models. These analyses allow the pension plan to assess the risks to which it is exposed, both in connection with its derivatives activities and the total value of the fund.

7.0 Pooled Funds and Master Trusts

Where a pension fund's assets are invested through a pooled fund or master trust arrangement, which in turn invests some of its assets in derivatives, it is still necessary for administrators to implement appropriate risk management practices and procedures.

An administrator investing in a pooled fund that is open for investment to unrelated entities may not be in a position to ensure that standards recommended in this Guidance Note are met by the pooled fund investment manager. In such a case, before deciding to invest in a pooled fund, administrators should:

- review available relevant information or disclosure regarding the proposed arrangement;
- consider whether the operation of the pooled fund, as described in its constitutional documents, meets the standards set out in this Guidance Note;
- consider the suitability of any investment manager of the pooled fund assets;
- consider any risks associated with the lack of control over the investments in the pooled fund;
- having considered the above factors, consider the percentage of the fund, if any, that it is prudent to invest in the pooled fund; and,
- obtain such independent advice or expertise as is prudent and reasonable.

If, after due consideration, the administrator decides to invest in the pooled fund, the administrator should carry out such supervision or monitoring of the investment as is prudent and reasonable.

Where the investors in a master trust are all pension funds governed by pension plans that have related employers and sponsors (e.g. in the same corporate group), FSCO expects that the master trust, to the extent that it invests in derivatives, will be invested in accordance with this Guidance Note and will be required to do so under its constituting documents or through agreements entered into with the administrators of participating funds.

Public consultation

8.0 Glossary

In this Guidance Note:

Central counterparty is an organization such as a clearing house, usually backed by a bank, which facilitates trading done in derivatives and equities markets by acting as an intermediary and bearing the credit risk of the transaction. If two parties deal with one another, the buyer bears the credit risk of the seller, and vice versa; however, if a central counterparty is used, the credit risk to both parties is that of the central counterparty, which is generally considerably lower. Central counterparties provide efficiency and stability to the financial markets in which they operate. The Canadian Derivatives Clearing Corporation is an example of a Canadian central counterparty which clears and settles derivatives transactions.

Collateral is property or other assets, including cash, that a party to a derivative contract posts to secure incurred losses as the price of a derivative changes following a price change in the underlying. The terms for the posting of collateral are typically agreed between the parties at the onset of the contract.

Duration is a measure of the sensitivity of the price of a fixed-income investment to a change in interest rates.

Exchange-traded derivative or **ETD** is a derivative whose pricing, clearing and settlement is conducted on specialized derivatives exchanges like the Montreal Exchange in Canada. These exchanges play the role of central counterparty. ETDs include options, futures, caps, floors, collars and forward contracts.

Exposure or mark to market valuation is the daily computation of gains and losses of the change in the market price of a derivative.

G20 commitments ensue from the resolve of the G20 Leaders in 2009 to a comprehensive reform agenda to improve transparency in the over-the-counter derivative markets, mitigate systemic risk and protect against market abuse.

Hedge is a position in place to reduce the risk of adverse price movements in an asset. A hedge consists of taking an offsetting position in a financial instrument, such as the use of a futures contract. Hedging may reduce a party's exposure to a market risk but introduce liquidity and counterparty risk that must be considered.

Netting is the process of offsetting amounts owed by each party to the other in a derivatives contract, especially in the case of a swap. Instead of each agreement leading to a stream of individual payments by each party to the other, all of the amounts are periodically netted together so that only one net payment is being made by one party to the second party.

Non-standard Over-the-counter derivative or **non-standard OTC** is a derivative that does not trade on an exchange. A non-standard OTC derivative is an agreement between counterparties and is subject to default risk. Non-standard OTC derivatives include swaps, options, swaptions (options to enter into swaps).

Prudent Person Rule, as used in this Guidance Note, is the fiduciary standard set out in section 22 of the PBA, which, in part, requires individuals and entities with responsibility for managing the assets of the pension fund to do so in a careful, reasonable and professional manner having regard to the best interests of the pension fund beneficiaries. This rule focuses on behaviours and processes in decision making including the requirement that a decision must be based on proper consideration of adequate information and only relevant factors. The decision, the reasons for it and the factors that were considered must all be documented.

Repurchase agreement or **repo** is a contract in which the seller of a security agrees to repurchase it from the buyer at a (higher) set price, 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 or reverses from the buyer perspective.

Risk tolerances are the degree of variability in investment returns, or risks to the investment fund, that an administrator is prepared to tolerate for the plan. An administrator should have a clear understanding of the risk profile of investments and the level of risk that is prudent in the context of the particular plan and the pension fund's assets as a whole.

Standard Over-the-counter derivative or **standard OTC** is an OTC derivative for which provincial securities regulators have introduced mandatory central clearing requirements. Standard OTC are traded on exchanges or electronic trading platforms, are cleared through central counterparties and are reported to trade repositories.

Synthetic exposures are strategies that combine the use of cash and derivatives to create a position that has almost the same risk-reward attributes as a physical security, but with added advantages, such as cost, flexibility and liquidity.

Underlying is the asset, security, index or interest rate on which a derivative contract is based; the value of the derivative contract changes in response to changes in the price or level of the underlying asset, security, index or interest rate. There is a wide array of underlying exposures such as interest rates, security prices, commodity prices, foreign exchange rates, indexes of prices or rates, credit ratings, credit indexes and mortality rates.