## Introduction

The speed and scope of change in the financial services sector in the past decade is unprecedented. Many of the key research questions initially posed for this project have been transforming into much more intricate investigations than their initial formulation. Since we started working on fintech for the CDO project, examining the possibilities of fintech in and for creating digital opportunity in Canada, the sector has grown rapidly both in Canada and around the world. Our research has showed us that we need to rethink many issues in this sector....the future of cash and payment methods; physical and digital currencies; data privacy; and the best ways to support Canadian innovation in this rapidly growing economic sector.

In the years since the CDO Project got underway digital finance has become something less extraordinary, more commonplace and better understood. At the same time, the extraordinary rise and fall of Bitcoin have made many wary of both the digitalization of money and of the viability of cryptocurrencies as a secure storage vehicle for value. Regulation and governance of fintech development and its viability today, are key issues for the future for Canadian policy, but also for the world at large. It is impirtant to bear in mind that Canada's policy framework for fintech innovation and for development of the fintech sector takes place in the G20 context, where member countries announced at the most recent G20 Summit in Buenos Aires, Argentina that they would be taking concerted action to regulate the cryptocurrency world. While acknowledging the benefits of the technological innovations that come with the creation of cryptocurrencies and that can benefit the global economy, the G20 leaders collectively called for cryptocurrency regulation to deal with the problematic issues associated with it, namely money laundering; terrorism finance; excessive risk associated with speculation; and co-ordination of cross-border taxation. The key questions have become how to regulate disruptive technologies without stifling innovation and allowing fintechs and other innovative technologies to make Canada's domestic financial industry competitive internationally by not falling behind with developing new technologies. Also, how to ensure that consumer data is not jeopardized and that our central bank is comfortable with the technologies integrated into our financial industries and how we encourage Canadian fintechs to remain in Canada rather than go off to the US in search of investment opportunities.

Canadian digital innovation and fintech landscapes have made great advances in a relatively short time. We still have a long way to go to remain competitive with our G20 peers, however. Our research findings show what progress we have made over the course of recent years, but also points to work we still have to do based on the activities and accomplishments of our peers in this regard. Our research revealed that innovation happens and grows at a slower pace here in Canada because regulations are hindering fintech innovation. Canadian innovation in the financial services industry is lagging behind, due to a "wait and see' regulatory approach according to industry players. The Bank of Canada issued its findings on its review

of the viability of distributed ledger technology (DLT) for wholesale payment systems in September 2017, concluding that while DLT looks promising in terms of efficiency gains, fully realizing this benefit would involve expanding the scope of the ledger's coverage to include additional assets as well as their full trading cycle. With cryptocurrency contracts starting to trade on certain futures exchanges in December 2017, the Investment Industry Regulatory Organization of Canada demanded greater margin requirements for cryptocurrency contracts traded on commodities futures exchanges.

In June 2018 the Canadian government started working on regulation of "virtual currencies." The initial draft regulation, scheduled to be released in late 2019 is expected to require blockchain and crypto exchange companies to keep detailed records of users and information and require them to inform the authorities of any suspicious activity as well as to provide written policies and procedures and to undergo regular risk assessments and audits. Everything involved with fintech development requires a high degree of technical expertise making access to talent and the capacity to produce our own specialized talent pool in Canada important issues for consideration.

More recently, in September 2018, the Ministry of Finance called for public consultation to assist in advising on the development of an "open banking" system, a framework where consumers and businesses can authorize third party financial service providers to access their financial transaction data through secure online channels. The benefit to consumers and business is that it allows access to new products and services that enable them to manage their financial affairs better. In jurisdictions that have adopted open banking systems, participating service providers must meet standards with respect to privacy, security and operational stability. The important thing is that consumers and small business are not obliged to use the system, they can opt-in and opt out at any time and a clear system exists to manage inquiries and address complaints. In many respects, a benefit of an open banking framework is its potential to increase individual control over personal financial information. Public consultation on the open banking system proposal closed on February 2019. Following the public consultation, the Ministry of Finance will deliver a report assessing the merits of open banking for Canada. The initiative carries a strong focus on safeguarding consumer privacy; ensuring the security of financial transactions; and maintaining the stability of the financial sector. The Committee will consider implementation opportunities and challenges later in the vear.

The fintech sector is still very much a work-in-progress in Canada, and around the world. National jurisdictions all seek to protect consumers without stifling innovation. Regulatory sandboxes seem to mange to do just that and we suggest that it would be prudent for open banking to go through a similar process once the Ministry of Finance releases the results of its open banking consultation process. Ownership of data is the huge issue confronting policy-makers today. Various models are suggested, from straight out government ownership and control, to

private control of ownership of data as well as the idea of a public-private model. Each has merits and shortcomings, but the public/private model appears to offer both security and checks and balances over both public and private authority.

Carolyn Wilkens, Senior Deputy Governor of the Bank of Canada said in a speech at Princeton University last year: "Innovation in this area could have a fundamental impact on social welfare and research and policy work is needed in guiding it to the best outcome for the people in the economy." At the G20 level, Canada's reputation for steady regulatory leadership should serve it well. In Argentina the G20 agreed that regulation of cryptocurrencies should be a priority for the 2019 Japan summit. This will need to go beyond the more traditional KYC (know-your-customer) issues related to fintech, moving into

the fundamental issues surrounding fintech having to do with data: who owns it?; how is it valued?; who should have access to it? This is a monumental governance issue that governance experts around the world are only beginning to tackle. Fintech progress everywhere is likely to be stymied until some general precepts regarding data ownership, control, and usage are established. If Canada focuses on this issue the opportunities for leadership and economic strength will expand if it can demonstrate its secure financial services sector to the international investment community.