Institute for Sustainable Finance

isfcanada.org

GREEN FINANCE:
New Directions in Sustainable Finance Research & Policy

Conference Report

August 2019

Smith School of Business
Queen's University

Thank you to participating organizations

AGF Investments Inc.

Ambassador for Climate Change

Bank of Canada

Bank of Nova Scotia

Carbon Tracker

Canadian Energy Research Institute

CFA Toronto

Concordia University

CPA Canada

Environment and Climate Change Canada (ECCC)

Fiera Capital Corporation

Global Risk Institute

Greenchip Financial Corporation

Institute for Intergovernmental Relations, Queen's University

Insurance Bureau of Canada

Ivey Foundation

Ivey School of Business, The University of Western Ontario

Jarislowsky Fraser

Mercer Canada

Ontario Teachers' Pension Plan (OTPP)

Payments Canada

RBC Capital Markets

Rotman International Centre for Pension Management

Rotman School of Management, University of Toronto

Smith School of Business, Queen's University

Suncor Energy

Sustainalytics

Toronto Finance International

Université de Sherbrooke

University of Arizona

University of Waterloo

Yale University

FOREWARD

As we increasingly experience the physical impacts of climate change (flooding, extreme weather, forest fires), we will experience the financial impacts as well. ***The challenge for Canada is: how do we attract global investment while, at the same time, protecting Canadian assets, investors, and firms from risk in the context of climate change?*** In essence, this is what sustainable finance is about — harnessing our financial systems to help accelerate the activities, decisions, and structures that will put Canadian industries and our economy ahead of the curve.

For this to happen, we — as members of Canada's financial ecosystem and community — are going to have to start answering some very big questions. Questions which, until quite recently, we have not taken quite as seriously as we must:

- What does meaningful, responsible and consistent disclosure look like in a Canadian context?
- How do we create incentives and opportunities to draw in private capital to boost clean tech innovation across our economy and to invest in climate-resilient infrastructure?
- How do we better assess risk and value assets through a climate-smart lens?

Canada has the talent, resources and institutional muscle to define sustainable finance for our economy. We need to grow and harness that capacity ***now***, if we want to captain our own ship through one of the most significant global economic transitions in history. The only way to do this is by investing in the research, education, professional training and collaboration necessary to lift our current generation of professionals to the next level, while preparing an emerging generation to lead.

It is with this ambition in mind that we announced the establishment of the **Institute for Sustainable Finance**. This institute will take a leadership role in serving as the hub for collaboration and information on sustainable finance in Canada in pursuit of its mission to *align mainstream financial markets with Canada's transition to a prosperous sustainable economy*.

Hosted at the Smith School of Business, the Institute will span a continuum of expertise from across varying disciplines, including finance, economics, environmental studies, political science and others, in order to foster innovative research, education, external collaborations and partnerships. The Institute's mandate is threefold:

- Generate innovative and relevant research on sustainable finance and effectively communicate this research to all pertinent stakeholders.
- Serve as a platform for collaboration between government, academia and industry.
- Provide educational opportunities and develop capacity in the field of sustainable finance.

As Chancellor Jim Leech put it in his keynote address, "… bringing investment professionals into the world of sustainability requires considerable research, both backward looking and projecting into the future. Who best to do that critical research than universities where you can pull together multi-disciplinary teams to address these big issues?" In the coming months we will attempt exactly that and hope that everyone who attended this conference will join us in this effort.

Sean Cleary, PhD, CFA
BMO Professor of Finance
Executive Director, Institute for Sustainable Finance

EXECUTIVE SUMMARY

On June 14th, 2019 Canada's Minister of Finance, Bill Morneau announced the release of the final report from Canada's Expert Panel on Sustainable Finance – Mobilizing Finance for Sustainable Growth.

The report is based on the recognition that bold changes are needed to support Canada's transition to a low-carbon economy. The recommendations presented in the report were focused on bringing sustainable finance into Canada's mainstream markets.

On June 14-15, 2019, representatives from Smith School of Business at Queen's University and Queen's University's Institute for Intergovernmental Relations convened a conference titled Green Finance: New Directions in Sustainable Finance Research and Policy. The conference included over 80 participants from Canada's leading financial institutions, civil society, academia and government. The concurrent release of the final report by the Canadian Expert Panel provided for vibrant discussions on the key challenges and opportunities around Sustainable Finance during the conference.

With this report, we would like to extend a special thank you to all the participants and organizers of this event. This report summarizes the discussions and proceedings of the conference for the purpose of sharing information with the wider group of stakeholders in Canada. The discussions considered key challenges associated with mainstreaming sustainable finance into the Canadian economy. Bringing together a spectrum of financial industry representatives, government representatives and academics, there was general agreement that Canada needs to:

1. Respond to the recommendations of the Canadian Expert Panel.
2. Work collaboratively across different sectors of the economy to address several urgent issues including establishing standards, taxonomies, disclosure requirements and benchmarks that incorporate sustainability considerations.

As one of the 185 nations committed to addressing climate change, Canada has made a pledge to transition to a low-carbon economy. In order to address Canada's transition challenges, there will need to be significant changes to the way finance operates. Transitioning late, or not transitioning at all, while the rest of the world moves forward, can have significant shocks to the Canada's economy, leading to stranded assets and significant loss in production value. Participants at the conference noted that Canada's economy is particularly vulnerable because of its reliance on the resource sector, which needs to be engaged, and involved in this conversation, in ways that create new opportunities for its stakeholders within a clean economy.

Finance is responsible for allocating funds to its most productive use. It is therefore well positioned to direct investments to sustainable corporations, organizations and projects, and assist in making strategic decisions on the trade-offs among sustainable goals. The financial sector can play a central role in leading the transition to a clean economy by financing sustainable companies and endeavours, which will in turn, help to accelerate such a transition. Conference participants noted that investors within the financial system have the power to exert their influence, and drive sustainable business practices within companies that they invest in. Most importantly, finance can help certain sectors of the economy that are vulnerable to climate change shocks (such as transportation, insurers, reinsurers) in understanding and pricing risks associated with environmental issues.

Business as usual is no longer an option, and representatives of the Canadian financial and public institutions underlined the need for a systematic uptake by leaders across various sectors. These changes require significant commitment on behalf of all sectors, particularly around committing to Environmental Social and Governance (ESG) indicators, involvement of the extractive sector in the conversation, development of robust taxonomies and disclosures, as well as the development of professional capacity to assess climate risk and the cost of capital. Providing the summary of those deliberations, this report identifies questions for further consideration as Canada starts building and implementing its plan for a sustainable economy.

SUSTAINABILITY AND THE FINANCE INDUSTRY

MODERATOR: ***Jennifer Reynolds***, President and CEO of Toronto Finance International

PARTCIPANTS: ***Stephen Kibsey***, Adjunct Professor at Concordia University and former Vice-President of Emerging Risk Management at the Caisse

Karen Lockridge, Principal, Mercer, Canada

Lindsay Patrick, Managing Director and Head for Sustainable Finance, RBC Capital Markets

Craig Stewart, Vice President, Federal Affairs for Insurance Bureau of Canada

"If we are going to have sustainable finance, we need to have ESG considerations all throughout the investment process."
KAREN LOCKRIDGE

"The challenge is on DATA – good data, material data and transparency. As a portfolio manager, you need a company's basic information so you can aggregate your portfolio. It's a challenge for ESG specialists."
STEPHEN KIBSEY

"The Canadian banking sector embraced sustainable finance as an opportunity."
LINDSAY PATRICK

"We are in an unsustainable business model and it will get worse."
CRAIG STEWART

The panel covered a broad range of issues concerning Canada's path to a sustainable economy.

The overarching message from the panel members was *the concern for lack of data and research along with its practical applications, the importance of building capacity around sustainable finance, as well as strengthening collaborations across varying sectors of the financial industry and political spectrum*.

Participants reiterated the need to engrain ESG at the company's core, including looking at future physical risks, and adoption of carbon budgets on the investment side of operations. Integration of ESG requires changes in C-suite initiatives, including changes to the executive compensation and bonus systems; and an aggregate review of all the "green" asset classes, including further development and adoption of a relevant taxonomy or criteria.

The challenge around ESG is the lack of resources in place and expertise. Participants expressed the need for ESG certificate programs, similar to standardized training programs developed by CFA. There is an urgency to develop capacity in this front, as the lack of expertise can create significant waves of greenwashing.

Mercer Canada and RBC are working with investment stakeholders who are interested in integrating ESG into their portfolios. RBC recently issued its first EUR 500M green bond in Europe, and is advocating for clear standards, taxonomy and parameters for sustainable finance. Mercer Canada's efforts went further by creating a system to assess company strategies based on ESG performance, and their ability to provide superior returns over time. Using its own funds, Mercer focuses on stewardship and encourages companies to disclose under TCFD.

The need for sustainable finance advances is critical to the insurance industry. The industry is losing over a billion dollars to climate change induced natural disasters. In 2018, the losses exceeded $2 billion dollars. Such a significant loss is offsetting revenues from all other streams. Unprecedented challenges require a Canadian capacity to model and price risk as the current models do not fit in the Canadian context.

The greatest challenge that is echoed across representatives of these industries is the overt politicization of climate change, and the need for collaboration. It is affecting the viability of Canadian industries, and needs to be addressed in a proactive and unified manner. Participants felt strongly about the need to learn from other jurisdictions, and further develop joint standards that allow for learning and adjustment over time.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) AND PROFESSIONAL INVESTORS

MODERATOR: ***Amr Addas***, Principal, Addas Financial Consulting, Instructor – Concordia University and the Sustainable Investment Professional Certificate Program

PARTCIPANTS: ***Diane-Laure Arjaliès***, Assistant Professor, Managerial Accounting and Control, General Management & Sustainability, Ivey School of Business, Western University

Alexander Dyck, Professor of Finance and Economic Analysis and Policy, Rotman School of Management, University of Toronto

Olaf Weber, Research Chair in Sustainable Finance and a CGI Senior Fellow, University of Waterloo

"You [finance professionals] may all believe that the solution to your problems is data, and I am here to tell you that it is not."
DIANE-LAURE ARJALIÈS

"We look into the extent to which governance is the gateway drug to get E and S in order to drive changes. We think it is important because if you don't understand the role that governance plays in facilitating those other changes, you might be pushing firms along one environmental dimension, when you would be better off to push firms to focus on governance first."
ALEXANDER DYCK

"We find that reinvestment into the Canadian low-carbon index creates lower financial returns compared with reinvestment according to industry weight, which has strong implications for the government. Particularly, when thinking of financial tactility of the green industry – it is really important especially if thinking about shifting money into industries that contribute to climate change mitigation."
OLAF WEBER

This academic panel discussed ESG factors and their impact on professional investors, and included three research paper presentations.

Dr. Arjaliès' research "Beyond Numbers: How Investment Managers Accommodate Societal Issues in Financial Decisions" looks into the work of financial managers, and whether they consider societal issues in their decision-making. Arjales explores a number of different techniques that financial managers use, such as the yield curve or financial statements and finds that when they use different forms of materiality, such as visuals (including emojis) instead of customary financial numbers (to determine quality of their portfolios) they are more likely to accommodate societal issues in their financial decisions.

Dr. Dyck's study "Insider Entrenchment and Corporate Sustainability Around the World" identifies whether outsider investors' control rights impact a company's environmental performance levels. This research finds that smaller, family controlled firms with limited outsider influence have lower environmental performance. They find that larger corporations with voting requirements are associated with better environmental performance. Dr. Dyck concludes that corporate governance is crucial to sustaining the E component of ESG.

Dr. Weber's paper "Fossil Fuel Divestment Strategies: Financial and Carbon Related Consequences" seeks to understand the financial effects of divestment. The paper analyzes the effects of fossil fuel divestment on the carbon intensity of portfolios. Using the Canadian Stock Index TSX 260 from 2011-2015, he finds that stricter divestment strategies, such as excluding more fossil fuel stocks, results in higher risk adjusted returns and lower carbon intensity relative to divestment approaches that exclude less stocks. He concludes that divestment is an ethical investment approach, but also that it can address financial risks caused by climate change, while simultaneously being able to reduce the carbon exposure of investment portfolios.

FIRESIDE CHAT

THE ENERGY SECTOR AND SUSTAINABLE FINANCE

MODERATOR: ***Bruce Lourie***, President, Ivey Foundation

PARTCIPANTS: ***Arlene Strom,*** Senior Vice President and General Counsel, Suncor Energy

Corinne Boone, Board Chair, Canadian Energy Research Institute

"Climate change, for the most used to be considered, a political issue in many circles. Most of the targets were developed from a top-down approach and the establishment of targets sometimes involved political trade-offs. In the run-up to the Paris Agreement negotiations of December 2015, countries developed individual Nationally Determined Contributions, based on input from a broad range of stakeholders, which became the basis for the negotiations. Climate change has become a significant business issue and is considered a key risk management issue globally."
CORINNE BOONE

"There is an off-Canada sentiment right now. We need to be able to get our product to market and then think about how do we actually make more improvements in this area? How do we get more people into sustainable finance conversations? This is an important part of being competitive."
ARLENE STROM

As one of the most carbon intensive economies in the OECD, Canada's transition blueprint will require substantial reduction in the carbon intensity of its high emitting sectors[1]. Discussing transition without engaging the oil and gas sector will leave a significant number of Canadians relying on this industry behind.

The panel discussed significant historic changes that have taken place since the UN Earth's Summit in June 1992, which led to the signature of the United Nations Framework Convention on Climate Change – the foundation upon which Annual UN climate negotiations have since taken place. The changes that ensued with the Paris Agreement in 2015 included a bottom-up inventory of what was achievable in member countries. Unlike the conversations that were happening post-1992, the Paris Agreement included engagement and support from some of the world's influential business leaders advocating for climate-related financial disclosure and sustainable finance including Mark Carney and Michael Bloomberg. More recently CEO from multi-national businesses and the investment community have become very vocal about the need for climate-related risk management, including Blackrock's Larry Fink.

It was noted that today's climate change advocates differ in their approaches. Some call for a 'just' transition by including the energy sectors, while others believe there is no room for the fossil fuel players. In parallel, the conversation on climate change for energy companies is being driven by shareholders and investors. For example, as a result of shareholder pressure, Suncor included carbon risk as one of its principal risks. The company now looks at various scenarios and maturing analysis over the years for 2-3C degree warming scenarios. Capital is also being reallocated into innovative technologies that extract energy out of renewable resources, and efforts to extract carbon out of air.

The challenge for energy companies that are working in this area include administrative burdens, and ring fencing of projects, especially in the green bond market. Also, the energy regulations at the provincial, federal and international levels create additional levels of complexity.

The ability of companies to receive approvals on various levels and incorporate them into decision making frameworks, makes capital processes burdensome and therefore influences their ability to compete. For companies such as Suncor which make 50-year capital investments, it is crucial to have policy certainty. Participants shared that regulatory clarity and policy certainty for all sectors of the economy will help Canadian companies to compete on the global scale. Canada needs to develop plans and clarify the requirements with incentives for companies to alter the way business is conducted.

[1] Environment and Climate Change Canada, *Interim Report of the Canadian Expert Panel on Sustainable Finance*, January 2018

SUSTAINABILE INVESTING

MODERATOR: ***Cary Krosinsky***, Yale University, Carbon Tracker

PARTCIPANTS: ***Aaron Bennett***, Director, Senior Research Analyst, Co-Chair – Sustainable Investing Committee, Jarislowsky Fraser

Heather Cooke, Senior VP and Investment Solutions Specialist, Fiera Capital Corporation

Martin Grosskopf, VP, Portfolio Manager, AGF Investments Inc.

Stephen Kibsey, Adjunct Professor at Concordia University, and former Vice-President of Emerging Risk Management at the Caisse

The panel discussed various issues related to sustainable investing.

Cary Krosinsky started the presentation by outlining the seven tribes of sustainable investing, including: values first; value first; impact investing; thematic investing; integration; shareholder engagement and advocacy; and, minimum standards.

Discussants identified their company's fit within the seven tribes of sustainable investing. They also discussed the importance of long-term investing. For example, Jarislowsky Fraser holds stocks for an average of over 7 years, which encourages disclosures and data gathering that can be connected to the investment decisions and integration models. Similarly, Fierra Capital stays attuned to global commitments and shifts. As a signatory to United Nations Principles for Responsible Investing (UNPRI), these principles help to focus Fierra Capital's efforts, especially around ESG integration.

It was suggested that the language of communication focusing on the long-term has to revolve around the whole ecosystem of being more sustainable within the cycle of investment decisions. ESG integration is becoming the central language of communications, and ESG materiality is increasingly important.

Sustainable finance opportunities can be incentivized by the public sector, particularly if it finds ways to enable the market to come up with solutions in the form of tax deferrals, offsets and other benefits to help reframe long-term investments. The challenge however revolves around slowing down when shareholders are so attuned to short-term cash flows. Making progress involves planning long-term, but not impeding short-term returns. In that regard, long-term thinking can help to move away from the quarterly volatility of company risks and burdens.

Regarding divestment, it was noted that there is a defacto divestment movement happening, and it includes more pension funds investing in private alternatives. Lower carbon portfolios are now being demanded by clients and shareholders alike. As a part of the investment analysis, companies are looking at ESG, and providing clients with information about company resiliency and commitment to long-term thinking. Companies that are managing ESG risks, and, who are able to extract material ESG risks, do better because they are seen as resilient and better quality companies.

“”In the mid 2020s we may not have enough resources for the transition that we are trying to achieve, so we have to turn to other creative ways and figure out how we go after these opportunities.”
CARY KROSINKSY

“The Canadian story is underrepresented and undersold within the global sphere. There are a lot of people making decisions and creating nomenclatures without the Canadian perspective. We need to be involved in representing that.”
AARON BENNETT

“One of the ways to help communicate why it's extremely important is that of the 40 largest asset managers in Canada, 100% of us are signatories to UNPRI. If you look at signatories out there, they control $80T in assets under management. The investment industry as a whole ecosystem is becoming more focused on the relevancy of being more sustainable and how we make investment decisions.”
HEATHER COOKE

“The government needs to find ways to incentivize and enable the market to come up with solutions. The extent that they do that will be extremely powerful.”
STEPHEN KIBSEY

“We need to be aware that there is an embedded agenda around ESG. It is a progressive agenda, and it is globalist. And it started with the UN. Accept that, and stop pretending that we are not trying to accomplish something with it.”
MARTIN GROSSKOPF

ESG AND CLIMATE RISK AND THE COST OF CAPITAL

MODERATOR: ***Jessica Strauss***, Principal Economist, Financial Markets, Market Structure and Regulation, Bank of Canada

PARTCIPANTS: ***Claudia Champagne***, Professor of Finance, Université de Sherbrooke, Desjardins Chair in Sustainable Finance

Ryan Riordan, Smith School of Business, Queen's University

Sally Shen, Research Associate, Global Risk Institute

"There are a number of studies that show that CSR and Responsible Investing are associated with a reduction in financial risk, both systematic, and specific, but where does this reduction come from? One possibility is that with social media and public information that is now freely available, firms are very much exposed to reputational losses to ESG related events and issues."
CLAUDIA CHAMPAGNE

"Climate change isn't just the existential risk, it's also a financial risk."
RYAN RIORDAN

"For institutional investors who are mostly doing finance, when we are getting into the climate risk topics, the first question we are asking is 'what is climate risk'?"
SALLY SHEN

This academic panel discussed ESG and Climate Risk and the impact of these risks on the cost of capital for companies. It included three research paper presentations.

Dr. Champagne's research on "The Performance of Extra-Financial Ratings as a Measure of ESG" was motivated by the inquiry into an association of responsible investing with a reduction in financial risk. The paper measures the extra financial performance of firms in relation to ESG risk. The results show that higher extra financial performance is associated with lower probability of negative ESG related events. Findings concluded that extra financial performance in one ESG dimension can have an impact on an ESG related event from another dimension. It was found that there is an insurance effect, meaning that the negative relationship between extra financial performance and ESG risk is observed regardless of the intensity of media coverage.

Dr. Riordan's paper "Carbon Risk" carries significant implications for the transition to low carbon economy. The study develops a straightforward measure of carbon risk and identifies industries and countries that are particularly exposed. Using this measure, they found "green" firms on average outperform "brown" firms, and that valuations of banks and other financial services firms are strongly related to the carbon risk of the firms they finance. As the risks and opportunities arise from this transition, there will be significant implications for Canadian companies. This research can have valuable implications for policymakers and investors alike, especially in managing carbon risk in their portfolios without hurting performance or preferences.

Dr. Shen's study "Strategic Asset Allocation with Climate Change" develops a top-down strategic pathway towards green investing. It shows that eco-investing should not be a puzzle or a sacrifice, if investors consider the unknown impact of climate change on different asset classes. Shen and her co-authors investigate the impact of climate change over a large group of asset classes including stocks, bonds, alternatives, and a list of green assets which have low-carbon emissions, in terms of their time-varying risk-return trade-offs. The preliminary results showed that green assets are in general resilient against temperature change, while many grey assets are negatively related to the risk of warming. Shen further suggests that the substantial demand for green assets under the pessimistic scenario verifies the suggestion that investors who are aware of climate change find it profitable to invest in green.

TAXONOMIES, DISCLOSURES AND FIDUCIARY DUTY

MODERATOR: ***Gord Beal***, Vice-President, Guidance, Research and Support, CPA Canada

PARTCIPANTS: ***Keith Ambachtsheer***, Director Emeritus, International Centre for Pension Management, Rotman School of Management, University of Toronto

Peter Johnson, Director, Environmental and Social Risk and Opportunity, Bank of Nova Scotia, and Chair of the CSA Task Group for a Green Taxonomy for Canada

Kevin Ranney, Director of Sustainable Finance Solutions, Sustainalytics

Pamela Steer, CFO, Payments Canada and past Chair of CFA Society Toronto

"When we look at responsible business, sustainability and climate change more broadly, it is about how we are going to drive behavioral change. I look forward to days when it's not sustainable finance but its just finance."
GORD BEAL

"...the importance of a clear narrative of how organizations create value for their stakeholders and for the larger community is paramount."
KEITH AMBACHTSHEER

"There is a huge opportunity in transition and we need to help catalyze that. We need to take a thought leadership position and be seen publicly to be doing so. We don't want to be left behind [Europe] due to taxonomy. We need to set a global standard for transition."
PAMELA STEER

"If we are serious about using finance and making it part of the solution, we need a better understanding of the sustainability characteristics of each company's activities and assets across a range of areas, including their impact on climate change, the circular economy, water, etc."
KEVIN RANNEY

The panel discussed the importance of accounting standards, taxonomies, disclosures, and fiduciary duty in sustainable finance.

In the past, disclosures were synonymous with financial accounting performance. Financial statements used to comprise over 80% of the information that was being used by investors in the decision-making process, but this continues to change. Today, while national accounting standards have evolved, international financial reporting standards are still evolving.

There is a range of reporting frameworks, including those provided by Global Risk Institute (GRI), Sustainability Accounting Standards Board (SASB), Taskforce on Climate-Related Financial Disclosure (TCFD), Carbon Disclosure Project (CDP), and others. All of these frameworks are intended to provide decision-oriented information, although their number at times creates confusion about the prevalence of one over the other. Ambachtsheer believes the framework developed by the International Integrated Reporting Council (IIRC) stands out above the others. He showed how the six-part <IR> Framework was applied by the Construction and Building Union Superannuation Fund of Australia (CBUS). The organization saw a massive, positive shift in operational effectiveness, increased satisfaction of its employees and shareholders, and experienced increased overall productivity and growth by utilizing the <IR> Framework.

Participants urged the financial community to look at the importance of time horizons when it comes to reporting and disclosures. There also needs to be a new language – a taxonomy that provides the necessary flexibility in the investments and capital markets. Having the right standards and good academic knowledge can help to inform stakeholders, such as Boards and CEOs, on the right investment decisions. In that regard, participants called for Canadian standardization programs to be created by CFA and CPA as soon as possible.

Sustainalytics, a global provider of ESG research and analysis, called for similar initiatives. Working with investment managers and asset owners, their core product is an ESG risk rating of 10,000 firms globally, almost half of which receive a deeper ESG assessment, including: value alignment; management of material risks, and intentionally allocating capital to assets/activities to green solutions. Going forward, Ranney suggested that disclosures and taxonomies will need to be created without being too stringent. These will help to identify what is sustainable and define company work by preparing for a transition to a more sustainable economy. Distinctions need to be made for activities that involve fossil fuels and contribute to sustainable energy systems, and those that don't.

Johnson discussed the standards currently being developed by the CSA, which are written to help countries establish a common language. The CSA is pursuing the

"Bringing together this idea about developing green standards in Canada we are building on this concept. If we don't develop something for Canada and take it to the world, it will be developed for us."
PETER JOHNSON

development of standards around a Canadian green taxonomy through the establishment of a task group of 16 that includes representatives from banks, natural resources sector, consulting firms, the big four, and others. Johnson warned that Canada needs to be at the table when international standards (such as ISO) are developed. If Canada does not create its own taxonomy, Canadian companies will be penalized and unable to compete in the global market. As is the case, the European taxonomy already excludes numerous industries that Canadian communities depend upon.

FINANCIAL IMPACTS OF CLIMATE CHANGE

MODERATOR: ***Sean Cleary***, Smith School of Business, Queen's University

PARTCIPANTS: ***Derek Lemoine***, University of Arizona

Yunfei Zhao, Concordia University

Ryan Riordan, Smith School of Business, Queen's University

This academic panel discussed various financial impacts caused by climate change. It included three research paper presentations.

Dr. Lemoine's study "Estimating the Consequences of Climate Change from Variation in Weather" examined the consequences of climate change to time series variations in weather. He showed that the effects of climate change on adaptation investments can be bounded by estimating responses to weather outcomes. The relationship becomes tighter between the two when also estimating responses to forecasts. He suggests that further empirical evidence on estimating the average effect of weather within each climate pattern is needed.

Zhao's paper "Impact of Natural Disasters on the Performance and Liquidity Ratios of Banks" attempts to determine the extent to which disasters affect the solvency (stability) of banks, and if different types of banks are affected differently by natural disasters. The research was motivated by the impact of natural and technological disasters' effect on the real economy. Only recently has research started to explore how such disasters affect financial institutions and the broader financial markets. Building on this momentum, this study examines accounting data for 11,563 banks that operate in 82 countries. The results show that the impact of disasters is mainly felt across commercial banks, and that banks with lower equity ratios can be more influenced by disasters.

Dr. Riordan's research "The Effects of Uncertainty on Market Liquidity: Evidence from Hurricane Sandy" tests the effects of uncertainty on market liquidity using Hurricane Sandy as a natural experiment. The storm caused unforeseen circumstances around the New York City area. Given the scale and nature of the storm, the potential damages of a landfall near the Greater New York area were unpredictable. Riordan compares the market reactions of Real Estate Investment Trusts (REITs) with and without properties in the widely-published evacuation zone of New York City prior to landfall. This study documents less trading and wider bid-ask spreads in affected REITs, confirming the detrimental effects of uncertainty on market functioning.

"This research is of interest to a variety of perspectives, including economists, who try to figure out what the price of carbon or an optimal policy should be. This question extends to various stakeholders including the Central Banks who might want this data, to understand how sectors are going to be affected, including insurance companies who will want this data to understand the potential damages."
DEREK LEMOINE

"Our major finding is that damages from disasters matter: They affect negatively both capital and leverage ratios, their impact depends on the bank's location and capitalization and accounting measures of solvency are similarly sensitive to disasters as regulatory measures."
YUNFEI ZHAO

"It's always been difficult to test because uncertainty shocks are rare and often have no clear beginning or end. The other problem is that uncertainty shocks also happen when we get risk shocks, so it's really difficult to disentangle."
RYAN RIORDAN

KEYNOTE ADDRESSES

Jim Leech
Chancellor at Queen's University
Former CEO of Ontario Teachers' Pension Plan

Jim Leech discussed sustainability from three distinct perspectives: as the former head of Ontario Teachers' Pension Plan (Teachers') – one of the largest global investors; as the Chair of the Mastercard Foundation; and, as the Chancellor of Queen's University. Remarking on his tenure at Teachers', he noted that it is one of the world's most innovative investors, with continued investing success despite increased global competition. A leader in governance, Teachers' was one of the co-founders of the Canadian Coalition for Good Governance in 2001. This organization contributed to sustaining the Canadian banking system during the financial crisis. Considering all of Teachers' success, Leech mentioned a missed opportunity – namely, the risk of environmental sustainability, which came to Teachers' attention only towards the end of his tenure.

In 2011, Barb Zvan one of the Senior Executives at Teachers' convinced the Investment Department that ESG should be expressed in Teachers' investment risk. Drawing in high profile investment leaders, Zvan gained the interest of the private investing classes, including Private Equity (PE) and Infrastructure. This led to a number of initiatives within the organization. Thanks to these efforts, ESG thinking at Teachers' today includes a well-defined strategy. This includes ESG risk and analysis, as well as ESG reward analysis, which helped the Investment Department to analyze opportunities within sustainability, including projects that would help Teacher's infrastructure investments become sustainable. This includes a new team that focuses on growth equity investments in companies that use technology and create new sectors. Subsequently, Teachers' expanded its engagement with portfolio companies to include ESG matters – a constructive investor dialogue with companies which is important to create change.

Drawing on his experience at Teachers', Leech identified two simple but significant roadblocks that contributed to Teachers' institutional inertia regarding sustainability. These include a lack of easily quantifiable measurements concerning the "E" and the "S" of ESG, and a lack of benchmarks that include ESG risk. He urged the creation of a framework that converts qualitative input into quantitative measures so that investment professionals can plug in "E" and "S" assumptions and receive their valuation results. The establishment of a new set of ESG adjusted benchmarks will take considerable research and data to draw upon, and will require 'buy in' from professional investors. Understanding the nature of the ecosystem revolving around short-term results, Leech urged participants to take note of long-term thinking and investing as the benefits outweigh the costs.

Regarding his current role at the Mastercard Foundation, Leech underlined significant challenges in each dimension of ESG which are becoming ever more present in Africa and worldwide, including natural disasters, unemployment, corruption and terrorism to name a few. While there are no quick fixes – the foundation recognizes that a long-term strategy requires collaboration of government, the private sector and funders to achieve sustainability.

Underlining his role at Queen's University, Leech stressed the unique role of educational institutions as platforms capable of bringing together multi-disciplinary stakeholders, and infusing sustainability related critical research in businesses, engineering, legal, medical and social sciences. Encouraging breakthroughs in sustainability in Canada, he concluded, by quoting the Unseen Revolution by Peter Drucker who predicted that workers, through their pension plans, will become the owners of America's largest companies – the true capitalists of the new world. Similarly, he noted, the work in sustainability will be accomplished by workers pushing their pension plans in making our world sustainable.

Andy Chisholm
RBC Board of Directors
Member of the Canadian Expert Panel for Sustainable Finance

Andy Chisholm outlined the motivations behind producing the final report of the Canadian Expert Panel on Sustainable Finance. The report incorporates opportunities in finance, outlines the foundational elements to bring opportunities to scale, and provides the financial instruments that can serve as enablers of necessary changes. The backdrop of the report builds on the warning of the scientific community, as well as the commitments made under the Paris Agreement, all of which call for warming of no more than 1.5-2C degrees by 2030, and getting to net zero by 2050.

Referring to McKinsey's "Climate Change: Everyone's Business" report, he described the 2-3-degree scenarios, which will inevitably result in the collapse of the Amazon rainforest, alteration of the chemical composition of water and air, and various parts of the world battling severe weather conditions, such as drought and heat. The implications of these changes are vast, including mass migrations, food shortages, and political instability. The global problems of today are a drop in the ocean of what is yet to come. Similarly, the opportunities presented by climate change are vast. If we manage to keep the warming under control, we will achieve massive energy systems changes, new transportation practices, real estate restructurings, and the evolution of the materials and industrial technologies. All of these present new opportunities.

Canada has a financial system with the potential to evolve and grab these transformations while possible. Companies in the financial world have to start building this into their skillset. Chisholm called on the government to create the conditions for the private sector to solve these issues and fix the broken narrative of pipelines versus carbon taxes. He noted that the financial sector is the enabler of the real economy, and the state has to create the necessary conditions for the unexpected innovations to emerge. Public-private partnerships can be a central theme of the changes. Policy and regulations aligning multi-levels of government will be crucial. Chisholm believes that the financial sector will innovate and figure out the solutions even under stringent government-imposed standards and regulations, so long as they are streamlined.

Chisholm advocated for data transparency and disclosure, stating "…what gets measured, gets disclosed, and what gets disclosed, gets fixed." By 2030, the policies and conditions should be in place to steer companies in the direction of climate-friendly decisions, resulting in the right type of investments. Academia, NGO, businesses and governments need to innovate together and make sustainability the core of their practices.

The rewards from taking on the changes are substantial: an economy that wins in the long term with less resources spent mitigating disasters; firms that focus on building competitive advantage – innovation which leads to the creation of jobs, IP value creation, export potential, pension security rather than pension melt-downs, better decision making and better risk adjustment, among others. Chisholm predicts that these changes will be a source of major competitive advantage for Canada and globally, and concluded, by adding that he looks forward to the days when sustainable finance is not an experiment, not an adjacency and is instead just finance.

Patricia Fuller
Ambassador for Climate Change,
Canada

As Canada's Ambassador for Climate Change, Patricia Fuller's mandate is to build alliances that accelerate action on climate change globally, and to promote Canadian clean technology. It's a dual mandate that reflects the challenges and opportunities of climate change. Fuller emphasized the benchmarks and commitments under the Paris Agreement, and warned that the emissions curve has not bent yet, and is unfortunately still rising. However, the opportunities are also vast. Referring to the estimate by the Global Commission on the Economy and Climate, Fuller emphasized that bold action could yield direct economic gain of $26 trillion through 2030 and the CleanTech market is projected to be worth $2.5 trillion by 2022.

The drive for climate change action globally will be centered on the quality of air and the environment. Referring to Ontario, Fuller mentioned the air quality improving significantly from the phase out of coal. As Canada moves forward in this effort, it will have to play to its strengths. Emphasizing several examples of Canada's leadership role in shaping and implementing the Paris Agreement, Fuller referred to the Ministerial and Climate Action group, which consists of a core group of countries (Canada, China and European Union) led by Canada in implementing the commitments of the Paris Agreement, in the face of US withdrawal. The establishment of the Global Commission for Adaptation, the Gender Equality in the UN Framework on Climate Change, as well as the Powering Past Coal Alliance are just a few of the examples of Canada's leadership efforts in climate action. Similarly, the Canadian Ambassador to the UN has been leading a group of countries in sustainable development goal financing, particularly in mobilizing finance for SDGs.

Canada also ranks on the top amongst G20 countries in clean technology and many Canadian companies are global leaders in this area. Referring to the strengths of the Canadian financial sector, Fuller mentioned the public-private collaboration in the area of blended finance in Canada, which has been immensely successful. Canada's blended finance in international development was labeled as 'pioneering' by multilateral development organizations. Among other efforts, Fuller mentioned the work of the Business Development Bank of Canada, which recently launched a $250-million industrial innovation venture fund.

Underlining the importance of the recommendations put forth by the Canadian Expert Panel on Sustainable Finance, Fuller called for mobilization of effort by the participating organizations in spearheading sustainable finance in Canada. Stressing the importance of building the ambition cycle, Fuller stressed the importance of being a part of the acceleration, and applauded Queen's University's Smith School of Business in launching the Institute for Sustainable Finance. Fuller noted that these are the kinds of efforts that will be central to supporting Canada's transition to low-carbon economy, and fulfilling its commitments.

Maya Saryyeva
Associate Director
Institute for Sustainable Finance
613.533.3067

maya.saryyeva@queensu.ca