Market Risk Management

(Investment Management)

Executive Summary

The primary objective of investment management is to secure a reasonable return on funds invested in assets other than loans while avoiding undue risk. This is accomplished by establishing parameters on investment quality, term to maturity and rate of return, and where investments are risk bearing, investment diversification.

Investments are defined, for purposes of sound business and financial practices, to be assets of a credit union other than its loans, and other than its liquid assets held for operating liquidity needs. There are four broad categories of investments reviewed in this chapter:

- Financial instruments (debt and equity)
- Real estate (not including mortgages)
- Capital assets
- Investment in subsidiaries

In making investments decisions, a credit union must comply with the conditions and restrictions of the Act and Regulations, and in its investment policy. The regulatory restrictions and conditions dealing with investments are also briefly discussed in this chapter.

Derivative instruments are not discussed in this chapter, because conceptually, they are not investment instruments as much as they are tools of asset/liability management. For a complete discussion on derivative instruments and their use, refer to Chapter 7 on Asset/ Liability Management.

A credit union can meet standards of sound business and financial practices by ensuring it has developed and implemented investment policies, risk and performance measurement techniques, and risk management procedures comparable to those contained in this chapter. Policies, measurement techniques and procedures should be appropriate for the size and complexity of the credit union's operation.

Legislative Summary

Investment related regulatory requirements are prescribed in Part VIII of the Act, Part VIII of Regulation 76/95, and the FSCO Guideline for Prudent Investment and Lending. These regulatory requirements mainly prescribe restrictions on investments made by credit unions.

Restrictions and conditions of investment in subsidiaries is also prescribed in the legislation. Finally, FSCO's Guideline for Prudent Investment and Lending establishes minimum guidelines for establishing lending and investment policies and procedures.

Provided below is a summary of the important regulatory restrictions pertaining to investment management. Readers should refer to the Act, Regulation 76/95 and relevant Ministry Guidelines for a complete description of a credit union's regulatory rights and obligations.

Schedule 6.1
RELEVANT INVESTMENT RELATED LEGISLATION

	The Act	**Regulation 76/95**
Adherence to investment policies and procedures	190	
Establishment of written investment policies and procedures	191	50*
Changes to policies and procedures required by the Superintendent of Financial Services	192	
Eligible investments	198(1)	66-69
Exception - open basket clause	198(2)	E70
Single investment restriction	199	71, 72, 73
Investments in subsidiaries	200	74, 75, 76
Investments in other credit unions	201	
Investments upon amalgamation	202	

* Also refer to FSCO's *Guidelines for Prudent Investment and Lending Policies and Procedures.*

Policy

It is recommended that the credit union adopt an investment policy that addresses:
limits on volume (as a percentage of capital and deposits) and quality of investments (i.e. credit ratings);

- delegated investment approval limits;
- documented criteria for making investment decisions;
- authorized types, limits and concentration of investments, other financial instruments and assets;
- monitoring value and yields of investments;
- identifying, measuring and providing for market impairments
- frequency, form and content for board reporting.

These recommended objectives of investment policy are discussed in greater depth in Sections 6201 to 6206. Adopting an investment policy will assist the credit union to manage risk and to comply with the Standards in DICO By-law No. 5. For recommended operational procedures refer to Section 6500.

Reference Materials

Examples of investment policy are available in the DICO publication Sample Policies, and are available to the industry for customization as appropriate. As well, the information provided in Sections 6201 to 6206 will also assist in establishing policies of investment management.

Regulatory Policy Requirements

Section 191(2) of the Act also requires credit unions to establish investment policies and procedures. FSCO has published Guidelines for Prudent Investment and Lending Policies and Procedures, which sets out guidelines for establishing investment policies and procedures.

When establishing investment policies and procedures, management and the board should ensure they meet FSCO requirements as well as By-law No. 5 requirements. In addition to By-law No. 5 criteria and FSCO criteria, credit unions may elect to establish other investment policies as they see fit.

Regulatory Compliance

Investment policies must not conflict with requirements prescribed by the Act, Regulation 76/95 and any interpretative bulletins or guidelines issued by the FSCO. It is optimal for key regulatory investment restrictions to be repeated in investment policies for greater clarity and ease of reference.

Investment Management Philosophy

Adopting an investment management philosophy is an important first step in drafting investment policy. The investment philosophy sets out the broad goals and objectives of the credit union's investment portfolio, as established by the board of directors. This philosophy should provide guidance in setting investment limits, making investment decisions, and in addressing new situations where policy does not yet exist.

While goals and objectives will differ depending upon the circumstances and environment of the credit union, important principles of investment management should always include the following:

- Investment decisions are made in the best interests of members and the credit union.
- Investment decisions are made in accordance with the general level of risk the credit union is willing to accept.
- Investments decisions are made in accordance with defined performance tests and prudent standards.
- Investment practices adhere to the principles of quality (or safety) of the investment and risk diversification.

Volume and Quality

Investment policy establishes limits on the level of risk in the investment portfolio. Schedule 6.2 below summarizes the different types of risk that can affect the safety or quality of an investment.

Schedule 6.2 *INVESTMENT RISK*	
Credit Risk (default risk)	Refers to the chance that the issuer of the debt security will not meet its obligations of interest and principal payments.
Market Risk (systematic risk)	The risk that changes in the interest rate will reduce the market value of an investment.
Yield Risk (financial risk)	Refers to the chance that the investment will not be profitable.

Eligible Investments

The credit union will want to establish a list of eligible investments for their portfolio. This list should include investments which are considered to have sufficient quality (i.e. safety) given the credit union's level of risk aversion. This list will also have to comply with the eligible investments prescribed in sections 66 to 69 of Regulation 76/95. Refer to Schedule 6.3 for a sample Eligible Investments list.

A credit union may choose to prohibit any investment in some or all of the various risk bearing investments. This may be the case for operations which have historically experienced low levels of liquidity; long term investments may be the out of the question. Consequently, these instruments should be excluded from the Eligible Investments schedule, or specifically prohibited elsewhere in the policy. Investments that are risk bearing are identified in Schedule 6.4 on the following page.

Schedule 6.3
SAMPLE ELIGIBLE INVESTMENTS SCHEDULE

Quality investments which may be purchased as part of the financial asset portfolio are as follows:

- deposits in a league or a Schedule A bank;
- treasury bills issued by Canadian governments;
- bonds and debentures unconditionally guaranteed by Canadian governments;
- acceptances issued by Schedule I banks or Schedule I banks with a DBRS rating of R-1 low or better;
- commercial paper issued by corporations with a DBRS rating of R-1 mid or better; purchase of derivative financial instruments, only if used for interest rate hedging purposes and subject to the constraints in the Asset/Liability Management policy.

Schedule 6.4 *RISK AND NON-RISK BEARING FINANCIAL INSTRUMENTS*	
Non-risk bearing financial instruments **(i.e. risk is minimal)**	**Risk bearing financial instruments**
• Deposits in a league • Membership shares in a league • Canadian federal or provincial government guaranteed debt • Deposits and acceptances of any Schedule I Canadian bank	• Money market instruments • Long term debt instruments • Corporate shares • Real estate • Capital asset investments • Investment in subsidiaries of the credit union

Investment Limits

Investment limits can help a credit union ensure that its investment portfolio is sufficiently diversified, and that it remains exposed to an acceptable level of risk.

The starting point for setting investment limits should be the comprehensive limits set out in the Act (sections 198 to 202) and Regulation 76/95 (sections 66 to 76). In setting policy, the credit union can either adopt the limits set out in the Act, or select more restrictive limits.

The recommended approach to setting investment limits is to have one set of limits for all broad asset categories, and then a separate set of limits for financial instruments. Schedules 6.5 and 6.6 illustrate sample portfolio limits in this manner. In the first schedule, limits are established in relation to total capital and deposits.

Schedule 6.5 *SAMPLE LIMITS: ASSET CATEGORIES*		
Investments Assets	**Policy Limit***	**Regulatory Limit***
Financial Instruments	see Schedule 6.6	
Aggregate improved real estate for own use and revenue producing purposes	7%	10%
Aggregate investments in subsidiaries	5%	5%
Aggregate equity investments in corporate shares	2%	5%
* Expressed as a per cent of capital and deposits		

In Schedule 6.6, limits are established on investment in financial instruments in relation to the size of the overall investment portfolio. Minimum limits should also be established on the quality of financial instruments (i.e. credit ratings) where available.

Credit unions can determine the quality of a financial instrument by referring to the ratings given by an independent bond rating service. In Canada, there are two bond rating services: Dominion Bond Rating Service (DBRS) and Canadian Bond Rating Service (CBRS). Different rating scales are used depending upon the bond rating service used, and upon the instrument being rated (there is a separate scale for bonds and for commercial paper and short term debt).

A credit union should be familiar with the rating scales used by the bond rating service that they use. Management can establish minimum quality parameters for financial instruments that reflect the level of risk the credit union is willing to undertake. An example of such limits, based on the DBRS rating scale, are provided below in Schedule 6.6.

Schedule 6.6
Sample Limits: Financial Instruments

Financial Instrument	**% of Investment Portfolio**	**Quality (credit rating)**
(i) league deposits	no limits	N/A
(ii) treasury bills	no limit	R1-M
(iii) government short term paper	no limit	R1-M
(iv) Schedule I banks: deposits, acceptances	no limit	R1-M
(v) Schedule II banks: deposits, acceptances (diversified by bank)	25% of portfolio, maximum	R1-M
(vi) commercial paper	30% of portfolio, maximum	R1-L

Limits can also be set on the term of investment, and on foreign currency risk. For a sample of specific investment limits, see the sample Investment Policies, Versions A and B, provided in the DICO publication Sample Policies.

Investment Options

The following paragraphs provide guidance with respect to sound limits on portfolio composition by investment category, as well as justification for choosing investment limits that are more restrictive than those prescribed in the Act.

Money Market Instruments

These highly liquid instruments include league or Schedule I Bank deposits, Treasury Bills and other federal government securities maturing in one year or less, Bankers' Acceptances, and Certificates of Deposit (CDs). These investments are generally regarded to be free of risk. Schedule 6.7 summarizes the basic differences between different money market instruments.

Commercial Paper and Mutual Funds

Caution should be exercised when investing in commercial paper and money market mutual funds due to their inherent market risk. These portfolio investments will fluctuate in value more than government or bank guaranteed securities and may require accounting adjustments to market value (if values decline) in accordance with generally accepted accounting principles.

Long Term Debt Instruments

Investment of excess liquidity into longer term bonds (i.e. maturities over three years and consisting of government or corporate debt or bond mutual funds) is an alternative investment strategy but not without significant risk. Corporate debt is at risk, and during periods of volatile interest rates, liquidation of a corporate or government bond portfolio or bond mutual funds can lead to significant trading losses.

In order to reduce this investment risk, it is recommended management invest only a small portion, if any, of its excess liquidity in long term debt and set strict quality parameters. For example, limit investment to publicly traded bonds and debentures, which allow credit unions the option to liquidate as required, or to bond mutual funds, which can be redeemed at any time.

These portfolio investments will fluctuate in value and may require accounting adjustments to market value (if values decline) in accordance with generally accepted accounting principles where not held until maturity.

Equities

Management must retain flexibility to convert excess liquidity into loans as members demand. For this reason, it is recommended that long-term equity investment, such as real estate or share securities, not constitute a large portion of the investment portfolio. Appreciation in the value of real estate or share securities generally occurs over a long period of time, and early liquidation can precipitate losses. Additionally, investments in common shares or real estate have no set term, nor guaranteed rate which can be matched against funding sources in order to "lock in" earnings to maturity.

These portfolio investments are more likely to fluctuate in value and therefore require accounting adjustments to market value (if values decline) in accordance with generally accepted accounting principles.

Schedule 6.7 *MONEY MARKET INSTRUMENTS*	
Qualifying Instrument and Description	**Risks**
Certificate of Deposit (CDs): Short term (30 days to 364 days deposits) redeemable early with interest penalty.	Only covered by deposit insurance (coverage varies by jurisdiction).
Guaranteed Investment Certificates (GIC's): Deposits with maturities of one year (up to three years).	Only covered by deposit insurance (coverage varies by jurisdiction).
League Deposits: Current deposits, or deposits with maturities up to five years.	Not insured. Ask your league about the nature of risk for each instrument.
Treasury Bills (T-Bills): Government debt issued bi-weekly with original terms to maturity of 91 to 364 days, issued in denominations ranging from $1,000 to $1 million, not paying explicit interest but sold at a discount, maturing at par (100% of face value). Sellable early through the secondary market.	Fully government guaranteed.
Government of Canada Bonds: Government debt issued with original terms to maturity for 20 or 30 years, issued in denominations ranging from $1,000 to $1 million.	Fully government guaranteed. Sellable through the secondary market with the potential for significant yield changes depending on remaining term to maturity.
Bankers' Acceptance: Commercial debt that has been guaranteed by the corporate borrowers' bank, issued into the money market, on a discount basis, maturing at par value, with terms of 30 days to one year. Sellable early through the secondary market.	Bank, not government guaranteed; investment safety subject to issuing bank's solvency. In certain cases, may be guaranteed by bank/corporation.
Commercial Paper: Commercial debt that is issued directly by a corporate borrower into the money market in interest bearing or discount form with terms between one day to one year. Unsecured; investment and income safety subject to issuing corporation's solvency.	Sellable early through the secondary market without significant yield changes unless issuing corporation's credit rating deteriorates.
Money Market Mutual Funds: Managed portfolio of money market instruments issued in units to investors by investment dealers, redeemable at any time. Investment income derived from annual cash dividends and the potential increase in value upon redemption. Partially secured; investment safety subject to the extent of fund investment in non-guaranteed money market instruments (e.g. commercial paper).	Redeemable at any time with the potential for yield changes depending on the length of time held. May be subject to purchase and sale transaction costs.

Investment Approval

Sound investment management requires that guidelines for investment approval limits be established in policy. At a minimum, the investment policy should:

- set a personal discretionary limit for the general manager of the credit union;
- require that investment decisions above this personal discretionary limit should require approval by the board of directors;
- set out lower limits for financial officers, or provide the general manager with the authority to assign limits to subordinates.

Approval limits can be illustrated using an approval hierarchy. An approval hierarchy establishes different levels of authority necessary to approve investment decisions of different dollar amounts. The higher the dollar amount, the greater the level of authority required to approve the investment. See schedule 6.8 below for an example.

Schedule 6.8 ***SAMPLE APPROVAL HIERARCHY***	
Authority	**Limit**
The Board	• any investment greater than *$100,000* • any investments in a subsidiary, joint venture, or other credit union
General Manager	• any investment less than $100,000
Treasurer	• any investment less than $20,000
Manager, Financial Instruments	• any investment less than $10,000
Dollar figures are for illustrative purposes only; each credit union should select numbers based on its own policy limits.	

Approval limits can also vary depending on the type of investment. For instance, in the above example, an investment in a subsidiary or joint venture requires approval by the board.

Investment Process and Criteria

Policy should set out the process for making investment decisions. The policy should address the credit union's investment philosophy (discussed previously in section 6202) and the approval hierarchy (discussed in the previous section). The process and criteria may differ depending on the type of asset in question. Consequently, recommendations regarding process and criteria are discussed below for each of the major investment categories.

Financial Instruments (Debt and Equity)

Process

It is recommended that either the general manager or an officer be given specific responsibility for making investment decisions. Depending upon the size of the credit union, part of this responsibility can be further delegated to qualified staff.

Authority for making investment decisions must be established in board policy. Refer to the previous section on Investment Approval Limits.

Criteria

The following criteria should be considered when making investment decisions in financial instruments:

- regulatory limits of the Act and Regulations;
- policy limits set out in the investment policy;
- the rate and volatility of return;
- the quality of the investment (i.e. credit rating of the instrument as determined through a bond rating service);
- early liquidation discounts/penalties;
- the term structure of the investment;
- the extent of portfolio diversification.

Diversification is also an important consideration when investing in financial instruments that are made outside a league and bear credit risk. Alternately, investment diversification may not be necessary where the amount of investment is relatively small or where investments are solely made through a league.

Real Estate

Process

Investments in real estate should be made in accordance with:

- limits set out in the Act and Regulations (see sections 66 and 68 of Regulation 76/95);
- aggregate limits set out in the credit union's investment policy;
- investment approval limits also set out in the investment policy.

Criteria

Investment decisions should be based on an objective analysis of the purchase. The analysis should be documented in a report, and should consider:

- purpose for the purchase (for use in operations or for income producing purposes);
- comparison of cost and benefits of the property;
- comparison with other possible investments;
- an appraisal of the property, prepared by a professionally accredited appraiser;
- the zoning of the property;
- an environmental audit of the property;
- transaction costs involved.

Capital Assets

Process

A capital asset is either property or equipment used by the credit union in its operations, and not intended for sale to customers in the ordinary course of business. Capital assets are carried on the balance sheet over time, and are distinguished from supplies, which are depleted during the period.

Investment policy should govern the purchase of capital assets, and the purchase of capital assets should require proper authorization. The level of authority required to make purchasing decisions will depend upon the dollar amount of the purchase. The purchase of office furniture may simply require the approval of the general manager, while the purchase of a new computer system might require approval by the board.

Approval limits should be established for capital asset purchases, either as part of the approval limits discussed in Section 6204, or in the same manner.

The approvals framework should require the board to approve significant capital asset investments; it is up to the board, through policy, to determine this amount. In such situations, management should provide the board with a written analysis of the investment decision, including an assessment of the investment decision criteria set out below.

Criteria

When considering an investment in a major capital asset, the credit union should consider:
impact on the membership;

- financial projections, incorporating start-up costs, ongoing operating expenses, revenue expectations, and growth, establishing expected performance;
- pay-back period: the number of years it takes to recover the original investment from net returns, before depreciation but after taxes;
- examination of alternatives;
- cost/benefit analysis;
- whether sufficient management resources are available, or if there a need for additional expertise;
- the impact of any contingent liabilities (e.g. environmental) that may arise and how they will be dealt with.

Other criteria may also be considered at the discretion of the board or management.

Subsidiaries

Criteria

When considering an investment in a subsidiary, the credit union should consider:

- level of membership support for new business expansion;
- level of start-up costs and payback period;
- level of management expertise required to control the subsidiaries' activities;
- level of expected business growth and profitability;
- costs for alternative procurement of services to be offered by subsidiary;
- increased legal liability.

Other criteria may also be considered at the discretion of the board or management.

Brokers and Investment Counselling

Investment in financial instruments often requires investment counselling, or in-house market sophistication. When considering investment in financial instruments, it is always prudent to consult with a league. Leagues often provide free investment counselling, as well as access to a diversified portfolio of investment instruments, both of which are undertaken with the credit union's long term interests in mind.

Investment advice and services can also be obtained through an investment broker. However, it is important for a credit union to understand the role and duties of brokers. Generally, brokers are not under a strict legal obligation to act in the best interest of their client. Although many do, not all brokers take care to fully understand the investment needs of their clients, or ensure that financial products fit the risk profile of their client.

The following practices are recommended when dealing with brokers, and may be included as part of board policy or operational procedure:

- The use of a schedule specifying qualified and/or trusted brokers with which investments can be made.
- Consultation with more than one broker or investment counsellor to obtain the benefit of a second opinion.
- The use of a formal agreement between the investment broker and the credit union. The agreement should state that the broker is aware of the requirements of the Act, and that all investments made by the broker will be in compliance with these requirements.
- For each transaction, have the broker document the eligibility under the Act and Regulations of their investment choices.
- It is also important to realize that funds left in an account with an investment broker, although relatively safe, may not be insured or guaranteed. Confirm that your broker is a member of the Canadian Investors Protection Fund, which insures clients' funds left in a broker's account.

Concentration Risk

Under Section 199(1) of the Act, credit unions are subject to a single investment restriction. That is, the Act prescribes a limit on the amount of investment a credit union may make in any one person or company, or to a group of financially connected persons or companies.

This restriction, set by Section 71 of Regulation 76/95, is 1.25 per cent of the credit union's total regulatory capital and deposits.

The restriction includes investments to connected persons as well as individuals. Connected persons are defined in Section 73 of Regulation 76/95, but generally include persons or companies that are financially tied to one another. Investments with various financial institutions or through certain government guaranteed programs are not subject to this restriction. Refer to section 199(2) of the Act for these exceptions.

The credit union may accept this limit, or deem it prudent to establish a more conservative single investment restriction (e.g. limit investment in a single corporation to one per cent of assets or some minimum dollar threshold).

In either case, the single investment limit should be included in the board policy on investments, and procedures should be in place to assure compliance with this limit. For more on operational procedures, refer to Sections 6500 and 6501 of this chapter.

Planning

Annually, management and the board of directors must develop a business plan, summarizing the credit union's goals and objectives for the coming year.

This annual business plan includes a strategic financial plan that addresses each area of risk management, including investments. As part of the strategic financial plan, management and the board must set financial targets and plans for investment management. The elements of a investment plan are set out in Chapter 1 on Planning, and should be referred to for planning purposes.

Risk Measurement and Board Reporting

It is recommended that the credit union measure the performance and risk level of the investment portfolio and report these findings to the board.

Risk Measurement

The following are minimum risk and performance measures of the investment portfolio, required by sound business and financial practices:

- measurement of dollar volumes and investment portfolio mix by investment category;
- measurement of the quality and return of investments;
- measurement of the market value of risk bearing investments in financial instruments;
- identification and monitoring of large investments and investments to connected and restricted parties.

The credit union must also meet investment measurement requirements set out in the Act and Regulations. The credit union may track any other measures of the loan portfolio as it sees fit.

These measurements should be compared to financial targets in the annual business plan and the budget, so that management can determine whether the credit union is meeting its goals. Management can also assess whether there are material variances from the plan which need to be addressed.

Comparison of these measurements against historical performance, where possible, can also identify significant trends which may need to be addressed by management.

Risk Management Techniques

Section 6401 provides techniques for measuring the adequacy of the credit union's investment portfolio.

Board Reports

The above measurements should be reported to the board of directors, so that the board can also monitor the investment portfolio and ensure adherence to regulatory requirements and to the annual business plan. Material variances from plan, and their causes, as well as management's plan to correct the variance should also be included in the report. Management should also provide the board with a summary on compliance with investment policy and relevant regulatory requirements.

Frequency

Management should provide the board with a report on the investment portfolio for each board meeting.

Form

Schedule 6.9 on the following page illustrates a Sample Board Report on Investment Management, which can be used by management to monitor the investments portfolio, ensure regulatory compliance and report findings to the board. The report compiles and compares all the volumes, targets and policy limits required to properly manage the risk of the credit union's investment portfolio. This report can be adopted or amended for use by the credit union.

Information contained in the report can be expressed on a periodic basis (monthly, quarterly), or on a year-to-date, or both, depending upon the preferences of the board and the frequency of reporting.

The frequency, form and content for board reports on investments should be set out in investment policy.

Schedule 6.9
SAMPLE BOARD REPORT ON INVESTMENT MANAGEMENT

Part I - Dollar ($) Volume Limits for Investments (by investment category)

Total capital and deposits= $100 million

Investment Categories	Actual ($)	Planned volume ($)	Limits per policy ($)	Statutory limits ($)	Variance from plan (%)
Financial Instruments					
Income Producing Realty				$10 M	
Capital Assets				$5M	
Subsidiaries				$5M	

Part II - Investment Portfolio Mix, as a percentage of total capital and deposits

Investment Categories	Actual (%)	Planned volume (%)	Limits per policy (%)	Statutory limits (%)	Variance from plan (%)
Financial Instruments					
Income Producing Realty				10%	
Capital Assets				5%	
Subsidiaries				5%	

Variances should be calculated as a percentage of the corresponding figure stated in the business plan.

Part III: Identification of Large Investments to Individuals and their Connected Parties

Single investment limit expressed as a % of capital and deposits: 1.25%	Number of Investments exceeding single investment limit: ________________ Total dollar amount of investments exceeding single investment limit: $___________
List investments exceeding this limit:	

Part IV: Corrective Action/Strategies

Variance	Corrective Action/Strategy

Schedule 6.9-1illustrates a Sample Board Report as required under Section 198 (4) of the Act. This report provides a detailed listing of all investments made and held since the last board meeting.

Schedule 6.9-1
BOARD REPORT ON INVESTMENTS MADE SINCE LAST BOARD MEETING

______________________Credit Union Limited

Investment Report

As At Month end: ___________________

Investment Name	Purchase Date	Maturity Date	Book Value	Rate	Market Value	Excess/(Deficiency)
	mm/dd/yy	*mm/dd/yy*	*$*	*%*	*$*	*$*
Totals			$0.00		$0.00	$0.00

Activity Report
(All Investments Purchased and Sold since last Board report)

Investment Name	Purchase Date	Maturity Date	Book Value	Date of Sale	Profit/(Loss)	
Totals			$0.00		$0.00	

I/We confirm that the investments are in compliance with the Act, Regulations and the Credit Union Investment Management policies

Manager/Treasurer: ________________________

Risk Measurement Techniques

Investment Quality and Return

It is a sound business and financial practice for a credit union to regularly measure or assess the quality and return of its investment portfolio. The method of measuring quality and return varies between the different investment categories, as does the frequency of measurement.

Measuring financial instrument quality and return is relatively straightforward. Most government bonds, corporate bonds, commercial paper, and financial institutions are rated by independent organizations, such as the Dominion Bond Rating Service and Canadian Bond Rating Service. The ratings for financial instruments should be periodically monitored, to ensure that they remain above acceptable levels.

If it is not already known, the return on a financial instrument can be calculated from the discounted price and nominal price of the instrument. The return of a zero coupon bond can be calculated using the following formula:

$$\textbf{Return} = \frac{\textbf{nominal price - discounted price}}{\textbf{discounted price}}$$

The rate of return for the investment should be calculated, at least monthly, so that management can assess the performance of the investment against expectations in the annual business plan, and against other investment opportunities. This will involve calculating the average yield of the securities portfolio, preferably using a weighted average (this is illustrated in Schedule 6.10).

Schedule 6.10
CALCULATING THE WEIGHTED AVERAGE YIELD

Assume there are three financial instruments in the portfolio:

Instrument #1: $50,000 @ 10% per annum
Instrument #2: $30,000 @ 5% per annum
Instrument #3: $20,000 @ 7% per annum

Total portfolio: $100,000

Weighted average return equals:

= sum (return) x (% share of portfolio) for all instruments

$$= 10\% \times \frac{\$50{,}000}{\$100{,}000} + 5\% \times \frac{\$30{,}000}{\$100{,}000} + 7\% \times \frac{\$20{,}000}{\$100{,}000}$$

= .10 x .50 + .05 x .30 + .07 x .20

= .05 + .015 + .014

= .079 or 7.9% per annum

Income Producing Realty

Annually, a credit union should prepare an assessment on the quality of its income producing real estate. This assessment can be based upon the most recent professional appraisal. The assessment can also include a qualitative summary of any significant market changes that would affect the value of the property, such as falling or rising rental rates, upcoming lease renewals, trends in the industry vacancy rate, zoning changes, and changes in property tax rates. Management should review the appraisal report to assess the reasonableness of the property value, in light of the above mentioned factors.

Management may also wish to estimate the market value using one or more recognized appraisal techniques such as:

- the sales comparison approach (based on sound consideration of similar property);
- the replacement cost approach;
- the income capitalization and discounted cashflow approach (for income producing properties).

An annual rate of return for the property should be calculated, so that management can assess the performance of the investment against expectations in the annual business plan, and against other investment opportunities. Methodologies for determining the return on property can be found in an advanced real estate appraisal text. (Refer to The Appraisal of Real Estate, 11th 3d. (the Appraisal Institute of Canada)).

Investments in Subsidiaries

Management should also prepare an annual assessment on the quality and return of investments in subsidiary operations.

Quality of a subsidiary investment can be measured by a number of factors, including the quality of the underlying assets of the subsidiary, the earnings and earnings potential of the business, and the quality of management. Management should prepare an annual assessment of these factors, including a summary on the level of risk that the subsidiary represents to the credit union.

An annual rate of return from the subsidiary should be calculated, so that management can assess the performance of the investment against expectations in the annual business plan, and against other investment opportunities.

Risk Management

Corrective Action

An important activity in the effective management of risk is management's timely response to unauthorized risk or poor performance developments. As a follow up to the investment risk measurements taken by the credit union (and discussed in Section 6400), management should investigate all significant performance variances relative to the annual business plan and to historical performance, and respond by taking action to correct these variances. Management must similarly respond to any contravention of board policy or regulatory requirements, or other unauthorized risk.

Operational Procedures

Procedures can assist management in ensuring regulatory and policy requirements are met with respect to maximum investment limits, and minimum investment quality. The procedures can also assist in safeguarding investments. It is recommended that the credit union have the procedures in place which ensure compliance with:

- maximum investment limits, set out both in legislation and in board policy;
- minimum investment quality limits, set out both in legislation and in board policy.

Section 6501 discusses procedures that can assist management to ensure compliance with investment limits. To assist in implementation, procedures should be both appropriate and cost effective given the size of the credit union's operations.

It is a sound business and financial practice for credit unions to document procedures. Written procedures result in higher staff productivity and better control over resources.

Operational Procedures

The following procedures can assist management to ensure that investment limits set out in policy and in the Act and Regulations are met.

Monitoring the Investment Portfolio

Regardless of the investment choices made by a credit union, management must abide by the legal requirements of the Act and by the limits set out in board policy. In this regard, it is recommended that management review all investments held, at least quarterly, to ensure compliance with all regulatory requirements and investment policy, and report their findings to the board.

Mainly, the review is concerned with ensuring that the credit union complies with:

- maximum investment restrictions as set out in the Act and Regulations (summarized in Section 6100);
- maximum investment limits set out in policy (summarized in Section 6202);
- minimum investment quality limits set out in policy, with respect to risk bearing investments (also summarized in Section 6202).

The first step the board can take to ensure compliance is to confirm that management is measuring dollar volumes, portfolio mix and investment return and quality as part of the credit union's information reporting system. (See Risk Measurement in Section 6400). This can be done through regular board reporting, using a report similar to the Sample Board Report on Investment Management, illustrated in Schedule 6.9.

The other tool that can be used to monitor the investment portfolio is a Current Investment List. This summary list sets out particulars of a financial instruments portfolio, including the name and type of investment, the dollar volume, the individual investment limit as set out in policy (which is within the limits established under the Act), the investments quality rating, and the minimum quality rating as set out in policy. This list should be maintained and updated whenever securities are purchased and sold. The list can be used to ensure the credit union does not exceed policy limits.

A sample Current Financial Investment list is provided in Schedule 6.11. Any similar report, detailing investments and comparing them, either individual or as an aggregate to policy and regulatory limits, is acceptable for these purposes.

Management should review these reports with the board, and inform the board of any incidence where board policy or legislation has not been met. Where this is the case, management must also provide the board with an action plan to correct the non-compliance.

Schedule 6.11 *SAMPLE CURRENT FINANCIAL INVESTMENTS LIST1*				
Company	**Amount**	**Limit**	**DBRS Rating[2]**	**Minimum Limit by Category**
Government				**R1-M**
Canada T-bills	$490,000	No limit	R1-H	
Province of Ontario	$35,000	$300,000	R1-M	
Province of Alberta	$165,000	$300,000	R1-M	
Province of BC	$142,000	$300,000	R1-M	
League	$920,000			**R1-M**
Schedule “1” Banks				
C.I.B.C.	$221,000	$300,000	R1-M	
National Bank	$243,000	$300,000	R1-M	
Royal Bank	$222,000	$300,000	R1-H	
Schedule “2” Banks				**R1-M**
Credit Lyonnais	$10,000	$100,000	R1-L	
Hongkong Bank	$15,000	$100,000	R1-M	
Mitsubishi	$42,000	$100,000	R1-M	
Corp. & Fin. Paper				**R1-L**
Mobil Oil Canada	$20,000	$100,000	R1-M	
Ford Credit Ltd.	$22,000	$100,000	R1-L	
GMAC	$20,000	$100,000	R1-L	
Total Portfolio Volume	$2,567,000			
As a % of Assets	8.6%			

1. Figures are for illustrative purposes only. Total assets = $30 million.
2. Credit ratings are as of a specific date, and are subject to change.

Procedures for Purchasing Securities

Cash flow should be calculated, to determine if there are surplus funds available to invest in the short-term money market. Quotations for financial instruments should be obtained from the league or broker. A spreadsheet (quotation sheet) can be useful to keep track of cash flows available for investment, as well as to record and compare quotations for financial instruments from the league and from different brokers. The credit union may want to seek assistance from its league in developing a quotation sheet.

Once a decision is made to purchase or sell specific securities, the officer will be quoted a finalized price from the broker. This price should be verified by the treasury officer. The price can be verified using the formula in Schedule 6.12 below. A difference of more than $50 should be questioned.

Schedule 6.12
CALCULATION OF MONEY MARKET INSTRUMENT PRICING

Actual Price = the **Discount Factor** rounded to 5 decimal places and multiplied against the face value where:

$$\text{Discount Factor} = \frac{1}{1 + (T/365 \times \text{interest rate})}$$

T = Number of days until maturity date of the instrument.

Maturity Calendar

All purchases of securities should be recorded in a Maturity Calendar. The calendar should note, on a daily basis, what securities are maturing, the rate at which they were purchased, the principal amount of the security, and whether they were purchased from a league or brokerage firm (and if the latter, which brokerage firm).