Best Practices in Credit Portfolio Risk Management for Buy-side Managers

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CAISSE – FIGURES AND INVESTMENT ACTIVITIES
Caisse – Figures and investment activities

History

- Founded in July 1965
- Act of Québec’s National Assembly
- Initial mandate: to manage the assets of the Québec Pension Plan (RRQ)
- Mandate widened over the years to include the funds deposited by other Québec public and private sector pension and insurance plans
- As at December 31, 2011: 25 depositors – net assets of $159B
"The mission of the Caisse is to receive moneys on deposit as provided by law and manage them with a view to achieving optimal return on capital within the framework of depositors’ investment policies while at the same time contributing to Québec’s economic development."
Caisse – Figures and investment activities

Vis-à-vis its peers

- One of the largest institutional fund managers in Canada and North America
- One of the world’s 10 largest real estate asset managers
- Leading Canadian private equity investor
- Shareholder in more than 4,000 companies globally
- One of the few North American entities with the highest credit ratings: AAA from DBRS and S&P, and Aaa from Moody's
# Caisse – Figures and investment activities

## Breakdown by asset class

As a percentage – as at December 31, 2011

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Income</td>
<td>37</td>
</tr>
<tr>
<td>Inflation-Sensitive Investments</td>
<td>16</td>
</tr>
<tr>
<td>Equity</td>
<td>46</td>
</tr>
<tr>
<td>Hedge Funds</td>
<td>2</td>
</tr>
<tr>
<td>Asset Allocation</td>
<td>1</td>
</tr>
<tr>
<td>ABTN</td>
<td>(2)</td>
</tr>
</tbody>
</table>
Caisse – Figures and investment activities

Geographic breakdown

As a percentage – as at December 31, 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>60</td>
</tr>
<tr>
<td>United States</td>
<td>20</td>
</tr>
<tr>
<td>Euro Area</td>
<td>7</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>4</td>
</tr>
<tr>
<td>Japan</td>
<td>2</td>
</tr>
<tr>
<td>Emerging Markets</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
</tbody>
</table>
RISK MANAGEMENT AT LA CAISSE
Transparently ensure a risk-return balance for the Caisse by assuming a second level of control, by employing effective risk management tools and providing support with investment strategy development, while promoting a sound risk culture within the organization.
Risk management at la Caisse
Focus of our strategy

Knowledge and challenge
• In-depth knowledge encompassing investments, the portfolio and interrelated investments
• Constructive discussions on strategies and opportunities

Guidance and discipline
• Define policies that reflect the risk management philosophy
• Establish clear, shared risk management processes
• Develop structured and shared investment processes

Development of effective analytical tools
• Develop quantitative and qualitative tools
• Communicate effectively to ensure buy-in
Risk management at la Caisse
ERM process

1. Identify
   - Identify acceptable level of risk
   - Develop and implement a mitigation plan

2. Assess
   - Measure risks using systematic tools, e.g. VaR, stress tests, concentrations and indicators
   - Analyze risks using quantitative and qualitative methods

3. Mitigate

   Dialogue:
   Market update, rebalancing committee and risk-return report

- Anticipate major risks
- Prioritize risks
- Monitor potential risks
Risk management at la Caisse

Organisational structure

### Business Unit Risk Managers (BURMs)

- **Fixed Income**
  - Market risk analysis, stress testing and concentrations
  - Credit, counterparty and liquidity risk management

- **Equity Markets**
  - Data management

- **Private Equity**
  - Risk management intelligence and policies

- **Real Estate**
  - Geopolitical risk analysis
  - Operational risk management

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**Activities associated with risk measurement and quantitative analysis**

**Activities associated with qualitative analysis**
SECTION 03

CREDIT RISK MANAGEMENT TOOLS
Credit risk management tools
Corporate bonds portfolio outlook

- Roughly 25% of 40 B$ Bonds portfolio invested in non-sovereign credit sensitive instruments
- Benchmark is DEX Universe All Corporate Bond Index
  - Index is composed of all Canadian dollar denominated bonds with effective maturity of at least one year and a broad enough distribution, rated BBB or higher and issued by Canadian corporations or SPVs
- On top of publicly traded corporate bonds, portfolio can also include private debt investments, leveraged loans, high yield securities and credit derivatives
- Small exposure to issuers in USA and Europe
- Portfolio constructed to match benchmark’s duration
Credit risk management tools

Investment approach

- Bottom-up approach
- Issuers and sectors assigned to portfolio managers/analysts to build expertise
- Fundamental analysis drives investment decision
- Relative-value approach to assess cheap/rich bonds
- Low turnover

Risk managers can add value through quantitative approach
Credit risk management tools

- **Moody’s CreditEdge**
  Platform that delivers forward-looking daily public firm EDF™ (Expected Default Frequency) credit measures to support credit risk assessment and investment decisions

- **Moody’s RiskFrontier**
  Platform that enables you to perform rigorous analysis of credit risk and economic capital. It also identifies risk concentrations by industry, geography or asset type, computes expected and unexpected loss, and calculates distributions of portfolio values, losses and capital
## Credit risk management tools

<table>
<thead>
<tr>
<th>Major Risk</th>
<th>CreditEdge</th>
<th>RiskFrontier</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Calculate probability of defaults for issuers</td>
<td>Estimate portfolio's tail risk (Credit Value at Risk)</td>
</tr>
<tr>
<td></td>
<td>Derive point-in-time credit ratings to supplement ratings provided by external agencies</td>
<td>Identify main contributors to tail risk</td>
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Impact of risk on the Caisse
Illustrative probability distribution

Potential event characterized by:
• Major impact
• Generally low frequency
• Typically not central to investment strategies
• *Dialogue intended to mitigate risk*

Potential risk characterized by:
• Significant but less critical impact
• Higher frequency
• Deliberately accepted to generate returns
• *Dialogue intended to optimize risk-return ratio*
“USUAL” CREDIT RISK MANAGEMENT
“Usual” credit risk management
Fundamental approach to credit risk

- Risk assessment is based on both in-house fundamental risk analysis and rating agencies’ analysis

- Risk analysis is mostly based on:
  - Financial strength analysis
  - Industry overview
  - Quality of management
  - Company operational strengths/weaknesses analysis

- Decision to buy or sell securities is based on risk assessment and on comparative analysis of spreads for securities of similar risk
“Usual” credit risk management
Quantitative approach to credit risk

- Market-based data can also be used to perform risk analysis
- Many sources of market data available for debt:
  - Bond market
  - CDS market
  - Equity market
- Market data has generally the advantage of providing point-in-time risk information

Combined approach provides better risk assessment
“Usual” credit risk management

Fair value spreads approach

- Approach used is based on Moody’s Fair Value Spreads (FVS)
- Fair Value Spreads calculated are compared to actual market spreads for securities included in the portfolio managers investment universe
  - Approx. 60% of securities in benchmark have FVS available
- For each sector, top overvalued/undervalued securities are included in a report
- Portfolio managers review opportunities presented in report

Quantitative approach adds another source of potential opportunities
“Usual” credit risk management

Risk in portfolio context

- Current investment approach focuses on security selection and puts less emphasis on portfolio construction
- Portfolio level reporting revolves around:
  - Concentration reports (credit ratings, geography, industry)
  - Duration
  - Sensitivity to credit spreads

Focus should be on risk contribution and not standalone risk
“Usual” credit risk management

Risk in portfolio context

- Approach used is based on Moody’s RiskFrontier
- Portfolio value distributions for both portfolio and relative portfolio are generated
- Focus on standard deviation of distributions (not VaR)
- Contributions of each securities/industries/rating groups are presented to portfolio managers
- Historical and expected returns are compared to risk contributions to establish risk-reward dialogue
### “Usual” credit risk management

**Value proposition**

<table>
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<th>Usual Risk</th>
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<td><strong>CreditEdge</strong></td>
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<td><strong>CreditEdge</strong></td>
<td><strong>RiskFrontier</strong></td>
</tr>
<tr>
<td>• Calculate risk-adjusted theoretical spreads to identify cheap/rich securities</td>
<td>• Use portfolio risk contribution as part of risk-reward analysis framework</td>
</tr>
<tr>
<td></td>
<td>• Focus on standard deviation, not VaR</td>
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“Usual” credit risk management

Value proposition

Better integration of credit risk management tools in investment process requires:

- **Transparency**
  - Training sessions on methodology
  - Easily available and clear documentation

- **Data quality**
  - Team dedicated to ensure data availability and accuracy

- **Timely reporting**
  - Processes that allow punctual and flexible reporting
KEY POINTS
Key Points

- Organisational structure should facilitate dialogue with portfolio managers
- Portfolio managers focus on usual risk
- Quantitative approach is a valuable addition to fundamental approach used by portfolio managers
  - Market based risk information
  - Portfolio risk contribution vs standalone risk
- Transparency, data quality and timely reporting are necessary to obtain buy-in
THANK YOU