BANKS AS DELEGATED REGULATORS OF TECHNOLOGY

ANASTASIA KONINA*

Canada's largest banks rely on private developers of regulatory technology (RegTech) to comply with the requirements of the Office of the Superintendent of Financial Institutions (OSFI). RegTech's algorithms allow banks to organize unstructured data, identify, assess and mitigate risk, and generate and submit reports. While the use of RegTech significantly facilitates financial reporting and compliance, it also presents risks. The unsupervised process of translating the language of regulations into computer code may lead to the misinterpretations of regulatory requirements. Also, due to the opacity of private algorithms, mistakes of RegTech instruments may go unnoticed, resulting in systemic failures.

In light of these risks, this article examines the potential of Canada's federally regulated banks to act as delegated regulators of RegTech. Drawing on OSFI's previous initiatives, this article suggests that the regulator create RegTech quality standards and delegate the enforcement of these standards to banks through outsourcing contracts. These contracts should contain publicly mandated RegTech specifications and clauses that reserve the banks' rights to monitor, audit, and punish non-compliant RegTech companies and share information with OSFI.

This article also discusses the benefits and policy implications of delegated regulation of RegTech. First, by imposing a public duty on the banks, delegated regulation causes changes in corporate governance. Second, it allows the under-resourced regulator to use banks as regulatory resources. Third, it extends the application of public norms to those RegTech companies that otherwise would have avoided public oversight. Fourth, it reshapes the market for RegTech services by forcing banks to develop in-house technology that, in the long term, may be a cheaper and less risky alternative to outsourcing.

In conclusion, this article addresses the arguments that may be levelled against the delegated regulation of RegTech and discusses opportunities for more direct involvement of the regulator in technology-driven reporting and compliance.

TABLE OF CONTENTS

I. INTRODUCTION 754
II. WHAT IS REGTECH? 758
III. SOURCES OF RISK PRESENTED BY REGTECH 760
A. TRANSLATION DISTORTIONS 760
B. THE OPACITY OF ALGORITHMS 762
IV. THE EMERGENCE OF DELEGATED REGULATION OF SERVICE PROVIDERS 763
V. TOWARDS DELEGATED REGULATION OF REGTECH BY BANKS 767
VI. IMPLICATIONS OF DELEGATED REGULATION FOR REGULATED BANKS 768
A. RESTRUCTURING OF CORPORATE GOVERNANCE 769
B. SHIFT FROM EXTERNAL TO INTERNAL SERVICE DELIVERY MODEL 770

* LLD, Université de Montréal. I am grateful to Professor Karim Benyekhlef for introducing me to these issues. My sincere thanks to the anonymous peer reviewers for their thoughtful comments that helped improve the quality of this article. All mistakes are mine.

VII. ADDRESSING ANTICIPATED CRITICISM OF DELEGATED REGULATION 771
VIII. CONCLUSION 775

I. INTRODUCTION

The G20's 2009 reform plan, issued in the aftermath of the Global Financial Crisis,[1] resulted in the rapid increase of regulations that require financial institutions to collect, analyze, and report granular data to financial watchdogs.[2] Between 2009 and 2012, risk-averse regulators across the G20 member-states published over 50,000 new rules that provide, among other things, for reporting portfolio risk data for calculating capital, liquidity coverage ratios, risk assessments against defined scenarios, and counterparty exposures.[3] In 2015 alone, regulators published over 50,000 regulatory updates, almost double that of 2012.[4] According to some forecasts, banks' operational burden in managing regulatory compliance will double every few years.[5] In 2021, some banks expect to spend more than 5 percent of their revenue on reporting and compliance, which represents an increase compared to previous years.[6]

Canada's federal regulator, the Office of the Superintendent of Financial Institutions (OSFI),[7] recently pointed out that "technology is a 'key enabler' for [Canada's] financial institutions."[8] In Canada, like in many other countries, banks increasingly rely on regulatory technology, or RegTech, to ensure compliance with voluminous reporting requirements. The word "RegTech" describes nothing in particular. Rather it refers to a host of arrangements that seek to facilitate the management of reporting and compliance. Some examples of RegTech include the following instruments:

(1) data mining algorithms and predictive analytics technology that can aggregate data, identify patterns, and organize data into consumable information that can be used for reporting and modelling institutions' potential risks;

---

1 G20 Leaders, "Global Plan for Recovery and Reform" (2 April 2009), online: *G20 Information Centre* <www.g20.utoronto.ca/2009/2009communique0402.html>.

2 Douglas W Arner, Jànos Barberis & Ross P Buckley, "FinTech, RegTech, and the Reconceptualization of Financial Regulation" (2017) 37:3 Nw J Intl L & Bus 371.

3 Institute of International Finance, "RegTech in Financial Services: Technology Solutions for Compliance and Reporting" (March 2016), online: <www.iif.com/Portals/0/Files/private/iif-regtech_in_financial_services_-_solutions_for_compliance_and_reporting.pdf?ver=2021-11-02-142943-690>; Tom Groenfeldt, "Taming The High Costs of Compliance With Tech," *Forbes* (22 March 2018), online: <www.forbes.com/sites/tomgroenfeldt/2018/03/22/taming-the-high-costs-of-compliance-with-tech/?sh=72ecc5915d3f>.

4 Groenfeldt, *ibid*.

5 *Ibid*.

6 Duff & Phelps, "Global Regulatory Outlook 2021: The Future of Global Financial Regulation" (2021), online: <ww.kroll.com/en/insights/publications/financial-compliance-regulation/global-regulatory-outlook-2021>.

7 The Office of the Superintendent of Financial Institutions was established in 1987 pursuant to the *Office of the Superintendent of Financial Institutions Act*, being Part I of the *Financial Institutions and Deposit Insurance System Amendment Act*, RSC 1985, c 18 (3rd Supp), as amended by *An Act to amend, enact and repeal certain laws relating to financial institutions*, SC 1996, c 6.

8 Canada, Office of the Superintendent of Financial Institutions (OSFI), *Developing Financial Sector Resilience in a Digital World: Selected Themes in Technology and Related Risks* (Discussion Paper), (Ottawa: Office of the Superintendent of Financial Institutions, September 2020) at 8 [OSFI, *Developing Financial Sector*].

(2) algorithms that monitor low-quality transaction metadata produced by payment systems to recognize money laundering and terrorism financing; and

(3) applications for automated interpretation of qualitative information conveying the behaviour of individuals, such as e-mails and spoken word.[9]

Technology-driven compliance with regulatory requirements involves the following steps: (1) government regulators issue reporting and compliance requirements for financial institutions; (2) financial institutions outsource the collection and analysis of required data to private RegTech companies, or, in some cases, perform these functions in-house;[10] and (3) financial institutions submit reports to the regulator.

This process presents the financial sector with challenges and opportunities. On the one hand, the use of technology offers an opportunity to increase the efficiency of compliance.[11] As some commentators point out, "RegTech developments to date are primarily a [bank's] response to the huge costs of complying with new institutional demands by regulators and policy makers."[12] On the other hand, the delegation of core bank duties to private RegTech companies may disrupt the effectiveness of OSFI's safety-and-soundness supervision.[13] First, the risk of so-called "translation distortions" emerges when RegTech service providers translate regulatory requirements into computer code.[14] A transition from legal parlance to computer code is fraught with uncertainty. It may lead to the misrepresentation of regulatory intent and particular requirements.[15] Second, reliance on RegTech instruments presents banks and financial regulators with the problem of the opacity of RegTech algorithms. Opacity materializes when a recipient of an algorithm's output does not understand how or why an algorithm made a decision based on inputted data.[16] The main sources of opacity are trade secrets and technical factors, "including the use of complex probabilistic analytics and decision-making methods."[17] The inability to identify mistakes in the codes of RegTech

---

9 Institute of International Finance, *supra* note 3 at 3–4.

10 Matt Zames, "2016 Letter to Shareholders: Redefining the Financial Services Industry" (2016), online: <reports.jpmorganchase.com/investor-relations/2016/ar-ceo-letter-matt-zames.htm> (pointing out that the bank's strategy "is a combination of build, buy and partner in order to continue delivering the best digital products and services at scale"). For the purposes of this article, outsourcing is "a temporary business relationship, based on competitive processes and designed to develop and implement a needed mission solution, fill an immediate gap in skills or other aspects of the organization, or improve performance and efficiency" see Stan Soloway & Alan Chvotkin, "Federal Contracting In Context: What Drives It, How To Improve It" in Jody Freeman & Martha Minow, eds, *Government by Contract: Outsourcing and American Democracy* (Cambridge, Mass: Harvard University Press, 2009) 192 at 195.

11 OSFI, *Developing Financial Sector*, *supra* note 8 at 11; Institute of International Finance, *supra* note 3 at 2; Deloitte, "RegTech Is the new FinTech: How Agile Regulatory Technology Is Helping Firms Better Understand and Manage Their Risks" (2016) at 5, online: www2.deloitte.com/content/dam/Deloitte/tw/Documents/financial-services/tw-fsi-regtech-new-fintech.pdf>; Arner, Barberis & Buckley, *supra* note 2 at 384.

12 Arner, Barberis & Buckley, *ibid* at 374.

13 Lawrence G Baxter, "Adaptive Financial Regulation and RegTech: A Concept Article on Realistic Protection for Victims of Bank Failures" (2016) 66:3 Duke LJ 567 ("[o]ne of the primary missions of a bank regulator is to prevent bank failure. This is known as 'safety-and-soundness' supervision" at 578).

14 Kenneth A Bamberger, "Technologies of Compliance: Risk and Regulation in a Digital Age" (2010) 88:4 Tex L Rev 669 at 706 [Bamberger, "Technologies of Compliance"].

15 *Ibid* at 707.

16 Jenna Burrell, "How the Machine 'Thinks': Understanding Opacity in Machine Learning Algorithms" (2016) 3:1 Big Data & Society at 1.

17 Sandra Wachter, Brent Mittelstadt & Luciano Floridi, "Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation" (2017) 7:2 Intl Data Privacy L 76 at 79.

algorithms due to opacity and translation distortions may result in fragmented mistakes and systemic failures of financial regulation.

The American experience of the 2008 financial crisis offers an instructive illustration of how a lack of human supervision over banks' automated risk-assessment processes facilitated regulatory violations.[18] Particularly, commentators recount how "'smart' computerized risk models failed to"[19] correctly assess "the risk of default by mortgage borrowers, price asset-backed securities or derivatives proportionate to their true risks, or ensure adequate hedging and risk management by financial institutions."[20] The unsupervised use of technology was partially to blame for the economic collapse that devastated the livelihoods of millions of people.[21] Given its complexity and self-learning abilities, the outsourced RegTech infrastructure can cause similar if not greater harm than flawed risk assessment models of separate financial institutions.

Although reliance of the regulated banks on complex algorithms for reporting and compliance is a relatively recent development, the outsourcing of core functions by banks to third parties is not new. In Canada, federally regulated banks have been enlisting third parties to provide a number of services, such as information system management and maintenance, investment management, marketing and research, accounting, and internal audit.[22] To minimize risks presented by these familiar types of outsourcing, OSFI relies on a soft law instrument called "Guideline B-10."[23] This Guideline defines the relationship between banks and third-party service providers. It contains pro forma, technology-neutral clauses on reporting, audits, and liability that regulated banks should include in their outsourcing contracts.[24] The limits on the regulated banks' freedom to enter into contracts for the provision of services are best explained by the importance of these banks for the stability of the domestic financial system.[25] Rushed and poorly planned outsourcing of core business functions by one systemically important bank can have a domino effect on other financial institutions.[26] Therefore, by constraining the outsourcing efforts of big banks, OSFI seeks to ensure decision-making in the public interest.

---

18 Tom CW Lin, "The New Financial Industry" (2014) 65:3 Ala L Rev 567 at 579–80.

19 *Ibid* at 580.

20 Erik F Gerding, "Code, Crash, and Open Source: The Outsourcing of Financial Regulation to Risk Models and the Global Financial Crisis" (2009) 84:2 Wash L Rev 127 at 166–67.

21 *Ibid* at 164–67; Bamberger, "Technologies of Compliance," *supra* note 14 at 717–22.

22 Canada, Office of the Superintendent of Financial Institutions, *Outsourcing of Business Activities, Functions and Processes* (Guideline), No B-10 (Ottawa: Office of the Superintendent of Financial Institutions, 2009) at 18, online: <www.osfi-bsif.gc.ca/Eng/Docs/b10.pdf> [OSFI, *Outsourcing of Business Activities*].

23 *Ibid*.

24 *Ibid* at 12–17.

25 Anita Anand & Andrew Green, "Regulating Financial Institutions: The Value of Opacity" (2012) 57:3 McGill LJ 399 at 407.

26 Financial Stability Board, "Policy Measures to Address Systemically Important Financial Institutions" (4 November 2011), online: <www.fsb.org/wp-content/uploads/Policy-Measures-to-Address-Systemically-Important-Financial-Institutions.pdf> (describing systemically important financial institutions as "financial institutions whose distress or disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity" at para 3). See also Office of the Superintendent of Financial Institutions, News Release, "Superintendent Formally Designates Canadian D-SIBs and Sets Minimum Loss Absorbing Capacity Requirements" (21 August 2018) online: <www.osfi-bsif.gc.ca/Eng/osfi-bsif/ med/Pages/nr20180821.aspx> ("The six designated [domestic systemically important banks] are the Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, National Bank of Canada, Royal Bank of Canada and Toronto-Dominion Bank." The Royal Bank of Canada has also been designated as a global systemically important bank by the Financial Stability Board).

This article argues that this public interest-oriented perspective should also define the federally regulated banks' contracts for RegTech services. It suggests that OSFI rely on a familiar instrument of pro forma outsourcing contracts to monitor, audit, and punish non-compliant RegTech companies. However, as private technology becomes more complex and more consequential, technology-neutral clauses of Guideline B-10 should be accompanied by publicly mandated RegTech quality standards that addresses the problem of translation distortions and the opacity of algorithms.

It is anticipated that the resulting system of mandated RegTech governance,[27] to which this article refers as "delegated regulation," will have important benefits and policy implications. First, it will cause changes in banks' corporate governance. Banks will implement a more structured approach to innovation management — they will improve the system of internal control over the outsourced providers of RegTech instruments, grow compliance departments, and diversify the expertise of boards of directors. Second, it will allow the under-resourced regulator to use regulated banks as additional regulatory resources of RegTech. Third, it will extend the application of public norms to those RegTech companies that otherwise would have avoided public oversight. Fourth, it will reshape the market for RegTech services by forcing banks to develop in-house technology that, in the long term, may be a cheaper and less risky alternative to outsourcing.

This article is structured as follows. Part II provides an overview of the main applications of RegTech. Part III describes how reliance on private RegTech infrastructure can undermine the effectiveness of OSFI's regulatory design. The unsupervised process of translating the language of regulations into a computer code may lead to the misinterpretations of regulatory requirements. Also, due to the opacity of private algorithms, mistakes of RegTech instruments may go unnoticed, resulting in systemic failures. Part IV examines OSFI's previous initiatives of delegating third party oversight to regulated banks and describes the benefits of delegated regulation. Part V outlines baseline RegTech quality standards. Part VI describes the implications of delegated regulation of RegTech for the banks' governance and the market for RegTech services. Finally, Part VII envisions and addresses the main arguments that may be levelled against the delegated regulation of RegTech. It also examines the opportunities for direct involvement of OSFI in the regulation of technology-driven reporting and compliance.

---

[27] Rory Van Loo, "The New Gatekeepers: Private Firms as Public Enforcers" (2020) 106:2 Va L Rev 467 at 472 (describing mandated governance).

II. WHAT IS REGTECH?

Broadly speaking, the word "RegTech" refers to new technologies that seek to facilitate the performance of regulatory requirements.[28] Currently, the most promising applications of RegTech are the following:[29]

- COMPLIANCE: Due to the proliferation of regulations, banks struggle to organize multiple sources of authority into a comprehensive set of compliance rules. Ideally, banks should be able to quickly establish the hierarchy of applicable rules and identify changes to these rules introduced by new laws, regulations, and policies. Some RegTech instruments use algorithm-driven ontologies to classify different rules in accordance with the functions that they perform — obligation, prohibition, exemption, or sanction[30] — and then apply this general classification to different sources of rules (such as laws, regulations, guidance), types of financial institutions, and transactions.[31] A regularly updated database organized in accordance with standards-based ontologies can help banks determine which rules cancel, complete, or pre-empt the others.[32] Other less sophisticated RegTech instruments assist banks in filtering regulations and routing them to different departments for interpretation and application.[33]

- RISK MANAGEMENT: RegTech instruments can conduct scenario analysis and model existing or potential risks based on data about the client's operations. As mentioned in the introduction, regulations adopted by the members of the G20 require that financial institutions conduct modelling and analytical reporting based on their internal data.[34] For example, global systemically important banks and some large domestic systemically important banks rely on internal estimates of risk components to determine the capital requirement for given credit exposure.[35] Within the framework of the internal ratings-based process, a bank must perform a credit risk stress test to assess the effect of specific conditions on its regulatory capital requirements.[36] Because data sources required to conduct the test are voluminous, modelling and analysis of risks require powerful algorithmic tools that can structure and interpret granular data in realtime. Many RegTech companies provide data

---

28 Institute of International Finance, *supra* note 3 at 2.

29 Myron Mallia-Dare & Brandon Meyer, "RegTech: How Technology Can Revolutionize Compliance" (17 February 2020), online (blog): <www.mondaq.com/canada/finance-and-banking/893864/regtech-how-technology-can-revolutionize-compliance>.

30 Reginald Ford et al, "Automating Financial Regulatory Compliance Using Ontology+Rules and Sunflower" in Anna Fensel et al, eds, *SEMANTiCS 2016: Proceedings of the 12th International Conference on Semantic Systems, Leipzig, September 2016* (New York: Association for Computing Machinery, 2016) at 113.

31 CSIRO, "Logic and Reasoning," online: <research.csiro.au/bpli/our-research/reasoning/>.

32 Xibin Gao & Munindar P Singh, "Extracting Normative Relationships from Business Contracts" in Alessio Lomuscio et al, eds, *AAMAS '14: Proceedings of the 2014 International Conference on Autonomous Agents and Multi-Agent Systems, Paris, 5–9 May 2014* (Richland: International Foundation for Autonomous Agents and Multiagent Systems, 2014) 101 at 101.

33 Groenfeldt, *supra* note 3.

34 See e.g. Basel Committee on Banking Supervision, "The Basel Framework" (2021), online: *Bank for International Settlements* <www.bis.org/basel_framework/index.htm?export=pdf>.

35 *Ibid*.

36 Canada, Office of the Superintendent of Financial Institutions, *Capital Adequacy Requirements (CAR) 2019* (Ottawa: Office of the Superintendent of Financial Institutions, 2020), online: <www.osfi-bsif.gc.ca/Eng/fi-if/rg-ro/gdn-ort/gl-ld/Pages/CAR19_index.aspx>.

mining and machine learning tools to assess and monitor the health of investment portfolios, conduct stress tests, and ensure that financial institutions are not taking on undue risk.[37]

- REGULATORY REPORTING: RegTech instruments can assist clients in generating and submitting reports in accordance with specific requirements of different regulators across the world.[38]

- CLIENT IDENTITY MANAGEMENT AND TRANSACTION CONTROL AND MONITORING: To assist banks in complying with international and domestic anti-money laundering and know-your-customer requirements,[39] some RegTech companies develop instruments that monitor financial transactions for suspicious activity[40] and use blockchain for client identity authentication.[41]

Because the requirements regarding the last type of RegTech instruments fall under the jurisdiction of Canada's financial intelligence agency, FINTRAC, they are beyond the scope of this article.[42] For our purposes, suffice it to say that FINTRAC's and OSFI's overlapping jurisdiction over Canada's financial institutions will likely result in joint or, at least, coordinated regulation of RegTech instruments in the medium-term perspective.[43]

Currently, OSFI examines opportunities for regulating compliance, risk management, and regulatory reporting instruments that define the banks' design of compliance management.[44] All these instruments have one thing in common: they rely on artificial intelligence and machine learning to structure data, generate reports using this data, and use the same data for multiple purposes.

Before this article proceeds, it is necessary to make a brief note on terminology. For a fairly long time, financial institutions have been using instructional algorithms to facilitate compliance.[45] An instructional algorithm is a sequence of precise directions telling a computer how to perform a task.[46] Pedro Domingos describes these algorithms as a simple

---

37 Institute of International Finance, *supra* note 3 at 3–4.

38 Mallia-Dare & Meyer, *supra* note 29.

39 Financial Transactions and Reports Analysis Centre of Canada (FINTRAC) releases a number of regulations and guidelines under *Proceeds of Crime (Money Laundering) and Terrorist Financing Act,* SC 2000, c 17; Financial Action Task Force, *International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation: the FATF Recommendations*, (Paris: FATF, 2012), online: <www.fatf-gafi.org/recommendations.html>.

40 Mallia-Dare & Meyer, *supra* note 29.

41 Institute of International Finance, *supra* note 3 at 3.

42 Canada, Office of the Superintendent of Financial Institutions, *Update and Consultation on OSFI's Activities on Anti-Money Laundering/Anti-Terrorist Financing (AML/ATF) Supervision* (Industry Letter), (Ottawa: OSFI, 2020), online: <www.osfi-bsif.gc.ca/Eng/fi-if/in-ai/Pages/20200921-nr.aspx> (specifying that FINTRAC will be the primary agency conducting AML/ATF assessments of federally regulated banks).

43 *Ibid* (indicating that OSFI will focus on the prudential implications of AML/ATF compliance, as part of its ongoing assessment of banks' regulatory compliance management frameworks).

44 OSFI, *Developing Financial Sector*, *supra* note 8 at 11.

45 Kevin Petrasic, Benjamin Saul & Matthew Bornfreund, "The Emergence of AI RegTech Solutions for AML and Sanctions Compliance," *Risk & Compliance* (April–June 2017), online: <www.whitecase.com/publications/article/emergence-ai-regtech-solutions-aml-and-sanctions-compliance>.

46 Pedro Domingos, *The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World* (New York: Basic Books, 2015) at 1.

input-output model, in which "the data goes into the computer, the algorithm does what it will with it, and out comes the result."[47]

The terms "artificial intelligence" and "machine learning" are often used together to refer to advanced analytics instruments.[48] The term "artificial intelligence" or "AI" describes systems that "simulate or enhance the cognitive capabilities of humans without constant and ongoing human input."[49] Machine learning is an advanced form of AI, whereby the machine "learns" how to improve the performance of tasks and may modify an algorithm as it processes new data sets.[50] Some benefits of using machine learning for financial reporting and compliance are that it may lead to self-improving and more accurate methods for data analysis, modelling, and forecasting.[51]

III. SOURCES OF RISK PRESENTED BY REGTECH

It is difficult to generalize about RegTech instruments since their use by financial institutions comprises both risks and opportunities. On the one hand, it was mentioned above that a benefit of using RegTech is that it increases the efficiency of compliance. On the other hand, it remains to be seen whether the delegation of reporting and compliance functions to private RegTech companies will weaken the effectiveness of OSFI's supervision. As a predictive matter, one can expect several reasons why this may be the case.

A. TRANSLATION DISTORTIONS

First, the delegation of reporting and compliance to private RegTech companies can have implications for the interpretation and implementation of regulatory requirements. For example, when RegTech developers assist a bank with reporting on capital adequacy requirements,[52] they program an algorithm to collect, structure, and analyze data on which capital is calculated. Essentially, they translate the rules written by a government agency into a reusable computer code which then administers compliance with financial regulations. However, even if software engineers use their best efforts to ensure the accuracy of algorithms, a transition from legal parlance to computer code is a complex process that is characterized by uncertainty. In some cases, it can lead to inadvertent mistakes and misrepresentations of regulatory intent (so-called "translation distortions"[53] or "translation gaps"[54]).

Recent work on encoding provisions on social benefits in New South Wales, although in some ways specific to its context, offers an instructive illustration of how the problem of

---

47 *Ibid* at 6.

48 Aviv Gaon & Ian Stedman, "A Call to Action: Moving Forward with the Governance of Artificial Intelligence in Canada" (2019) 56:4 Alta L Rev 1137 at 1140.

49 *Ibid* at 1139.

50 *Ibid* at 1139–40.

51 Institute of International Finance, *supra* note 3 at 4.

52 Eric A Posner, "How Do Bank Regulators Determine Capital-Adequacy Requirements?" (2015) 82:4 U Chicago L Rev 1853 ("[c]apital adequacy refers to the extent to which the assets of a bank exceed its liabilities, and it is thus a measure of the ability of the bank to withstand a financial loss" at 1853– 54).

53 Bamberger, "Technologies of Compliance," *supra* note 14 at 706-707.

54 New Zealand, Department of Internal Affairs, *Better Rules for Government Discovery Report* (DIA, 2018) at 14, online: <www.digital.govt.nz/dmsdocument/95-better-rules-for-government-discovery-report/html>.

translation may materialize. A governmental program called "Creative Kids" provides that a grant is payable to parents of children aged four and a half to 18 years old.[55] A human knows that a child born on 12 January 2015 turned four and a half years old on 12 July 2019, regardless of the number of months that have 30 or 31 days, and regardless of whether the month of February has 28 or 29 days in it. It is difficult to convey this simple concept to machines. Software engineers cannot leave out any details on the calculation of the number of days that seem obvious to humans. They must develop a set of precise formulas that account for several possible scenarios to explain when a four-and-a-half year old child becomes eligible for a grant.[56] Although this example does not relate to financial reporting, similar difficulties may arise when a bank must account for commitments that terminate in one and a half or three and a half years for risk assessment purposes.

Additional difficulties arise when regulators formulate the goals and principles of supervision and delegate to banks the decisions about the means of achieving them. For example, OSFI releases regulatory compliance management guidelines which recommend each federally regulated bank to adopt "reasonable procedures" to address risk.[57] To meet the reasonableness requirement, the procedures must achieve the prescribed outcome from the standpoint of a reasonable person.[58] Banks' risk managers contextualize these guidelines by ascribing to them specific methodologies that correspond to the institutional notion of reasonableness.[59] These methodologies may or may not reflect the regulator's intent.

The use of technological infrastructure for reporting and compliance exacerbates the challenges presented by a principles-based approach to regulation. Kenneth Bamberger notes that "[t]he necessity of developing business rules that can be integrated into digital logic establishes a bias towards the knowable and measurable...as well as towards existing types of metrics. As such, the process tends to exclude from automation those things that cannot be automated, such as the more subjective indicators of risk."[60] However, reasonable monitoring of a financial institution's risk exposure may also require the analysis of communications conveying the behaviour of individuals, such as e-mails, minutes, and transcripts.[61] Although some language processing applications can automate the interpretation of these sources to a certain extent,[62] the ambiguity of natural language remains an important obstacle to developing authoritative reporting and compliance instruments.[63]

---

55 New South Wales, "Creative Kids," online: <www.create.nsw.gov.au/category/funding-and-support/creative-kids/>.

56 TJ Harrop, "Computers Don't Think Like Humans — Here's What That Means for Your Policies, Contracts, and Laws" (1 March 2019), online (blog): <medium.com/@tjharrop/computers-dont-think-like-humans-here-s-what-that-means-for-your-policies-contracts-and-laws-754b9106c15a>; Matthew Waddington, "Machine-Consumable Legislation: A Legislative Drafter's Perspective - Human v Artificial Intelligence" [2019] 2 Loophole 21 at 46.

57 Canada, Office of the Superintendent of Financial Institutions, *Regulatory Compliance Management (RCM)* (Guideline), No E-13 (Ottawa: Office of the Superintendent of Financial Institutions, 2014) at 5, online: <www.osfi-bsif.gc.ca/Eng/Docs/e13.pdf>.

58 *Ibid*, n 8.

59 Cristie Ford, "Macro- and Micro-Level Effects on Responsive Financial Regulation" (2011) 44:3 UBC L Rev 589 (referring to such principle-based rules as sources of power at the micro-level at 615).

60 Bamberger, "Technologies of Complicance," *supra* note 14 at 707.

61 Institute of International Finance, *supra* note 3 at 3.

62 *Ibid*.

63 Aaron K Massey et al, "A Strategy for Addressing Ambiguity in Regulatory Requirements" in *2014 IEEE 22nd International Requirements Engineering Conference (RE), Kalskrona, Sweden, 2014* (Piscataway, NJ: Institute of Electrical and Electronics Engineers, 2014).

B. THE OPACITY OF ALGORITHMS

Another reason why RegTech instruments may pose challenges for safety-and-soundness supervision of banks is the opacity of algorithms that draw inferences from many data sources. Algorithms generate opaque results when a recipient of an algorithm's output does not understand how or why an algorithm made a decision based on inputted data.[64] The opacity of algorithms stems from two sources. First, it can be upheld by law due to proprietary claims of RegTech vendors.[65] For example, when they invoke trade secret protections:

> Every algorithmic accountability proposal (accountability proposals for any technology, really) eventually meets the question of how to handle the trade secret problem. In short, many companies are protecting their algorithms by claiming that they are trade secrets and, therefore, cannot be disclosed. Despite often being of questionable legal merit, such claims are being treated credulously by courts and are given great weight in public debates about "black box" technologies.[66]

Trade secret protections are particularly appealing for RegTech businesses providing software as a remote service. In this case, banks have access only to an interface but not to the source code. Therefore, it is almost impossible for banks' IT and compliance departments to reverse-engineer a RegTech instrument, thereby lifting trade secret protections.[67]

Second, the opacity of algorithms materializes when a RegTech developer is unable to explain how an algorithm works or how it weighs various factors to arrive at a conclusion about the existence or absence of risks arising out of inputted data. This is especially true in relation to complex machine learning systems that alter their internal decision logic in the process of learning on training data.[68] While in recent years researchers have attempted to tackle the so-called "black box problem"[69] by developing explainable AI, it remains to be seen if these efforts will be fruitful.[70]

The opacity of compliance, risk management, and regulatory reporting instruments presents risks. If the disclosure of information about an algorithm's decision-making process is impossible for the reasons mentioned above, banks and the regulator will not be able to

---

64 Burrell, *supra* note 16 at 1.

65 *Ibid* at 3.

66 Andrew D Selbst, "Disparate Impact in Big Data Policing" (2017) 52:1 Ga L Rev 109 at 189 [footnotes omitted].

67 Eric Lavallée, "Intellectual Property and Artificial Intelligence" (5 October 2017), online (blog): <www.lavery.ca/en/publications/our-publications/3037-intellectual-property-and-artificial-intelligence.html>.

68 Kate Robertson, Cynthia Khoo & Yolanda Song, *To Surveil and Predict: A Human Rights Analysis of Algorithmic Policing in Canada* (Toronto: Citizen Lab and International Human Rights Program, September 2020) at 129–30, online: <citizenlab.ca/wp-content/uploads/2020/09/To-Surveil-and-Predict.pdf>.

69 Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Cambridge: Harvard University Press, 2015).

70 See e.g. Robertson, Khoo & Song, *supra* note 68 at 129, n 592; Amina Adadi & Mohammed Berrada, "Peeking Inside the Black-Box: A Survey on Explainable Artificial Intelligence (XAI)" (2018) 6 IEEE Access, online: <ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=8466590>; AJ Abdallat, "Explainable AI: Why We Need To Open The Black Box," *Forbes* (22 February 2019), online: <www.forbes.com/sites/forbestechcouncil/2019/02/22/explainable-ai-why-we-need-to-open-the-black-box/?sh=42356c0d1717>; Cassie Kozyrkov, "Explainable AI Won't Deliver. Here's Why" (16 November 2018), online (blog): <hackernoon.com/explainable-ai-wont-deliver-here-s-why-6738f54216be>.

identify errors in the instrument's risk assessment methodology.[71] The experience of the 2008 financial crisis confirms that the wrong assessment of risks associated with conducting business or market and capital risks results in the economic fallout for "consumers, investors, and other market players."[72] For example, American commentators observe that automated mortgage underwriting tools used by banks internalized flawed hypotheses about the future of the housing market.[73] Similarly, standard securitization models failed to correctly assess the risk of default on loans before using those loans as collaterals for additional debt.[74] The ensuing bankruptcies of households, firms, and financial institutions were one of the symptoms of unsupervised risk-taking by banks.[75]

Thus, the most important shortcoming of automated and standardized risk-assessment models, including RegTech, is that they achieve the intended regulatory goals to the extent that they follow regulatory mandates and can quickly identify and correct their own mistakes. Otherwise, such models pose significant risks. The use of autonomous, self-learning RegTech algorithms by systemically important banks only exacerbates the risk of regulatory failures, particularly if several banks rely on the same erroneous RegTech instruments.[76] To sum up, the combination of inherent risks of RegTech highlights the need for a regulatory response.

IV. THE EMERGENCE OF DELEGATED REGULATION OF SERVICE PROVIDERS

Although the reliance of the regulated banks on RegTech for reporting and compliance is a relatively recent development, the outsourcing of core functions by banks to third parties is not new. In 2001, OSFI released Guideline B-10 that seeks to reduce risks resulting from banks' dependence on third party service providers.[77] The Guideline introduced the notion of a "material outsourcing arrangement," which comprises, among other things, information system management and maintenance; investment management (portfolio management and cash management); marketing and research; professional services related to the business activities of regulated banks (accounting and internal audit).[78] The outsourcing of material

---

71 Basel Committee on Banking Supervision, "International Convergence of Capital Measurement and Capital Standards: A Revised Framework Comprehensive Version" (2006), online: *Bank for International Settlements* <www.bis.org/publ/bcbs128.pdf> (Basel standards expressly acknowledged this problem by stating that "[t]he substantial impact that errors in the methodology or assumptions of formal analyses can have on resulting capital requirements requires a detailed review by supervisors of each bank's internal analysis" at para 747). See also Basel Committee on Banking Supervision, "Framework for Internal Control Systems in Banking Organisations" (September 1998), online: *Bank for International Settlements* <www.bis.org/publ/bcbs40.pdf> ("[m]anagement decision-making could be adversely affected by unreliable or misleading information provided by systems that are poorly designed and controlled" at 18).

72 Bamberger, "Technologies of Compliance," *supra* note 14 at 677–78.

73 *Ibid* at 717.

74 *Ibid*.

75 Viral V Acharya et al, "The Financial Crisis of 2007–2009: Causes and Remedies" in Viral V Acharya & Matthew Richardson, eds, *Restoring Financial Stability: How to Repair a Failed System* (Hoboken: John Wiley & Sons, 2009) 1 at 24.

76 Veerle Colaert, "RegTech as a Response to Regulatory Expansion in the Financial Sector" (16 July 2018), online: *Oxford Business Law Blog* <www.law.ox.ac.uk/business-law-blog/blog/2018/07/regtech-response-regulatory-expansion-financial-sector> (describing how some financial institutions prefer to buy off-the-shelf RegTech software, instead of investing time and resources into the development of customized instruments).

77 OSFI, *Outsourcing of Business Activities*, *supra* note 22 at 1.

78 *Ibid* at 17.

arrangements imposes a host of additional public duties on the regulated banks. In their outsourcing contracts, banks must write OSFI-mandated clauses that reserve the banks' right to monitor, audit, and punish service providers.[79] Several examples of such clauses are provided below.

- NATURE AND SCOPE OF THE SERVICE BEING PROVIDED: A contract should "specify the scope of the relationship, which may include provisions that address the frequency, content and format of the service being provided" and "the physical location where the service provider will provide the service."[80]

- PERFORMANCE MEASURES: A contract should establish performance measures "that allow each party to determine whether the commitments contained in the contract are being fulfilled."[81]

- REPORTING REQUIREMENTS: A contract should "specify the type and frequency of information [that a regulated bank] receives from the service provider."[82] This includes reports that allow a bank to determine a provider's compliance with the performance measures and "events … that may have the potential to materially affect the delivery of the service."[83]

- DEFAULTS AND TERMINATION: A contract should "specify what constitutes a default, identify remedies, and allow for opportunities to cure defaults or terminate the agreement."[84] A regulated bank should "ensure that it can reasonably continue to process information and sustain operations in the event that the outsourcing arrangement is terminated or the service provider is unable to supply the service."[85]

- CONTINGENCY PLANNING: A contract "should outline the service provider's measures for ensuring the continuation of the outsourced business activity in the event of problems and events that may affect the service provider's operation."[86]

- AUDIT RIGHTS: A contract should "clearly stipulate the audit requirements and rights of both the service provider" and the regulated bank.[87] In addition, a contract should give OSFI the right to "exercise the contractual rights of the [bank] relating to audit."[88]

Therefore, when a federally regulated bank decides to delegate the provision of material services, an outsourcing contract becomes the main instrument for extending public requirements to private actors delivering these services. In this regard, the closest analogy may be to the government's pro forma procurement contracts that force government

---

79 *Ibid* at 12–17.
80 *Ibid* at 12.
81 *Ibid*.
82 *Ibid*.
83 *Ibid* at 13.
84 *Ibid*.
85 *Ibid*.
86 *Ibid*.
87 *Ibid* at 14.
88 *Ibid*.

contractors to adhere to a patchwork of laws, regulations, and government's internal procurement policies.[89] Similar to Guideline B-10, government procurement policies impose the requirement of specificity on contracts concluded by public purchasers.[90] Beyond the requirement of specificity, government policies constrain private discretion by imposing strict reporting obligations on private companies, comparable to those that are contained in Guideline B-10.[91]

In sum, although regulated banks are not part of the federal government, they must follow procurement policies that are substantially similar to those that apply to government departments and agencies. While limits on public purchasers' procurement powers are best explained by the requirement of propriety in public spending,[92] limits on the regulated banks' freedom to enter into contracts stem from the importance of these banks for the stability of the domestic financial system.[93] Therefore, by constraining the outsourcing efforts of these banks, OSFI seeks to protect the broader public interest.

The idea that regulators can encroach upon private companies' freedom of contract in pursuit of broader public goals is not new.[94] In Canada, outsourcing contracts of highly regulated companies operating in the pharmaceutical, gaming, health care, and telecommunications sectors are policed by government agencies.[95] In addition, under the *Personal Information Protection and Electronic Documents Act*,[96] the Office of the Privacy Commissioner polices private contracts by holding organizations "accountable for the protection of personal information transfers under each individual outsourcing arrangement."[97] Because the phenomenon of delegated regulation of service providers is

---

89 Ian Harden, *The Contracting State*, ed by Norman Lewis & Cosmo Graham (Buckingham, UK: Open University Press, 1992) (pointing out that, in many cases, a company entering into a contract with a government purchaser essentially signs a standard form that it must either accept wholesale or miss an opportunity to deliver a service at 4).

90 Canada, Treasury Board, *Contracting Policy*, (Ottawa: Treasury Board of Canada, Secretariat, 2019), online: <www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=14494&section=html> (providing that "[w]ork descriptions or specifications must be defined in terms of clear outputs or performance requirements," s 4.1.2).

91 *Ibid* (requiring that all providers of consulting and professional services to the government are assigned a procurement officer who examines "the work in progress to ensure conformity with contract requirements" and monitors "time, resource, cost and quality aspects of the work against … [an] agreed work plan," s 16.11.3).

92 ACL Davies, *The Public Law of Government Contracts* (Oxford, UK: Oxford University Press, 2008) at 124.

93 Anand & Green, *supra* note 25.

94 Van Loo, *supra* note 27 (in this case, the word "private" is used to connote the idea of a profit-seeking firm that relies on a "'nexus of contracts' among owners, managers, laborers, suppliers, and customers" to conduct business at 473).

95 Simon Hodgett & Wendy Gross, "Canada" in Suzie Levy & Rachel Williams, eds, *The International Comparative Legal Guide to: Outsourcing 2017*, 2nd ed (London, UK: Global Legal Group, 2017) 28 at 29.

96 SC 2000, c 5.

97 Office of the Privacy Commissioner of Canada, *Processing Personal Data Across Borders: Guidelines*, Catalogue No IP54-19/2009 (Ottawa: Office of the Privacy Commissioner of Canada, 2009) at 4.

more widespread in the United States than in Canada, many instructive examples on this subject arise from American settings.[98]

Government agencies rely on pro forma procurement contracts to delegate the regulation of private parties to large corporations for a number of reasons. First, under-resourced regulators may not be able to ensure effective oversight.[99] In the context of technology-driven outsourcing, big banks' growing compliance departments may be better equipped to oversee the private reporting industry than OSFI.[100] Relatedly, banks may have good knowledge of the industry that they are mandated to regulate. As Rory Van Loo points out, "[a] major concern about regulation is that bureaucrats have insufficient skills or information to keep up with the private sector."[101] Through the ordinary course of business, banks may have better access to information about their counterparties than OSFI.[102] The informational advantages reduce the potential cost of detecting wrongdoings. Unlike the regulator, banks maintain contact with their counterparties, meaning that they spend less time and money on collecting information from private service providers than the regulator.[103]

Also, government agencies may choose delegated regulation in the hope that economic incentives will deter outsourced service providers from potential wrongdoings. The main sanction for violations of publicly sanctioned rules by outsourced companies is the termination of a contract with a bank, which can be devastating for their business.[104] For our purposes, this consideration is important to keep in mind because big banks represent a lucrative market for the companies providing RegTech services.

The final benefit of delegated regulation is that Canada's banks are familiar with how it works. The aforementioned Guideline B-10 contains many technology-neutral procedural provisions on audits, reporting, and monitoring that will be relevant to RegTech outsourcing contracts. Consistent regulation of outsourcing through pro forma contract clauses promotes predictability and continuity of regulatory design and facilitates a safe shift towards more sophisticated methods of reporting and compliance.[105]

While delegated regulation has obvious benefits, critics may argue that the risks of error, volatility, and wrongdoing command greater regulatory scrutiny of third parties delivering

---

98 Van Loo, *supra* note 27 at 470–71 [footnotes omitted]:

> [i]n addition to the FTC, the Environmental Protection Agency (EPA)—along with the Department of Justice (DOJ)—requires BP Oil and other energy companies to audit offshore oil platform operators for environmental compliance. The Food and Drug Administration (FDA) expects Pfizer and other drug companies to ensure suppliers and third-party labs follow the agency's health and safety guidelines. The Consumer Financial Protection Bureau (CFPB) orders financial institutions, such as American Express, to monitor independent debt collectors and call centers for deceptive practices.

Kenneth A Bamberger, "Regulation as Delegation: Private Firms, Decisionmaking, and Accountability in the Administrative State" (2006) 56:2 Duke LJ 377.

99 Baxter, *supra* note 13 at 600.

100 *Ibid*.

101 Van Loo, *supra* note 27 at 511.

102 *Ibid* at 512.

103 *Ibid.*

104 *Ibid* at 471.

105 Canada, Office of the Superintendent of Financial Institutions, *Supervisory Framework*, (Ottawa: Office of the Superintendent of Financial Institutions, 2010) (pointing out the importance of consistency in regulatory supervision of financial institutions at 1).

RegTech services than do familiar forms of outsourcing. Part VII of this article identifies several objections to delegated regulation and responds to each of them in turn.

V. TOWARDS DELEGATED REGULATION OF REGTECH BY BANKS

In 2020, OSFI released a discussion paper in which it acknowledged that outsourcing of reporting and compliance poses new challenges for the stability of the domestic financial system,[106] and that additional regulatory efforts are required to address, among other things, the risks of RegTech identified in this article.[107] While the previous part argued that familiar delegated regulation can be effective at tackling these risks, the prospects for this instrument's success depend on its ability to account for new challenges presented by algorithms. In this regard, the federal government's strategy for implementing AI across different sectors and institutions may provide a helpful roadmap for recalibrating broad technology-neutral rules contained in OSFI's guidelines. Moreover, a consistent approach to AI across government departments and regulated industries based on federal standards is instrumental in reducing risks posed by the automation of decision-making processes in different areas, including financial services.

At the federal level, the Treasury Board plays a leading role in setting the baseline standards against which government departments and agencies can evaluate the safety of various AI-driven outsourcing projects. The *Directive on Automated Decision-Making* provides government departments with basic principles on purchasing technology that assists or replaces the judgment of a human decision-maker (ADM systems).[108] For example, government departments must test and audit proprietary software, monitor inputted data and outcomes of analysis for biases and unintentional outcomes, validate the quality of stored and collected data, and provide citizens wishing to challenge the decisions of an ADM system with a meaningful recourse.[109]

The *ADM Directive* also imposes more nuanced requirements on government departments and, by extension, on private service providers of ADM systems. They apply on a sliding scale, following the preliminary assessment of an ADM system's potential impact on rights of individuals and communities. Following the assessment, the ADM system is assigned one of the four impact levels:

Level I: little, reversible impact or no impact;

Level II: moderate, short term, and reversible impact;

---

106 OSFI, *Developing Financial Sector*, *supra* note 8.

107 *Ibid* (noting, that "[m]any third party arrangements fall outside the definition of an 'outsourcing arrangement' in Guideline B-10, including certain technology and data-related arrangements that are increasingly common today (e.g., data sharing and aggregation)" at 25).

108 Canada, Treasury Board, *Directive on Automated Decision-Making*, (Ottawa: Treasury Board of Canada, 2021), online: <www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32592> [*ADM Directive*].

109 *Ibid*, ss 6.2.5.2, 6.3.2–3.3, 6.4.1.

Level III: high, ongoing, and difficult to reverse impact; or

Level IV: very high, irreversible, and perpetual impact.[110]

While the federal government's policy on ADM systems does not apply to federally regulated banks, it contains many provisions that may be relevant to OSFI's emerging approach to supervising banks' RegTech outsourcing contracts. For example, if OSFI required banks to conduct a similar assessment for RegTech instruments, most of them would likely fall into the category of ADM systems having a high or very high impact on individuals and communities (Levels III and IV). According to the *ADM Directive*, such systems must undergo peer review prior to their implementation. Also, their decision-making process must be supervised by humans. Potential users of Level III and IV systems must have access to the documentation on the design and functionality of the systems' algorithms and must complete training courses on the systems' implementation.[111]

The *ADM Directive* also requires testing ADM systems "for unintended data biases and other factors that may unfairly impact the outcomes."[112] This requirement, among other things, seeks to question the normative acceptability of using seemingly logical or readily available sources of data (for example, postcodes, employment history, medical history) and analytical methods to make decisions about individual rights and entitlements.[113] In the context of financial reporting and compliance, a more careful assessment of data and methods of analysis may help safeguard RegTech instruments against the aforementioned translation distortions. For example, during the preliminary testing stage, RegTech developers can be required to demonstrate that risk-assessment algorithms account not only for quantifiable risks but also for risks embedded in natural language (such as banks' internal and external communications via e-mails, board minutes, and contract clauses).

In the delegated regulation of RegTech instruments, all of these requirements can be reflected in banks' outsourcing contracts as conditions for RegTech implementation or as RegTech's specifications and performance-based standards. Contract clauses on regular reporting, audit, and monitoring and sanctions can deter RegTech providers from breaching publicly mandated rules.

VI. IMPLICATIONS OF DELEGATED REGULATION FOR REGULATED BANKS

From the perspective of OSFI, using contracts to impose additional public duties on regulated banks outsourcing RegTech services seems like a good policy. Indeed, it allows the under-resourced regulator to use banks as additional regulatory resources and extends the application of public norms to RegTech companies that otherwise would have avoided public oversight. However, the question remains: what are the implications of additional regulatory burden for the banks themselves? As will be discussed in the following sections, banks'

---

110 *Ibid*, Appendix B.
111 *Ibid*, Appendix C.
112 *Ibid*, s 6.3.1.
113 Sandra Wachter & Brent Mittelstadt, "A Right to Reasonable Inferences: Re-Thinking Data Protection Law in the Age of Big Data and AI" [2019] 2 Colum Bus L Rev 494 at 587.

response to delegated regulation is mostly driven by the desire to minimize exposure for potential failures of third-party service providers. As a result, banks dominate the mainstreaming of RegTech. First, at the level of corporate governance, they implement a more structured approach to innovation management — they improve the system of internal control over the outsourced providers of RegTech, grow compliance departments, and diversify the expertise of boards of directors. Second, banks consider investing in the in-house development of RegTech instruments as a cheaper and less risky alternative to outsourcing.

A. RESTRUCTURING OF CORPORATE GOVERNANCE

When an outsourcing contract becomes the main vehicle for enforcing OSFI-mandated technology standards, this raises the question of who is accountable to OSFI for violations of these standards: a company delivering the service, the bank, or both? Under Canadian law, there is freedom of contract with respect to liability provisions.[114] In the absence of OSFI requirements, parties to outsourcing agreements can negotiate "[l]imitations of liability and exceptions to such limitations."[115] It is considered normal practice to limit a service provider's comprehensive liability and include special liability provisions for breach of confidentiality, security and privacy obligations, intellectual property infringement, fraud and wilful misconduct, and wilful cessation of services.[116]

While it is true the parties may allocate liability through contract clauses, from the standpoint of OSFI, banks still bear the ultimate responsibility for a service provider's non-compliance with regulatory requirements. For example, OSFI's Guideline B-10 "operates on the premise that [federally regulated entities] *retain ultimate accountability for all outsourced activities*."[117] A recent OSFI discussion paper on technology risks confirms that banks "are accountable for their business activities, functions and processes, including those provided by third parties and should have visibility into the operations of third party providers, and those of their subcontractors."[118]

By placing upon banks the ultimate responsibility for the failures of private service providers, OSFI drives changes in corporate governance. First, banks seek to improve the system of internal control over outsourced providers of technology by growing compliance departments and assigning them additional responsibilities. If traditional compliance experts were focused on policing corporations' internal conduct,[119] delegated regulation forces them to monitor compliance of external service providers with public rules. In this sense, the growing dependence of banks on third party RegTech services highlights the pressing need for skilled compliance specialists as a response.

---

114 Hodgett & Gross, *supra* note 95 at 33.
115 *Ibid*.
116 *Ibid*.
117 OSFI, *Outsourcing of Business Activities*, *supra* note 22 at 1 [emphasis in original].
118 OSFI, *Developing Financial Sector*, *supra* note 8 at 25.
119 Janet Austin & Sulette Lombard, "The Impact of Whistleblowing Awards Programs on Corporate Governance" (2019) 36 Windsor YB Access Just 63 (defining corporate compliance as "the procedure by which an organization polices its own conduct to ensure that it conforms to applicable rules and regulations" at 72).

Second, reliance on outsourced services drives changes in the composition of banks' senior management. In Canada, directors' duty of care is a core principle of corporate governance. As in the case of other corporations, directors of financial institutions are expected to "exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances."[120] OSFI's guidance imposes a number of additional requirements on directors that pertain to the outsourcing of material arrangements. Directors must, for example, "approve or reaffirm the policies that apply to outsourcing arrangements (e.g., risk philosophy, materiality criteria, risk management program and approval limits); and review a list of all the [bank's] material outsourcing arrangements … and other relevant reports, when appropriate."[121] To better understand and minimize risks presented by the outsourcing of RegTech services, the boards of directors of regulated banks should include specialists in technology-assisted reporting and compliance.

B. SHIFT FROM EXTERNAL TO INTERNAL SERVICE DELIVERY MODEL

In Canada, like in many other countries, banks delegate the delivery of services to third parties assuming that outsourcing results in efficiency (that is, obtaining high-quality services at the lowest possible cost), improves the quality of services, or provides quick access to state-of-the-art technology.[122] The proponents of the standard market model of service delivery highlight the key role of competition in ensuring the aforementioned benefits of outsourcing. Competition drives down prices, improves the quality of services, and encourages innovation.[123] Additional regulation of RegTech services may disrupt the benefits of competition and, eventually, advance the shift from the external to the in-house provision of RegTech services. One can imagine several reasons why this may happen.

First, additional regulation may significantly shrink the market for RegTech services available to Canada's big banks. There is a possibility that only bigger and established RegTech businesses will be willing and able to commit themselves to additional reporting requirements and liability to get an opportunity to deliver services to federally regulated banks.[124] The oligopolization or even the monopolization of the market for RegTech may reduce the quality of services and drive up the prices. As such, it may potentially be cheaper

---

120 *Bank Act*, SC 1991, c 46, s 158(1)(b).

121 OSFI, *Outsourcing of Business Activities*, *supra* note 22, s 5.1. See also Canada, Office of the Superintendent of Financial Institutions, *Corporate Governance* (Guideline), (Ottawa: Office of the Superintendent of Financial Institutions, September 2018), online: <www.osfi-bsif.gc.ca/Eng/Docs/CG_Guideline.pdf>.

122 Thomson Reuters, "FinTech, RegTech and the Role of Compliance 2021" (2020) at 4, online: <legal.thomsonreuters.com/content/dam/ewp-m/documents/legal/en/pdf/reports/fintech-regtech-and-the-role-of-compliance-in-2021.pdf>; OSFI, *Outsourcing of Business Activities*, *ibid* at 18; OSFI, *Developing Financial Sector*, *supra* note 8 at 25; Soloway & Chvotkin, *supra* note 10 at 192–94.

123 Janna J Hansen, "Limits of Competition: Accountability in Government Contracting" (2003) 112:8 Yale LJ 2465 at 2470.

124 Similarly, small and medium enterprises cannot participate in the bidding process for government contracts due to prohibitive costs, see e.g. Canada, House of Commons, *Modernizing Federal Procurement for Small and Medium Enterprises, Women-Owned and Indigenous Businesses: Report of the Standing Committee on Government Operations and Estimates*, 42-1 (June 2018) at 53–56 (Chair: Tom Lukiwski). See also Hansen, *ibid* ("[f]or some government functions, scholars claim that five or even three bids can constitute a bare minimum of competition, rationalizing that bidders are scared off by paperwork requirements or complicated services" at 2471).

for banks to develop quality RegTech instruments internally than to procure them in the conditions of limited competition.

Second, the internalization of RegTech will allow banks to avoid additional regulatory burden. Regulated banks, for example, will not have to develop risk management programs for RegTech outsourcing arrangements and conduct internal due diligence to determine the nature and scope of the business activity to be outsourced.[125] Unlike the traditional forms of outsourcing, implementation of such programs for complex RegTech systems may be associated with substantial costs.

Third, the delivery of RegTech services in-house can reduce the costs of compliance down the line. While banks may have to make sizable investments in the internal development of technology, in-house provision of RegTech services zeroes out the transaction costs of external service provision. Those banks that will choose to internalize the delivery of RegTech services have two alternatives: they can develop RegTech instruments from scratch or buy existing RegTech companies and integrate them into their corporate structure.

The 2018 amendments to the *Bank Act*,[126] that have not yet been fully implemented, may facilitate the eventual shift from outsourcing to the in-house development of RegTech instruments.[127] The amendments permit banks to engage in a number of additional activities that relate to the provisions of financial services. They include "designing, developing, manufacturing, selling and otherwise dealing with technology" and "collecting, manipulating and transmitting information."[128] These provisions, if fully implemented, will allow banks to market their in-house technology to financial and non-financial institutions and compete with FinTech and RegTech vendors.[129]

VII. ADDRESSING ANTICIPATED CRITICISM OF DELEGATED REGULATION

This article has argued that the delegated regulation of the RegTech industry by federally regulated banks is sufficient to address the risks presented by technology. As mentioned in Part IV, banks' access to resources and information and economic incentives create the necessary conditions for private enforcement of rules mandated by the regulator. Meanwhile, the critics of delegated regulation may worry that these conditions will not be sufficient to ensure compliance with the proposed regulatory design. They may argue, for example, that due to the potential risks presented by technology, direct regulatory supervision of banks and RegTech is necessary. This part envisions and addresses the main arguments that may be levelled by the critics of delegated regulation and then discusses opportunities for more direct involvement of OSFI in the regulation of technology-driven reporting and compliance.

---

125 OSFI, *Outsourcing of Business Activities*, *supra* note 22, s 7.

126 *Bank Act*, *supra* note 120.

127 Canada, Department of Finance, *Financial Technology Activities*, (Ottawa: Department of Finance 2020), online: <www.canada.ca/en/department-finance/corporate/laws-regulations/forward-regulatory-plan/ financial-technology-activities.html>.

128 Bill C-74, *An Act to implement certain provisions of the budget tabled in Parliament on February 27, 2018 and other measures*, 1st Sess, 42nd Parl, 2018, cl 316(1).

129 Ana Badour, Marc J MacMullin & Barry J Ryan, "Budget Bill 2018: Amendments to Financial Services Statutes," (3 April 2018), online (blog): <www.mccarthy.ca/en/insights/articles/budget-bill-2018-amendments-financial-services-statutes>.

First, skeptics and critics may reasonably argue that, just like the regulator, banks lack expertise in services delivered by RegTech companies. Indeed, a lack of in-house expertise is one of the reasons why banks choose to outsource RegTech services in the first place. Some reports indicate that "[m]embers described the difficulty of overseeing third-party vendors that create AI applications used in chatbots, credit underwriting, [and] fraud detection."[130] Although it is true that the oversight of RegTech presents challenges for banks, there is no evidence that the regulator is currently better equipped to perform this task. As was mentioned above, banks' resources, skills, and information lay the groundwork for effective oversight.

Second, skeptics may suggest that banks will not take their duties seriously and will play only a nominal role in public enforcement. Banks may, for example, exploit OSFI's guidelines to avoid meaningful supervision of RegTech service providers and, simultaneously, shield themselves from liability. In case of the oligopolization or monopolization of the market for RegTech services, the opportunities for the manipulation of regulatory requirements will increase. It will be easier for banks and RegTech companies to agree upon concerted actions in circumvention of rules imposed by OSFI. The regulator, of course, must be ready to implement additional mechanisms to deter and, when necessary, punish wrongdoings.[131]

At the same time, Anita Anand and Andrew Green offer ample evidence that OSFI's regulatory process has not been conducive to rent-seeking behaviour by banks.[132] This may be counterintuitive because on many important issues, including outsourcing, OSFI relies on principles-based and delegated regulation.[133] The effectiveness of OSFI's model of regulation is best explained by its ability to remain insulated from political influence and partisanship.[134] According to Anand and Green, "OSFI operates in a 'black box', keeping information about its policy formation and enforcement confidential. With its informational advantage, it is able to undermine the possibility that banks will collude or rent-seek."[135]

Another criticism that may be levelled against delegated regulation is that the regulator has access to a more diverse set of accountability measures than a bank. An outsourcing contract can provide for fines, specific performance, and other types of remedies in case of breach of contracts' terms by a service provider. As discussed above, ultimately, a bank can terminate a contract, thereby depriving a RegTech service provider of a substantial source of revenue. However, this punishment may be ineffective because it allows the service provider to continue doing business with other customers. The effectiveness of contract termination as a deterrence measure partially depends on the level of competition amongst the providers of RegTech services. Generally, the more competitive the market, the easier

---

130 Kate Berry, "CFPB Catches Flak from Banks, Credit Unions on Risks of AI" (6 December 2018), online: <www.americanbanker.com/payments/news/cfpb-catches-flak-from-banks-credit-unions-on-risks-of-ai>.

131 For further discussion of these mechanisms, see Dirk Broeders & Jermy Prenio, *Innovative Technology in Financial Spervision (suptech) – The Experience of Early Users*, (Basel: Bank for International Settlements, 2018), online: <www.bis.org/fsi/publ/insights9.pdf>.

132 Anand & Green, *supra* note 25 at 427.

133 *Ibid.*

134 *Ibid.*

135 *Ibid.*

it is to replace a service provider.[136] At the same time, competition is not the only factor that influences a bank's decision whether to terminate a contract or not. If a RegTech service provider becomes an integral part of a bank's infrastructure, the process of replacing it with a competitor is accompanied by security risks and costs.[137] Thus, it is plausible that banks will be willing to replace RegTech service providers only when there is evidence of an egregious breach or blatant exploitation.[138] Finally, competition for a bank's business may disappear as soon as the winning bidder customizes off-the-shelf RegTech technology.[139]

Another argument against delegated regulation is that RegTech companies will be deliberately avoiding sharing some information with the banks. The risk of withholding crucial information about RegTech algorithms' codes may be particularly high if RegTech firms see banks as their potential competitors. When getting access to sensitive information or trade secrets necessary to ensure compliance, direct public regulation may prove more effective than delegated regulation because RegTech companies will be more willing to disclose information to regulators than to potential market competitors.[140] In order to address this flaw of delegated regulation, outsourcing contracts between banks and RegTech companies can provide considerable fines and other remedies for the breach of non-compete clauses.

On balance, it is true that poorly designed and executed delegated regulation can be conducive to unaccountability and wrongdoings. Its success depends on a number of factors that include competition amongst RegTech companies, access to information about algorithms, the efficiency of outsourcing, and banks' willingness and ability to execute regulatory mandates. In theory, however, delegated regulation of RegTech seems like an effective regulatory response to start addressing the risks discussed in this article. Of course, the regulator should be ready to assume more control over the RegTech industry if it sees the signs of abuse of regulatory standards. As such, delegated regulation does not exclude the need to develop bureaucratic expertise and invest in additional regulatory resources.[141]

Due to the limits of contract-based accountability and deterrence measures discussed above, OSFI could diversify its accountability toolbox. One option would be to create a list of non-compliant RegTech companies and ban wrongdoers from participating in future dealings with the government and with federally regulated entities.[142] Potentially, regulators could also create a licencing process for RegTech companies that deliver services to federally

---

136 John D Donahue, *The Privatization Decision: Public Ends, Private Means*, (New York: Basic Books, 1989) at 79–80.

137 John D Donahue, "The Transformation of Government Work: Causes, Consequences, and Distortions" in Freeman & Minow, *supra* note 10, 41 at 58.

138 *Ibid*.

139 Steven J Kelman, "Achieving Contracting Goals and Recognizing Public Law Concerns: A Contracting Management Perspective" in Freeman & Minow, *supra* note 10, 153 at 156.

140 Van Loo, *supra* note 27 at 513.

141 Broeders & Prenio, *supra* note 131.

142 See Government of Canada, *Federal Contractors Program (FCP) Compliance Assessment Policy*, online: <www.canada.ca/en/employment-social-development/corporate/portfolio/labour/programs/employment-equity/federal-contractors/compliance-assessment.html>. Failure to comply with the requirements of the FCP by an organization can result in the organization being prevented from bidding on future federal government goods and services contracts and the termination of any existing or ongoing contracts with the Government of Canada.

regulated industries and impose fines on those companies that breach the conditions of their licence. Both options could potentially deter wrongdoing.

Additional opportunities for more direct involvement of OSFI in the regulation of technology-driven reporting and compliance may materialize down the line. First, OSFI could introduce the so-called "regulatory sandboxes" for RegTech instruments that will be developed by the banks under the amended *Banks Act*:

> The principles of regulatory sandboxes can originally be found within the technology sector where a sandbox represents a virtual environment to test in isolation a new process or software. However, in the financial markets context, a better parallel may be with clinical trials, as the sector is similarly regulated to prevent consumer harm while testing new innovation.[143]

Regulators in Canadian provinces, the United Kingdom, Australia, and Singapore have been using regulatory sandboxes to determine legal compliance of a number of projects — blockchain-based money transfers,[144] rules-based methodology for regulatory compliance,[145] applications for trading in digital capital market products,[146] and Shariah-compliant equity investments.[147]

Second, OSFI will be able to directly participate in technology-driven reporting and compliance as it embraces supervisory technology, or SupTech, in its work.[148] Just like RegTech, SupTech refers to different types of technological innovation, such as artificial intelligence, machine learning, and natural language processing, that facilitate data collection and data analytics by regulators.[149]

Some foreign regulators, for example, are considering opportunities for translating legal rules into codes and issuing regulations in both human-readable and machine-consumable forms.[150] This will not only minimize the risk of translation distortions but also promote the efficiency of the reporting process. Regulators will be able to feed machine-consumable regulations directly into the banks' compliance systems, thereby eliminating the need for the interpretation of regulatory requirements.[151]

---

143 Arner, Barberis & Buckley, *supra* note 2 at 409.

144 Financial Conduct Authority, "Regulatory Sandbox: Cohort 6" (20 September 2020), online: <www.fca.org.uk/firms/regulatory-sandbox/regulatory-sandbox-cohort-6>.

145 *Ibid*.

146 Monetary Authority of Singapore, "Sandbox" (2021), online: <www.mas.gov.sg/development/fintech/sandbox>; Canadian Securities Administrators, "CSA Regulatory Sandbox," online: <www.securities-administrators.ca/resources/regulatory-sandbox/>.

147 Australian Securities & Investments Commission, "Enhanced Regulatory Sandbox," (2021), online: <asic.gov.au/for-business/innovation-hub/enhanced-regulatory-sandbox/enhanced-regulatory-sandbox-exemption-users/>.

148 Baxter, *supra* note 13; Broeders & Prenio, *supra* note 131.

149 Broeders & Prenio, *ibid* at 4–5.

150 New Zealand, Department of Internal Affairs, *supra* note 54; OECD, James Mohun & Alex Roberts, *Cracking the Code: Rulemaking for Humans and Machines*, Organisation for Economic Co-operation and Development Working Paper No 42 (2020); Waddington, *supra* note 56.

151 Toronto Centre, "FinTech, RegTech and SupTech: What They Mean for Financial Supervision" (August 2017) at 13, online: <res.torontocentre.org/guidedocs/FinTech%20RegTech%20and%20SupTech%20-%20What%20They%20Mean%20for%20Financial%20Supervision%20FINAL.pdf>.

Although machine-consumable regulations could address the problem of translation distortions, the prospects for their implementation are contingent upon the regulator's resources and appetite for the reconceptualization of financial regulation. The process of translating rules into granular codes consumes substantial human resources and increases the cost of regulation.[152] The regulator will also have to incur additional costs and reputational damages if machine-consumable regulations lead to mistakes or broader policy failures.[153] Finally, not all regulatory requirements will benefit from greater precision. Some level of flexibility is meant to account for institutional contexts.[154] As such, OSFI will have to conduct a careful overhaul of its regulatory framework to balance the stringency of machine-consumable regulations with more flexible approaches to regulation that embrace contingencies.

VIII. CONCLUSION

This article has examined the role of federally regulated banks as emerging delegated regulators of RegTech. It has argued that OSFI can rely on a familiar instrument of delegated regulation — a pro forma outsourcing contract — to extend public requirements to RegTech companies that are currently beyond the government's reach. In advocating for the delegated regulation of RegTech, this article sought to allay the concerns of those who think that the proposed design cannot adequately address challenges posed by algorithms and outsourcing.

The proposals described in this article are only a first step towards financial regulation that accounts for challenges and opportunities presented by RegTech. Even if we can agree that delegated regulation is the best solution to minimizing the risks of RegTech, the details of regulatory design remain a significant issue. Delegated regulation imposes additional public duties on banks and, by extension, on RegTech companies, thereby cutting against their private nature. The regulator's encroachments on firms' contracts, market strategy, and corporate governance will likely be met with resistance. Consultations with regulated banks and RegTech representatives may inform OSFI of various considerations that could increase delegated regulation's chances for success. However, the complexity of the task and potential institutional resistance to change should not deter OSFI action. It is both necessary and feasible to subject the authority of private RegTech companies over the domestic financial system to public oversight and baseline standards.

---

152 Eva Micheler & Anna Whaley, "Regulatory Technology: Replacing Law with Computer Code," (2020) 21:2 Eur Bus Organization L Rev 349 at 367.

153 *Ibid*.

154 Christie Ford, "Financial Innovation and Flexible Regulation: Destabilizing the Regulatory State (2013) 18:1 NC Banking Inst 27 at 30.

[*this page is intentionally blank*]