

Interest Rate Risk: Drivers and Impacts

The Canadian Securities Institute Research Foundation was founded in 1996. The Foundation encourages and supports research by Canadian academics that will benefit Canadian capital markets and Canadian investors. The Foundation considers and supports realistic and creative ideas for research in issues pertaining to the Canadian capital markets with a national and/or global perspective. The Foundation not only provides funding, but also seeks ways to bridge the academic community and industry representatives. Given its mandate, the board of the Canadian Securities Institute Research Foundation decided to pursue its work to identify research topics pertinent to the capital markets industry and researchable by academics.

In 2016, the board focused its attention on interest rate risk, a topic of high importance in Canada and around the world. There are increasing concerns about the current prolonged low interest rate environment and the possibility of a negative interest environment. Furthermore, as interest rates decrease there is increasing compression on spreads for lending institutions. For investors, the prospect that rates will rise in the future will make buying fixed income at today's levels unattractive and risky from a price perspective. For wealth management divisions, diminishing returns present several challenges: determining how to structure and manage the business and treasury, determining what products to offer, managing incentives of advisors who may be prone to offer riskier high-yield products with higher returns that do not meet client suitability criteria, and providing adequate advice to investors. The board determined that the best way to identify the most relevant topics was to organize two roundtables bringing industry representatives and academics together. Two roundtable sessions were held.

On February 25 2016, the Canadian Securities Institute Research Foundation, in conjunction with the Capital Markets Institute, hosted a first roundtable session on Interest Rate Risk at the Rotman School of Management in Toronto. The roundtable was attended by a select group of academics and senior industry representatives:

| Subject-Matter Experts | | |
|-------------------------|-------------------------------|---|
| Martin Boyer | HEC | CEFA Professor of Finance & Insurance |
| Don Brean | Rotman, University of Toronto | Professor of Finance and Economics |
| Peter Christoffersen | Rotman, University of Toronto | Professor of Finance |
| Alexander Dyck | Rotman, University of Toronto | Professor in Corporate Governance Professor of Finance and Economics |
| John Hull | Rotman, University of Toronto | Maple Financial Group Chair in Derivatives and Risk Management Professor of Finance, Co-Director of the Rotman Master of Finance program |
| Chayawat Ornthanalai | Rotman, University of Toronto | Assistant Professor of Finance |
| Alan White | Rotman, University of Toronto | Peter L. Mitchelson/SIT Investment Associates Foundation Chair in Investment Strategy Professor of Finance |
| Industry Experts | | |
| Jean-Sebastien Fontaine | Bank of Canada | Research Advisor , Financial Markets |
| Maureen Howe | CSIRF | Board Member |
| James Hughes | CPPIB | Head of Investment Risk |
| Jean Masson | TD Asset Management | Managing Director, TD Asset Management |
| Saurabh Rastogi | CIBC | SVP, Balance Sheet, Liquidity and Pension Risk |
| Jim Salem | RBC | EVP and Treasurer |
| Wei Xu | Global Risk Institute | Research Manager |
| Facilitators | | |
| Marie Muldowney | CSIRF | President |
| Heather-Anne Irwin | CSIRF | Executive Director |

1 The Canadian Securities Institute Research Foundation wishes to thank the Capital Markets Institute for the support provided in organizing and holding the Roundtable in Toronto. Kathleen Coulson, Executive Director, was an ardent supporter of our effort.

On April 6 2016, the Canadian Securities Institute Research Foundation hosted a second roundtable session on Interest Rate Risk at the St. James Club in Montreal. The roundtable was attended by:

| Academic Specialists | | |
|-----------------------------|---|---|
| Martin Boyer | HEC | Professor Finance and Insurance |
| Pierre Chaigneau | HEC | Associate Professor of Finance |
| Jan Ericsson | McGill University | Associate Professor, Coordinator of the finance group, and a Fellow at the Stockholm Institute for Financial Research (SIFR). |
| Vihang R. Errunza | McGill University | Professor of Finance |
| Lawrence Kryzanowski | Concordia University | Professor and Senior Concordia University Research Chair in Finance |
| Lars Stentoft | University of Western Ontario | Associate Professor at Department of Economics Canada Research Chair in Financial Econometrics |
| Industry Specialists | | |
| Alexis Gerbeau | Manulife | Vice President and Chief Actuary |
| Eric Girard | National Bank | Senior Vice-President, Corporate Treasury |
| Martin Laforest | Caisse centrale Desjardins and Capital Desjardins | Directeur principal, Gestion des taux d'intérêt |
| Jean-Francois Pépin | Addenda Capital Inc | Senior Vice-President and Co-Chief Investment Officer |
| Charles Vanasse | TD Asset Management | Vice President and Director, Portfolio Management |
| Facilitators | | |
| Marie Muldowney | CSIRF | President |
| Heather-Anne Irwin | CSIRF | Executive Director |

After a deep discussion on interest rate risk in each roundtable session, the following research topics were identified and categorized as outlined. The topics below should be treated as guidelines and not interpreted overly literally. The aim of the research is to deepen studies in interest rate risk dealing with any one of the areas or questions outlined below:

Causes of Low Interest Rates

- What are the structural factors explaining this enduring low economic growth/low interest rate environment? Do these factors suggest that the current environment will last for several more years?

General Impacts

- What is the impact of low interest rates on a small economy?
- Given the low interest rate environment, why has credit growth been so low?
- What we can learn from economies in other settings that are experiencing low or negative interest rates?

Monetary Policy

- What is the impact of stimulus on interest rates? Specifically the impact of infrastructure on demand and is it the best way to promote growth?

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- What are the implications of low or negative rates with no bank reserve requirements on the effectiveness of monetary policy?
- What was the actual/true effect of QE (Quantitative Easing) growth?
- Globally, in which geographies have central bank interventions been effective? In which areas have they been less effective? Can further interventions achieve any degree of effectiveness?
- What is the impact of global monetary policy on Canadian policy?
- Can fiscal policies and foreign exchange interventions still be instrumental in this period of expansionary monetary policy? Assuming rates remain low for the next 5 years, what should the right public policy be?

Correlation with Equity Risk Premium

- What is the correlation between risk premium and rates, especially given that corporate spreads have remained approximately the same in this low interest rate environment, as they did when rates were higher? On the equity side, the equity risk premium has also not really changed either with lower rates.

Impact on Consumer

- How does a prolonged period of low interest rates impact risk aversion. Do investors become more or less risk averse? What is the impact on asset prices and risk spreads?
- What is the impact of a prolonged period of low interest rates on the relative wealth of older versus younger individuals? Generally, who benefits and who loses from low interest rates? In the search for yield, does risk aversion change?
- How are low interest rates affected by demographics?
- How can a sustained period of negative real interest rates impact risk taking and investment decisions? Are the low volatility in rates and market uncertainty restricting the range of possible investment strategies? What are the alternatives?

(There was a whole discussion around low interest rates and asset management, less focus on investment and more on liabilities, the movement of more investments to equity to get return and therefore the risk premium has gone down. Low interest rates beget low returns.)

Impact on the Firm

- How does a prolonged period of low interest rates impact the balance sheets of pension plans and insurance companies (any FI that has long-dated liabilities)?
- What is the impact of a prolonged period of low interest rates on a bank's business model? Banks shift from spread based revenue to fee based. How successful is this and what is happening in other jurisdictions?
- How does the default prediction model change for credit analysts and rating agencies in a low interest environment?
- What is the impact of low or negative rates on derivatives valuation?
- With regard to liability-driven investments, does the use of leverage to maximize yield potentially create new sets of risks, such as herding risk and disruption in the funding market.
- What would be the positive and/or negative impacts of an extended period of low or negative rates on pension funds? On short- and long-term investors? On the economy in general?
- How do negative interest rates affect risk measures, hedging decisions and pricing models?
- Why are low interest rates not encouraging more corporate investment?

Impact on Foreign Exchange

- What are the implications of low interest rates on foreign exchange particularly in an open economy like Canada? One focus of this research could be on Canadians investing in pension plans that are no longer limited

to investing in Canadian securities (cost of hedging FX risk versus going unhedged).

Research

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About the Canadian Securities Research Foundation

The Canadian Securities Institute Research Foundation (CSIRF) is a not-for-profit organization that funds research in the capital markets and financial planning by academics and promising PhD students. Every year, the Foundation funds Canadian academics to conduct research on the capital markets. One of the aims of the Foundation is to bring industry and academia together to ensure that the research funded corresponds to the needs of the capital markets. Since its inception, the Foundation has granted more than \$1.2M to researchers in universities across Canada. For more information on the CSIRF, visit www.csifoundation.com.

About the Capital Markets Institute:

The Capital Markets Institute (CMI) was started 18 years ago and is a centre for independent and rigorous research, analysis and debate on capital markets issues unique to Canada, with the objective of improving the competitiveness and functioning of Canadian markets. Our goal is to bring together academics, industry participants, regulators and politicians, to explore key capital market issues and to share our knowledge with the community. The institute funds research and offers roundtables, workshops and conferences to share its work with all stakeholders in Canadian capital markets. We are grateful to our sponsors – TMX Group (as lead sponsor), CPPIB, Sun Life, Manulife Financial, Bank of Montreal, CIBC, Royal Bank of Canada / RBC Capital Markets, Scotiabank, TD and Goldman Sachs.