

The Bank of Canada's Financial System Survey

*Guillaume Bédard-Pagé, Ian Christensen, Scott Kinnear and
Maxime Leboeuf*

- The new semi-annual Financial System Survey (FSS) collects expert opinions on the risks to and resilience of the Canadian financial system as well as emerging trends in financial products and practices.
- The survey improves the breadth of the Bank's surveillance across the financial system, collects information on topics where the Bank has limited data or expertise, and creates a venue for two-way dialogue with financial system participants and industry experts.
- The FSS will be a useful benchmark to compare Bank views and analytical work with outside opinions and will help Bank staff identify new topics for research and analysis. Selected highlights from the survey will be presented in the Bank of Canada's *Financial System Review* and on the Bank's website.
- In the spring 2018 FSS, cyber attacks, rising geopolitical tensions and a drop in real estate prices were most frequently cited by respondents as risks that could have a significant negative impact on the Canadian financial system. The majority of respondents view the probability of a high-impact financial system event in the next year to be low, but they also see that probability increasing over the medium term. More than 90 per cent of respondents expressed confidence in the resilience of the Canadian financial system if a large shock were to materialize.

Introduction

The Bank of Canada is responsible for promoting the efficiency and stability of the financial system. The Bank fulfills this commitment through its liquidity facilities and lender-of-last-resort responsibilities, oversight of key payment clearing and settlement systems, and in-depth research and analysis on potential financial system vulnerabilities and risks. The Bank's research and analytical activities are informed by regular surveillance of developments that affect the health and functioning of the Canadian financial system.

Market intelligence—the insight gained from firms operating in the real economy and in the financial system—is a core element of this surveillance. The Bank's regular intelligence activities complement analytical work with market insight that is particularly useful during times of transition or when data are not available. Market intelligence enables staff to refine their

judgment on key financial system developments and gives new insight into how markets are functioning and evolving. All of this helps shape policies and is integral to the Bank's core functions.

To enhance its market intelligence activities on financial system topics, the Bank has developed the Financial System Survey (FSS) to collect expert opinions on the risks to the Canadian financial system, the resilience of the system and emerging trends in financial products and practices. The first FSS was conducted in spring 2018, following a pilot in autumn 2017. This report describes the survey objectives and design and provides insight from the spring 2018 survey.

Why conduct a Bank of Canada financial system survey?

Over the years, the Bank of Canada has developed several surveys and built considerable expertise in this domain. Notably, since 1998, the quarterly *Business Outlook Survey* has been gathering firms' perspectives on overall demand, capacity pressures and the economic outlook. Focusing on financial intermediaries, the quarterly *Senior Loan Officer Survey* has collected information since 1999 on business-lending practices. And in its role as chair of the Canadian Fixed-Income Forum, the Bank helped conduct a survey in 2016 on market liquidity, transparency and market access.¹ These surveys have provided the Bank, as well as the broader public, with important and timely insight to better understand economic and financial developments.²

The FSS fills a gap in Bank of Canada surveys by focusing on the Canadian financial system and its participants. Traditionally, information has been collected from these sources during market intelligence visits. These visits provide useful information but generally occur on an ad hoc basis throughout the year. Inevitably, the issues discussed differ from one interaction to another, and the views of certain types of market participants may be collected less frequently than others. This makes it difficult to aggregate the information systematically.

The FSS will help the Bank fulfill three key objectives:

- **It contributes to the Bank's financial system surveillance efforts to systematically cover a large and diverse range of financial system participants.** Using a recurring survey and including the same respondents each time will allow the Bank to aggregate and track views on risks and important financial system developments over time.
- **The survey is an effective method to collate expert opinions on topics where the Bank has limited data or expertise.** Because data may not exist or may arrive with a time lag, the survey will help the Bank identify new and emerging financial system developments.
- **It allows the Bank to strengthen its network and creates a venue for regular dialogue with financial system participants and industry experts on financial system topics.** To this end, the Bank will regularly communicate aggregate results to the public, notably in the *Financial System Review* and on the Bank's website, which will allow respondents to compare their own views with those of their peers.

¹ For more information, see the [market notice](#).

² See Patterson (2017) for a more extensive discussion of the use of surveys and importance of market intelligence at the Bank of Canada.

The Bank will use this survey to improve its ability to identify new risks and vulnerabilities and assess the effects of innovation and changes in regulation on the financial system. In addition, new information collected from market participants can confirm the Bank's current views on several financial system topics and may indicate a need to rethink others—helping to define work priorities and inspire new ideas for research.

Overview of existing financial system surveys

Before the 2007–09 global financial crisis, surveys focused primarily on market positioning, risk perceptions and investor expectations and were generally conducted by the private sector. These surveys provided information to help investors gauge overall market sentiment and position their investment strategies to enhance future returns. Investor-expectations surveys have been used for some time and have proven to be an important source of market intelligence; they offer meaningful insight into widely shared market beliefs. Notably, Greenwood and Shleifer (2014) and Goetzmann, Kim and Shiller (2016) show empirical evidence that changes in measured beliefs influence portfolio allocation decisions and investor flows into and out of mutual funds.³

Following the crisis, organizations such as the Depository Trust and Clearing Corporation, the Bank of England and Sveriges Riksbank introduced surveys focusing on systemic risk and financial system functioning (Table 1). These surveys target a wide range of financial system participants and, perhaps more importantly, focus on topics that are generally not covered by

Table 1: Overview of existing surveys related to the financial system

	Start year	Country	Types of participants	No. of respondents	Focus	Frequency
Investor Behavior Project at Yale University	1989	United States	Institutional investors	Slightly more than 100	Investor expectations of stock market returns and confidence	Monthly
Riksbank Risk Survey ^a	2008	Sweden	Fixed-income and foreign exchange market participants	57 ^b	Risks to functioning of the financial system and of Swedish fixed-income and foreign exchange markets	Biannual
Bank of England Systemic Risk Survey	2008	United Kingdom	Asset managers, pension funds, insurers and primary dealers	96 ^b	Risks to the functioning of the financial system and confidence	Biannual
Reserve Bank of India Systemic Risk Survey	2011	India	Experts, market participants and other stakeholders	N/A	Major risks facing the financial system: global, macro, market, institutional and general	Biannual
Depository Trust and Clearing Corporation (DTCC) Systemic Risk Barometer Survey	2013	United States	DTCC clients (brokers/dealers, banks, service bureaus, hedge funds, mutual funds and insurance companies)	200+	Sentiment on key and emerging trends that affect the safety and resiliency of the global financial system	Biannual
Global Risk Institute (GRI) Risk Outlook Survey	2016	Canada	GRI members	N/A	Key risks to the stability of the financial system and the strength of major global economies	Annual
Bank of Canada Financial System Survey	2018	Canada	Financial industry, public sector entities, think tanks and debt issuers	Slightly more than 100 targeted institutions	Key risks to the financial system and respondent firms, overall confidence, financial innovations and other key developments	Biannual

a. The Riksbank is reviewing its survey and has not published it since the spring of 2017.

b. In last survey

³ Confidence and other expectations surveys also indicated future portfolio allocation, investment and consumption decisions. See Pichette and Robitaille (2017), Amromin and Sharpe (2013) and Gennaioli, Ma and Shleifer (2016). However, investor “crash” beliefs are influenced asymmetrically by positive and negative articles in the financial press, which makes the interpretation of the results more challenging.

other types of surveys, such as low-probability but high-impact risk events, financial system resilience and the functioning of systemically important markets. Over the years, both the Bank of England and the Riksbank have regularly reported and discussed their survey results in their financial stability reports to complement staff analysis. As shown in the next section, the FSS shares many features with the Bank of England and Riksbank surveys.

Key features of the Bank of Canada Financial System Survey

The FSS is targeted at individuals working in the financial services industry in a senior risk-management capacity (chief risk officer or equivalent level of seniority) and non-practitioner experts in finance and economics. To capture the diversity of opinions about risks to the Canadian financial system, the FSS covers a wide range of activities, business models and expertise across the country. The sample includes financial institutions such as banks, credit unions, non-depository credit intermediaries, pension funds, insurers and domestic asset managers of various sizes. However, it also surveys other institutions and financial system experts such as financial market infrastructures, think tanks, consultants, debt issuers and academics. The sample also includes some foreign firms with significant Canadian operations.

The FSS is conducted online twice a year (spring and fall). It includes a mix of multiple-choice and open-ended questions. To gather additional insight and enhance the Bank's understanding of the results, the survey is followed up with in-person visits to a subset of respondents.

The survey features four main sections (see **Box 1** for examples of survey questions):

Identification of important and emerging risks

The first section provides an inventory of key risks to the financial system highlighted by survey respondents. The Bank can identify new and emerging risks and rank them based on perceptions of their relative importance to the overall financial system. In addition, the survey identifies key risks at the firm level, including those that firms are taking action to mitigate.⁴ The ability to compare risks that firms believe they can mitigate with those perceived as most important to the financial system enriches the Bank's analysis of vulnerabilities and the policies that could be enacted to mitigate them.

Overall risk to and resilience of the financial system

The second section collects respondents' views on the probability that a systemic event will occur over short and medium horizons. The source or type of event is not specified; this is a measure of the probability that any risk will materialize. Respondents also state their level of confidence in the ability of the system to withstand severe shocks. This confidence will depend on, among other things, market participant perceptions of the adequacy of financial system capital buffers, how stress flows across the system, and the expected actions taken by public authorities during a potentially systemic event. While views on the level of confidence or probability of a stress event at a given point in time are interesting, the real value of this information lies in how these perceptions change over time.

⁴ To keep the language of the survey as simple as possible, the distinction between vulnerabilities and risks from the Bank of Canada's analytical framework is not explicitly used. The survey emphasizes risks but nevertheless elicits information useful in assessing vulnerabilities.

Box 1

Overview of questions in the Financial System Survey

The first three sections of the Financial System Survey (FSS) feature 10 recurring questions on 4 main topics. The questions in these sections are expected to remain fairly consistent in every survey to follow the 4 topics as they evolve and to identify changes in views. The survey also includes an additional section for ad hoc questions on a broad range of current topics; these questions will change over time to explore issues of near-term interest or concern.

Identification of important and emerging risks

- Over the next three years, which risks, if realized, do you believe would have the greatest negative impact on the functioning of the Canadian financial system (i.e., can impair the financial system and harm the economy)? Please identify the top three risks, in order of importance.
- Over the same period, which financial system risks, if realized, do you believe would have the greatest negative impact on your organization's activities? Please identify the top three risks, in order of importance.
- Which of these risks is your organization currently allocating the most resources to in order to mitigate/manage its potential impact?

Overall risk to and resilience of the financial system

- In your view, what is the probability that an event would occur with the potential to severely impair the functioning of the Canadian financial system in the

short-term (0–12 months) and medium-term (1–3 years) periods ahead?

- How do these probabilities today compare with those from six months ago?
- How confident are you that the Canadian financial system will be resilient in the event of a large shock that has the potential to severely impair the functioning of the Canadian financial system?
- How does your level of confidence in the stability of the Canadian financial system today compare with that of six months ago?

Financial system developments and innovation

- Please identify any new or emerging developments in the Canadian financial system, positive or negative, that your organization is tracking or has observed. These new developments can be global or limited to the Canadian market.
- Over the next three years, which financial innovations do you believe will have the largest impact, positive or negative, on your organization's activities? Please identify the top three innovations, in order of importance, and identify whether they are positive or negative for your organization.
- Of the top three innovations you have listed, indicate the one that your organization is planning to allocate the most resources to over the next three years.

Financial system developments and innovation

A third section seeks to identify new trends in the financial system, including those that are likely to influence incentives, overall market structure and efficiency. Given that data about financial innovations are often scarce, the quantitative results in this section are likely to provide information on new financial products, changing market practices and the impact of technological change on markets.

Current topics

The final section includes flexible ad hoc questions that change for each survey. This section can include general questions for all survey respondents or topical questions targeted to a subset of participants. These questions are often related to specific market developments or topics where more detailed information is desired.

Overview of key insights from the spring 2018 survey

The survey was conducted between March 26 and April 9, 2018. It was sent to 109 participants and had a response rate of 61 per cent. Since this is the first full survey, it is not yet possible to assess the evolution of the responses, which will be an important element of analysis in the future. Instead, the responses provide a useful baseline for assessing current concerns.

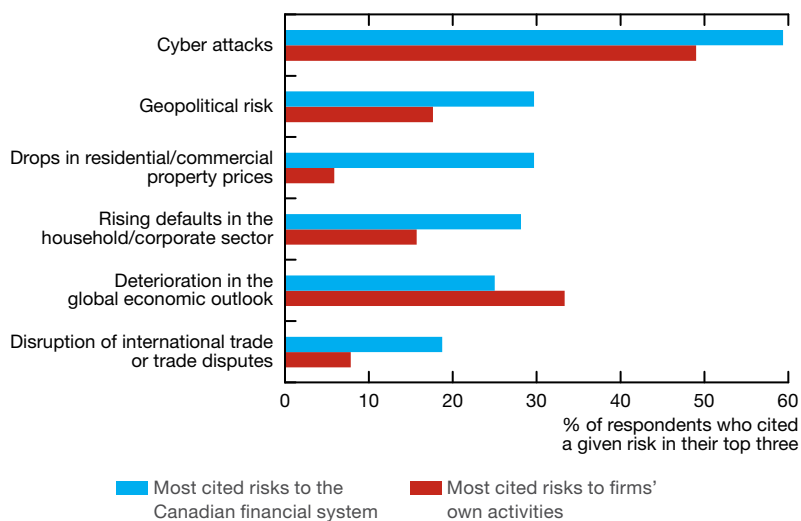
Key financial system risks

Respondents were asked to list the top three risks to the financial system and to their firm's activities (if applicable), based on the size of the potential negative impact on the functioning of the financial system or on their firm's activities should these risks materialize. **Chart 1** shows the risks cited by at least 10 per cent of respondents. Cyber attacks, geopolitical risks and drops in real estate prices were most frequently cited by respondents as among the top three risks to the Canadian financial system. These risks closely match the key vulnerabilities and key risks identified and discussed in recent issues of the Bank's *Financial System Review*. Among risks to their own firms, respondents indicated that cyber attacks and a deterioration in the global economic outlook would have the largest negative impacts. Other risks mentioned by less than 10 per cent of respondents (and therefore not included in **Chart 1**) include those related to the impact of unconventional monetary policies, operational risks and dislocations in securities markets.

Chart 1: Cyber attacks were cited as the most important risk to the functioning of the Canadian financial system

Over the next three years, which risks, if realized, do you believe would have the greatest negative impact on the functioning of the Canadian financial system? Please identify the top three risks, in order of importance.

Over the same period, which financial risks, if realized, do you believe would have the greatest negative impact on your organization's activities? Please identify the top three risks, in order of importance.



Notes: Risks have been regrouped into categories. Risks to the Canadian financial system cited by more than 10 per cent of respondents have been included. "Geopolitical risk" refers to political tensions (e.g., with Russia and North Korea). "Disruption of international trade or trade disputes" includes issues with the North American Free Trade Agreement and trade with China.

Source: Bank of Canada Financial System Survey, spring 2018

Aggregated risks and confidence

In the short term (0 to 12 months), 72 per cent of survey respondents view the probability of an event that severely impairs the functioning of the financial system as low or very low (Chart 2a). There was less agreement in views on the probability over the medium term (1 to 3 years), with around 62 per cent of respondents indicating that the probability was moderate, high or very high.

Respondents reported that their views on the short-term probability of a high-impact event were unchanged or had increased slightly over the past six months (Chart 2b). More respondents indicated a slightly increased probability over the next one to three years. Increased geopolitical uncertainty and the impact of reduced monetary stimulus from central banks on the domestic housing market and global asset prices were cited as reasons for the increase.

More than 90 per cent of respondents are very confident or fairly confident in the resilience of the Canadian financial system if a large shock were to materialize (Chart 3a). Around 10 per cent are not very confident. Among survey participants, confidence in the resilience of the financial system is roughly unchanged relative to six months ago (Chart 3b), but respondents expressed concern about increased leverage in the financial system, uncertainty about the future path of house prices, and rising interest rates as factors that could affect their level of confidence in the future.

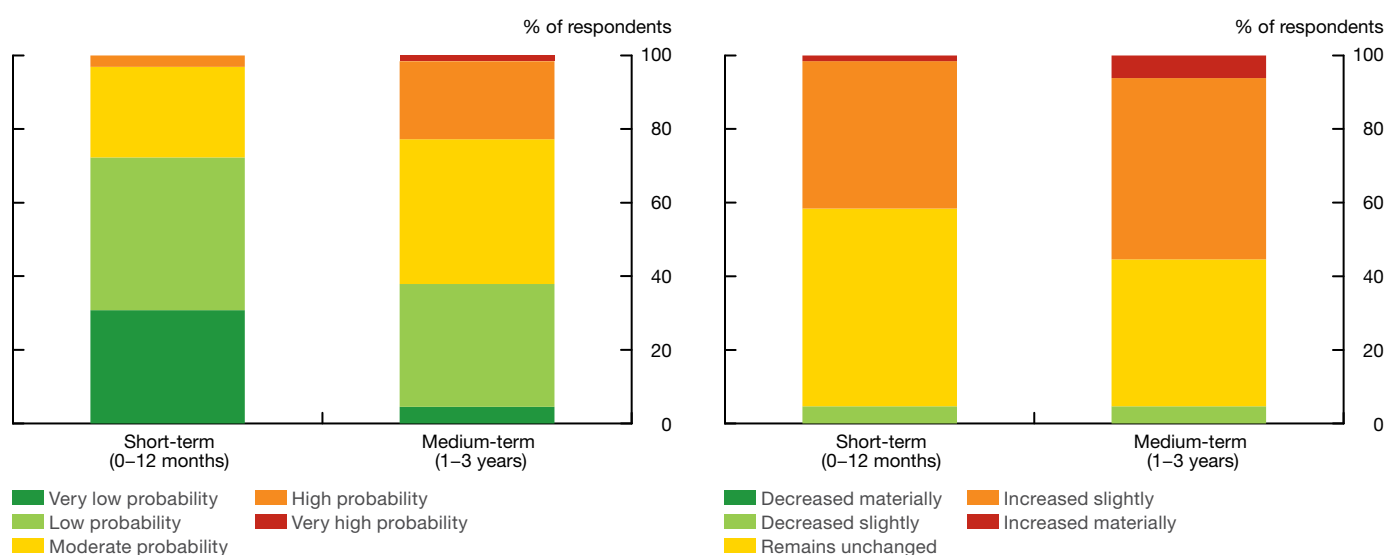
Chart 2: Many respondents believe the probability of a high-impact event that severely impairs the functioning of the financial system has increased over the last six months

In your view, what is the probability that an event would occur with the potential to severely impair the functioning of the Canadian financial system in the short-term (0–12 months) and medium-term (1–3 years) periods ahead?

How do these probabilities today compare with those from six months ago?

a. Probability of an event that severely impairs the financial system

b. Change in the probability from six months ago



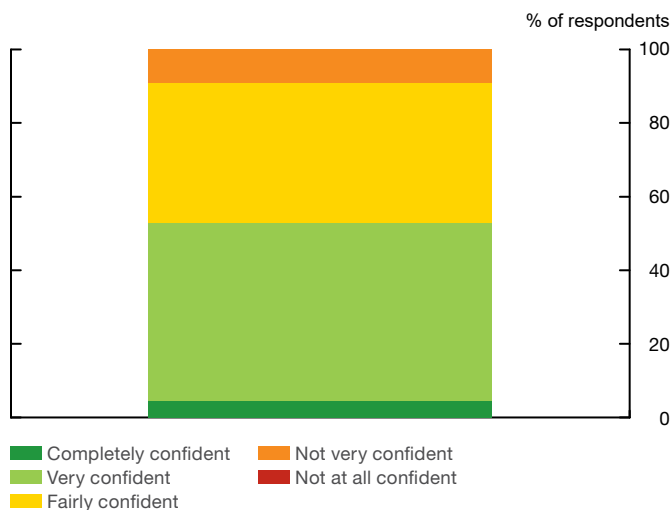
Source: Bank of Canada Financial System Survey, spring 2018

Chart 3: Confidence in the resilience of the financial system if a large shock were to materialize has remained unchanged in the last six months

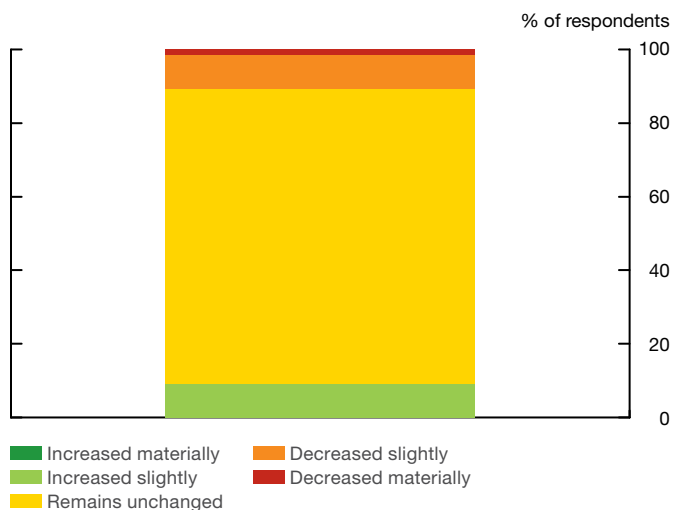
How confident are you that the Canadian financial system will be resilient in the event of a large shock that has the potential to severely impair the functioning of the Canadian financial system?

How does your level of confidence in the stability of the Canadian financial system today compare with that of six months ago?

a. Level of confidence in financial system resilience



b. Change in confidence from six months ago



Source: Bank of Canada Financial System Survey, spring 2018

Emerging developments

Respondents identified several emerging financial system developments that their firms have observed or are tracking. They are summarized in Table 2.

Key financial innovations

Participants identified machine learning and artificial intelligence, big data and blockchain as the financial innovations that will have the largest impact on their firms' activities over the next three years (Chart 4). Respondents plan to dedicate most of their resources toward machine learning and big data over the next three years, which they perceive as positive for their firms' activities. Other innovations that were mentioned include robo-advisors, digital currencies, systematic trading strategies, securitization and digitalization.

Table 2: New or emerging financial system developments

Please identify any new or emerging developments in the Canadian financial system, positive or negative, that your organization is tracking or has observed. These new developments can be global or limited to the Canadian market.

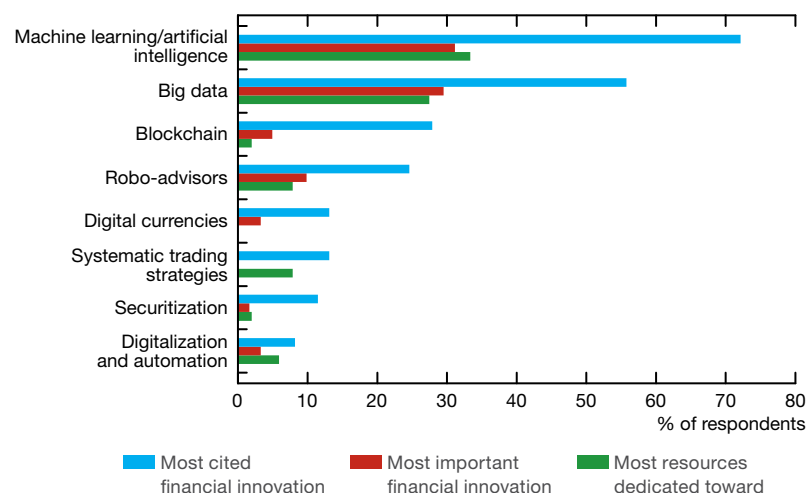
Financial technology (fintech)	▪ Emergence of fintech-based solutions could disrupt incumbent business models in the financial sector
Regulatory environment	▪ Replacement of international and domestic reference interest rate benchmarks ▪ Changes in payment systems and anti-money-laundering and anti-terrorist-financing rules could have an important impact on foreign investment in Canada
Household credit markets	▪ Rise of private lenders and credit unions in the face of the new B-20 mortgage underwriting guideline issued by the Office of the Superintendent of Financial Institutions ▪ Increased lender focus on non-mortgage consumer lending programs such as auto loans and consumer goods financing ▪ Restrictions on mortgage portfolio insurance are reducing consumers' financial flexibility, pushing them increasingly toward home equity lines of credit, second mortgages, credit cards and other costlier forms of consumer debt
Investment strategies	▪ Increased focus on private equity and real estate as more funds look at increasing allocation to alternatives to generate higher returns ▪ Rise of quantitative and systematic strategies, potentially increasing co-movements across asset classes that had not historically been linked ▪ Broader use of more sophisticated counterparty collateralization framework between banks and non-financial institutions

Source: Bank of Canada Financial System Survey, spring 2018

Chart 4: Financial innovations expected to have the largest impact on firm activities

Over the next three years, which financial innovations do you believe will have the largest impact, positive or negative, on your organization's activities? Please identify the top three innovations, in order of importance.

Of the top three innovations you have listed, indicate the one that your organization is planning to allocate the most resources to over the next three years.



Source: Bank of Canada Financial System Survey, spring 2018

Conclusion

The FSS greatly enhances the Bank's surveillance of developments in the Canadian financial system. It enables the Bank to systematically collect market intelligence from a broad range of financial system experts and helps to build ongoing dialogue. The FSS also allows the Bank to identify and track new financial system risks and vulnerabilities, measure perceptions of the resilience of the financial system, and assess the impacts of innovation and changes in regulation. New information collected from market participants may challenge the Bank's current views—helping to define policy priorities and inspire new ideas for research.

The Bank is confident that the analysis of the information obtained through this new initiative will also be useful for market participants and the general public. The spring 2018 survey benefited greatly from active collaboration with the majority of Canada's largest financial institutions. Over time, as more financial market participants become aware of the survey and its objectives, the diversity of respondents should increase, with greater representation from smaller financial firms.

References

- Amromin, G. and S. A. Sharpe. 2013. "Expectations of Risk and Return Among Household Investors: Are Their Sharpe Ratios Countercyclical?" Federal Reserve Board Working Paper No. 2008-17.
- Gennaioli, N., Y. Ma and A. Shleifer. 2016. "Expectations and Investment." *NBER Macroeconomics Annual 2015* (30): 379–431.
- Goetzmann, W. N., D. Kim and R. J. Shiller. 2016. "Crash Beliefs from Investor Surveys." National Bureau of Economic Research Working Paper No. 22143.
- Greenwood, R. and A. Shleifer. 2014. "Expectations of Returns and Expected Returns." *Review of Financial Studies* 27 (3): 714–746.
- Patterson, L. 2017. "Markets Calling: Intelligence Gathering at the Bank of Canada." Speech at the CFA Society Calgary, Calgary, Alberta, June 28.
- Pichette, L. and M.-N. Robitaille. 2017. "Assessing the *Business Outlook Survey* Indicator Using Real-Time Data." Bank of Canada Staff Discussion Paper No. 2017-5.