

Johal, Jesse; Roberts, Joanna; Sim, John

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Staff Discussion Paper/Document d'analyse du personnel 2019-5

Canadian Securities Lending Market Ecology



by Jesse Johal, Joanna Roberts and John Sim

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Bank of Canada Staff Discussion Paper 2019-5

July 2019

Canadian Securities Lending Market Ecology

by

Jesse Johal, Joanna Roberts and John Sim

Financial Markets Department
Bank of Canada
Ottawa, Ontario, Canada K1A 0G9
jjohal@bankofcanada.ca

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This paper is the fourth in a series by the Financial Markets Department about Canadian financial markets. The other papers in the series are:

1. [Canadian Repo Market Ecology](#) by Corey Garriott and Kyle Gray, Bank of Canada Staff Discussion Paper No. 2016-8
2. [A Primer on the Canadian Bankers' Acceptance Market](#) by Kaetlynd McRae and Danny Auger, Bank of Canada Staff Discussion Paper No. 2018-6
3. [Government of Canada Fixed-Income Market Ecology](#) by Léanne Berger-Soucy, Corey Garriott, and André Usche, Bank of Canada Staff Discussion Paper No. 2018-10

Abstract

This is the fourth of the Financial Markets Department's descriptions of Canadian financial industrial organization. The paper discusses the organization of the securities lending market in Canada. We outline key characteristics of securities lending contracts, participants in the securities lending market, the market infrastructures that support securities lending activities, and aggregated statistics describing the Canadian market. We also describe trading practices, risks and regulation relating to the securities lending market.

A securities lending transaction is the collateralized and temporary transfer of ownership of a security for a fee. One party to the transaction lends securities and collects a fee for the loan. The other party borrows securities and pays the fee. The securities borrower secures the loan by pledging collateral, such as cash or other securities. The main participants in the Canadian securities lending market are banks, dealers, investment funds (e.g., pension funds, mutual funds) and custodian banks. Securities lending supports a variety of market activities and trading strategies; it can be used for market making, collateral transformation, speculation, hedging and arbitrage. Securities lending can generate and spread risks in the financial system because of the levered interconnections it creates among participants; these risks are mitigated and managed through a range of regulation.

Bank topics: Financial institutions; Financial markets; Financial system regulation and policies; Market structure and pricing

JEL codes: G, G1, G18, G21, G23

Résumé

La présente étude constitue le quatrième volet d'une série de travaux que le département des Marchés financiers consacre à la description de l'organisation du secteur financier canadien. Elle a pour objet le marché des prêts de titres au Canada. Nous y présentons les principales caractéristiques des contrats de prêt de titres, les acteurs du marché, les infrastructures de marchés qui soutiennent les opérations de prêt de titres ainsi que des statistiques agrégées du marché canadien. Y sont aussi décrits les risques, les pratiques de négociation et la réglementation inhérents à ce marché.

On définit les opérations de prêt de titres comme le transfert garanti et temporaire de la propriété d'un titre contre rémunération : une des parties prête les titres et perçoit des frais tandis que l'autre, l'emprunteur, reçoit les titres et acquitte les frais. L'emprunteur affecte un bien, comme un montant en espèces ou d'autres sûretés, en garantie du prêt. Les principaux participants au marché canadien des prêts de titres sont les banques, les courtiers, les fonds d'investissement (comme les caisses de retraite et les fonds communs de placement) et les banques dépositaires. Le prêt de titres facilite une foule d'activités sur les marchés et les stratégies de négociation; il sert à la tenue de marché, à la

transformation de sûretés, à la spéculation, aux activités de couverture et à l'arbitrage. Parallèlement, il expose les participants à des positions à effet de levier par l'intermédiaire des liens qu'ils ont entre eux, ce qui peut engendrer des risques qui pourraient se propager dans le système financier. La réglementation permet toutefois d'atténuer et de gérer ces risques.

Sujets : Institutions financières; Marchés financiers; Réglementation et politiques relatives au système financier; Structure de marché et fixation des prix

Codes JEL : G, G1, G18, G21, G23

Introducing securities lending

Securities lending plays an important role in Canadian financial markets. It promotes market liquidity in fixed-income and equity markets, enhances price discovery, prevents settlement failures and supports a variety of trading strategies. It also provides access to funding for security holders and has been identified by the Bank of Canada as one of Canada's core funding markets (Fontaine, Selody and Wilkins 2009). According to IHS Markit data, Canadian firms had approximately Can\$160 billion in securities on loan as at March 2019.

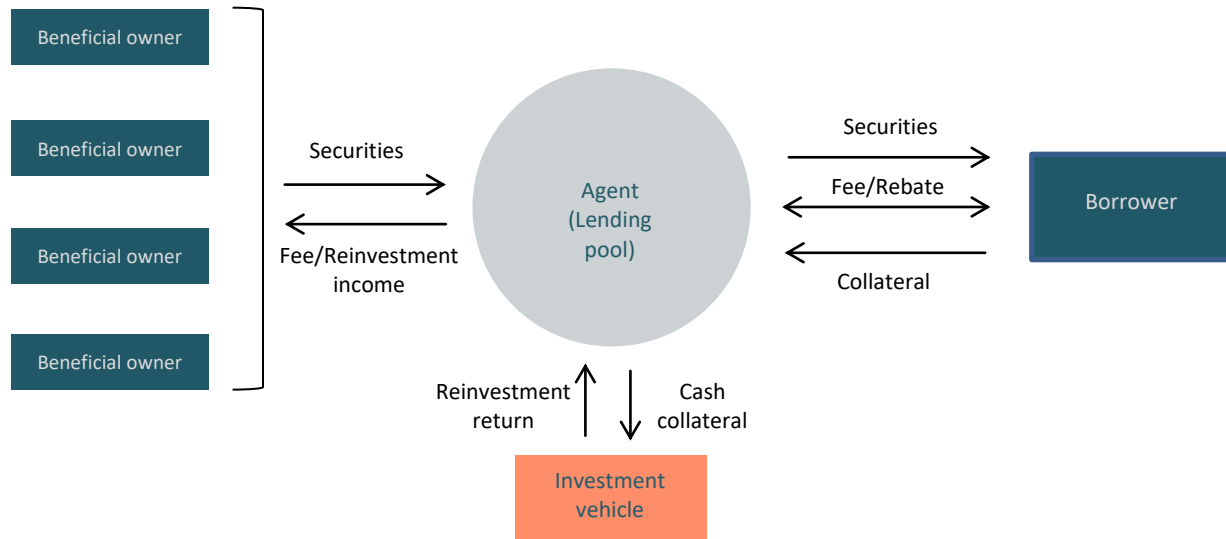
A securities lending transaction is the collateralized and temporary transfer of ownership of a security for a fee. One party to the transaction lends securities and collects a fee for the loan. The other party borrows securities and pays the fee. The securities borrower secures the loan by pledging collateral, such as cash or other securities. In Canada, Government of Canada bonds and equities are the most common securities loaned, followed by corporate bonds, provincial bonds, foreign government bonds and exchange-traded funds (ETFs). The most common forms of collateral are bonds, equities, cash and letters of credit.

Despite the use of the term "loan," securities lending involves transferring the absolute title of the lent securities from the lender to the borrower with the promise that the borrower will return equivalent securities. This legal structure allows the borrower to sell or on-lend (rehypothecate) the borrowed securities. Under most accounting principles, the lent security stays on the balance sheet of the lender, who retains an economic interest in the security because of the agreement to take it back. Securities appear on the borrower's balance sheet only once they are sold or rehypothecated.

The main purpose of the securities lending market is to allow a market participant who needs a security quickly, or for a short term, to obtain it cheaply. Firms that manage large inventories of assets or that act as a repository for assets can earn additional returns by loaning their securities. Securities borrowing is crucial to broker-dealers' market-making activities because it allows them to offer their clients a variety of securities without having to carry large inventories. Securities lending is also associated with trading strategies that rely on short selling. Additionally, securities lending can be important for facilitating collateral transformation.

Figure 1 provides a simplified example of a typical domestic securities lending transaction (see **Appendix A** for a list of key terms and definitions related to securities lending). The following sections provide detailed explanations of the key features and uses of the securities lending market and its main participants.

Figure 1: A simplified securities lending transaction



Securities lending practices in Canada

This section covers how securities lending is conducted in Canada, including the way the securities lending fee is calculated and the motivations to engage in the transaction.

Market activities supported by securities lending

A variety of trading activities, such as market making, collateral transformation and price speculation, are enabled by securities lending.

Market making

When making markets, a broker-dealer will often sell a security that it does not own by borrowing it in the securities lending or repo markets to make delivery.¹ This allows a broker-dealer to offer securities on a large scale without having to maintain large inventories. Primary dealers of government securities, who are obliged to make markets, often borrow and lend under securities lending agreements for this reason.

A broker-dealer can borrow securities through securities lending or through reverse repos. Securities lending has several advantages over reverse repo for broker-dealers wishing to borrow securities. First, custodians and lending agents pool securities across many owners and are therefore often better able to provide a specific security. Second, since dealers often prefer to stay anonymous, securities lending

¹ Repo (or repurchase) transactions refer to short-term loans where an entity receives cash and pays interest and provides securities to the cash lender as collateral. A reverse repo is when an entity lends cash to another party, earns interest and receives securities as collateral. See [Garriott and Gray \(2016\)](#) for a more detailed discussion of this market.

allows them to cover a short position without revealing their position to the broader market. Even if a custodian charges a slightly higher fee than what is available in the repo market, it may be worthwhile to borrow from the custodian for anonymity.²

A broker-dealer can also intermediate the short positions of its clients by borrowing securities from a custodian, which it then lends to its clients so that their trades can settle.

Collateral transformation

Borrowers can use the securities lending market to swap a less-desired security for a preferred security. Upgrading collateral through securities lending may be used to raise cash in the repo market or at central bank operations. For example, a borrower may use equities as collateral to borrow government bonds in the securities lending market, then present the higher-quality government bonds as collateral in the repo market to obtain cash. Similarly, borrowers can use securities lending to procure high-quality liquid assets to meet or improve their regulatory liquidity ratios. Collateral transformation has become more attractive to market participants as more securities transactions are cleared through central counterparties, which accept only high-quality collateral as margin.

Speculation

The ability to borrow in the securities lending market enables speculative shorting as well as a host of arbitrage trading strategies. In the absence of an active and highly intermediated securities lending market, many of these strategies would be expensive and difficult to execute because the supply of securities would be more fragmented, less predictable and less likely to be readily available.

Hedging

A common reason to short a security is to hedge the risk of a position in another security. For example, market participants often create a short position in a government bond to hedge the interest rate risk in a lower-rated corporate bond with a similar duration. The hedge removes interest rate risk from the position, leaving only the credit risk that is of interest to the investor. To short a government bond using securities lending, the hedger borrows the bond in a securities lending agreement and then sells the bond. When the hedger wants to close the short position, it buys the bond to return it to the lender.

Dividend reinvestment trades

Shareholders occasionally have the option to receive dividends either in the form of cash or in the form of additional shares known as scrip. In instances where the scrip is offered at a discount to the outstanding share price and a shareholder is constrained from owning additional shares (e.g., due to investment or asset allocation guidelines), securities lending can facilitate an arbitrage. The arbitrageur can borrow the shares over the dividend payment date, collect the discounted scrip dividend, sell the shares and then manufacture a cash dividend back to the original owner. This is a relatively common trade in Canada since oil and resource companies often pay a scrip dividend.

² This advantage may diminish as market participants make greater use of the Canadian Derivatives Clearing Corporation's repo central clearing counterparty for repo trades, which allows market participants to remain anonymous. The adoption of anonymized repo trading at inter-dealer brokers may similarly diminish the advantage of securities lending.

Cash versus non-cash collateral

Securities loans are collateralized to provide the lender recourse in the event of borrower default. Collateral can be cash or non-cash (e.g., bonds, equities or letters of credit). In Canada, highly rated debt has historically made up most of the collateral posted. Cash accounts for only a small portion (12 percent) of collateral posted (see **Chart 6** in the Statistics section). This contrasts with the US market, where most securities lending transactions are cash collateralized (Baklanova, Copeland and McCaughrin 2015).

Fees and rebates

The securities lending fee or rebate is determined by the market; however, pricing for particular securities lending transactions depends on the transparency and liquidity of the asset class and the characteristics of the specific security being lent.

For securities that have an active repo market, such as government bonds, specific repo rates posted on broker screens can serve as a reference.³ The total securities lending fee (including the custodian's share) is generally close to the specific repo rate; otherwise, an arbitrage opportunity would be present.

Pricing is less transparent for other types of securities, such as equities and corporate bonds. Securities lending fees in these cases are subject to negotiation between the parties and depend on the relative supply and demand of the securities. Because of this and the greater variety of securities in these asset classes, prices can vary significantly. Several data providers (such as IHS Markit, SunGard Lending Pit and EquiLend) collect and disseminate information, including volumes traded and fees, to help market participants benchmark fees.

The securities lender in non-cash-collateralized transactions is paid a fee. The fee is negotiated between the borrower and lender and is based on several factors, such as the supply and demand for the security, the list of acceptable collateral and the term of the transaction. In Canada, the fee is paid monthly in arrears. It is calculated using money-market conventions:

$$\text{Total fee (in \$)} = \frac{\text{Days}}{365} \times \text{Fee (in basis points)} \times \text{Face value of securities lent (in \$)}$$

On cash-collateralized transactions, the securities lender pays the securities borrower interest on cash collateral; this payment is known as a rebate. The rebate is calculated the same way as the fee and tends to be lower for securities in higher demand and can be negative. The Bank of Canada's target for the overnight rate is often referenced as a benchmark in negotiating the rebate. For securities in low demand, the rebate will generally approach the GC repo rate.

Cash collateral is typically reinvested in low-risk, liquid products, such as money-market funds, repos against government collateral, and bank deposits. However, cash collateral can also be invested in

³ The term "specific repo" refers to when the intent of the repo transaction is to obtain a specific security. Securities that trade in the specific repo market are referred to as being "on special." Specific repo stands in contrast to general collateral (GC) repo. A GC repo has two distinguishing criteria relative to specific repo: (i) the primary purpose of GC repo is to obtain funding rather than securities; (ii) collateral provided in a GC repo can be a basket of predefined securities (i.e., the general collateral).

products with greater price risk. The lender earns a return from the spread between the rebate and the reinvestment rate.

Lending agents are typically responsible for reinvesting cash collateral and take a portion of investment returns. However, lending agents are not subject to loss sharing should reinvestment prove unprofitable. A lack of loss sharing may result in moral hazard if cash reinvestment criteria are not sufficiently stringent (Keane 2013). A securities lender can mitigate this risk by setting risk management criteria for its lending agent to follow.

The securities lending agreement

A securities lending agreement is the collateralized and temporary transfer of ownership of a security for a fee. Securities lending agreements can be conducted bilaterally between a borrower and a lender or between a borrower or lender and a lending agent. The terms of the loan can be customized in several ways, such as by maturity date and collateral. Loan features, along with the supply and demand for a given security, determine the fee or rebate negotiated between the borrower and lender. Once the parties agree to terms, the lender delivers the securities to the borrower, and the borrower delivers the collateral to the lender. Over the life of a securities lending agreement, securities and collateral are marked to market daily to maintain the required level of collateralization, while fees and rebates are paid monthly in arrears.

Because a securities lending agreement is legally structured as a transfer of absolute title of lent securities, the borrower receives any cash flows generated by the security, such as dividends and coupons. The borrower reimburses the lender for these payments as they are received. In securities lending terminology, the borrower “manufactures” the payment to the lender. The borrower manufactures these payments even if it has rehypothecated or sold the borrowed security.

Securities lending master agreement

All securities lending transactions are governed under a master agreement. The three commonly used master agreements in Canada are the International Securities Lending Association’s Global Masters Securities Lending Agreement (GMSLA), the Securities Industry and Financial Markets Association’s Master Securities Loan Agreement (MSLA) and the Securities Loan Agreement (SLA) of the Investment Industry Regulatory Organization of Canada (IIROC). The standard text of these agreements largely describes each party’s rights and responsibilities in an adverse event, such as a default. Terms and conditions in appended schedules are customizable and outline the day-to-day aspects of the contract. **Table 1** highlights some of the key terms and conditions outlined in securities lending agreements.

Table 1: Key conditions outlined in securities lending agreements

Title of loaned and collateral securities	<p>Absolute legal title of the loaned securities is transferred. For transactions conducted under GSMLA, absolute title of collateral is transferred to the lender, while for transactions completed under MSLA or SLA, collateral is pledged to the lender.</p> <p>Securities lending transactions for most types of collateral are exempted from automatic stay in bankruptcy court, preserving the integrity of the sale and repurchase. The legal exemption from automatic stay is called “safe harbour.”</p>
Equivalent securities	<p>Securities returned must be of an identical type, nominal value, description and amount as the loaned or collateral securities. In the case of an event such as a takeover, “equivalent securities” refers to those the borrower or lender is entitled to after the event.</p>
Substitution of collateral	<p>The borrower can substitute alternative collateral acceptable to the lender.</p>
Manufactured payments in respect of loaned securities	<p>The borrower must make payments equal to the amount and type of income the lender would have received had the securities not been loaned to the borrower and instead were retained by the lender on the income record date.</p>
Manufactured payments in respect of non-cash collateral	<p>Manufactured payment is equal to the amount and type of income the lender would receive assuming the lender is not entitled to any credit, benefit or other tax relief.</p>
Right to terminate a loan	<p>Both the borrower and the lender have the right to terminate a loan at any time, subject to the standard settlement time for the securities and the terms of the relevant loan.</p>
Income in the form of securities	<p>Any distribution in the form of securities is added to the loaned securities or collateral securities and returned at the end of the loan rather than being manufactured back.</p>
Corporate actions	<p>In cases of rights relating to conversion, subdivision, consolidation, takeover, etc., the borrower or lender may give notice to its counterparty regarding the form of equivalent collateral it wishes to receive to exercise the right.</p>

Key features of a transaction

Term

The term of a securities lending agreement is the length of time between the settlement and maturity dates of the loan. For a securities loan with a fixed term, the maturity date is set in advance and cannot be changed unilaterally. If the term is open, the loan continues indefinitely until either the borrower or the lender terminates the loan. In Canada, most securities loans have an open term. There are numerous reasons why either counterparty may terminate a loan, including that the lender or borrower wishes to reacquire its securities to vote at a shareholders' meeting, the lender or borrower becomes concerned with a counterparty's creditworthiness, or the borrower wishes to close out a short position.

Collateral

Securities lending agreements are overcollateralized to protect the lender from a decline in the value of the collateral if a borrower defaults or fails. Overcollateralization in securities lending serves the same purpose as a haircut in other markets and is always in favour of the lender. The level of overcollateralization is negotiated between the borrower and the lender and depends primarily on the collateral type and to a lesser extent on the borrower's creditworthiness. In Canada, and depending on the entity, minimum overcollateralization requirements are set by the Office of the Superintendent of Financial Institutions (OSFI), IIROC and provincial securities regulators; these requirements are covered in this paper's section on regulation.

Non-cash collateral is posted through either a pledge or a transfer of title; the method chosen depends on the type of agreement and type of counterparty. GMSLA requires title transfer and is typically used for transactions with European and domestic bank counterparties, while MSLA and SLA use pledging and are employed when dealing with broker-dealers or US-based counterparties. The key difference between a pledge and a transfer of title is that the latter allows the lender or collateral recipient to on-lend the collateral (i.e., the lender has the same rights to the collateral as the borrower has with the lent securities), while the former only gives the lender access to collateral in the event of a counterparty default.

Nonetheless, market practice in Canada is for non-cash collateral to be held in a segregated account with a custodian, without rights of rehypothecation, and to be made available only in the event of the borrower's default.

Dividends and coupons

A securities lending agreement transfers the absolute title of the lent securities from the lender to the borrower. Thus, the borrower receives any dividends or coupons paid by the lent securities. However, the borrower is required to reimburse or "manufacture" these payments back to the lender. The manufactured payments are equal to the dividend or coupon the lender would have received had it not lent the securities. The borrower must manufacture these payments even if it has rehypothecated or sold the borrowed securities. When dividends are offered as the option of cash or additional shares (known as a scrip dividend), the lender will specify its choice. If the lender specifies a cash dividend, the borrower may still opt to receive either a scrip or a cash dividend, but it is obligated to manufacture a cash dividend to the lender.

Rights to vote at shareholder meetings

By transferring absolute title of the security, the lender loses the rights associated with ownership of the security for the term of the loan. For equities, this means the lender cannot vote the shares that it has loaned. While economic benefits such as dividends and coupons can be manufactured back to the lender, voting rights cannot. Thus, if a lender wants to vote the shares, it must recall them. Typically, lenders will lend only a portion of their shares so that they can participate in corporate governance without having to recall all their shares. Borrowing shares for the sole purpose of voting with them is not considered acceptable market conduct; while there is no regulation prohibiting this practice, securities regulation does require investors to disclose their positions if their total ownership, control or direction of voting or equity shares reaches prescribed thresholds.

Securities lending authorization

In most cases, the lender (i.e., the beneficial owner of the lent securities) does not manage the day-to-day business of lending its securities but instead uses a lending agent, such as its custodian bank. The beneficial owner delegates this responsibility through a securities lending authorization. The standard text of the contract permits the lending agent to act on behalf of the beneficial owner, subject to specified risk-mitigating factors such as minimum overcollateralization, daily marking to market and the right to request the return of securities. Appendices include more precise conditions, such as the maximum value of securities that can be lent from the portfolio at any one time, how lending income is split between the beneficial owner and the lending agent, acceptable collateral and approved investment vehicles for cash collateral, and a list of approved borrowers.

The securities lending authorization also defines any indemnity provided by the agent. Lending agents often offer to indemnify the beneficial owner against borrower default or other risks. A common type of indemnity will pay the difference between the value of collateral and the cost of replacing the lent securities should the borrower default. Importantly, indemnities do not cover losses from the reinvestment of cash collateral.

Effect of securities lending on the balance sheet

The effect of securities lending on the balance sheet of the lender depends on whether non-cash or cash collateral is provided and whether the lender has rehypothecation rights. Transactions using cash collateral or securities collateral with rehypothecation rights expand the lender's balance sheet, while transactions using securities collateral without rehypothecation rights do not. From the borrower's perspective, it is not the securities lending transaction itself that expands the balance sheet but the associated sale or usage of the borrowed security that does so; see **Appendix B** for an illustration.

Comparing securities lending to specific repo

Specific repos are similar economically to securities lending arrangements and serve a similar purpose: to allow market participants to locate and borrow specific securities. However, there are several differences between the two transactions types. For example, securities lending uses cash, securities and letters of credit as collateral, while specific repo uses cash only; specific repo is typically used to obtain bonds, while securities lending is used to obtain both equities and bonds. See **Table 2** for a more detailed comparison of the two securities financing transaction types.

In the absence of arbitrage opportunities, the rebate on the securities lending transaction should be close to the specific repo rate.

Table 2: Specific repo vs. securities lending	Specific repo	Securities lending
Collateralization	Cash	Cash, securities (debt and equities), letters of credit
Term	Generally fixed, but can also be open (i.e., can be terminated by either party at any time)	Generally open but can also be fixed
Payment of interest/fee	At maturity	Monthly in arrears
Overcollateralization	Yes, in favour of the <i>cash</i> lender	Yes, in favour of the <i>securities</i> lender
Collateral substitution	No	Yes, determined by the borrower and dependent on the lender's approved collateral.
Dividends and coupons	Paid to the seller in the amount paid by the issuer	"Manufactured" to the lender, and equal to the amount the lender would have received had the securities not been on loan
Asset type	Typically bonds	Bonds and equities

Participants in the Canadian securities lending market

Participants in the securities lending market can be broadly classified as lenders, borrowers, and market intermediaries such as lending agents and principal intermediaries. Lending directly in the market requires considerable expertise and investment in technology. Since the primary objective of most securities lenders is to earn an incremental return on their portfolios rather than actively lend their securities, the market is highly intermediated, with securities lenders usually contracting a custodian bank to act as a lending agent.

Lenders

Each securities lending transaction has a borrower and a lender. The lender may be any firm with beneficial ownership in a security it is willing to lend. In practice, large buy-side firms (e.g., pension funds, mutual fund providers, ETF providers, university endowments and insurance companies) are the most common lenders since securities lending is a scale business. While they are typically net borrowers in the securities lending market, broker-dealers also lend out securities extensively via securities lending agreements as part of their regular market-making activities. The Bank of Canada has a securities lending program in place to help support the liquidity of Government of Canada securities by providing a secondary and temporary source of these securities to the market. Under this program, the Bank can

lend a portion of its holdings of Government of Canada securities to primary dealers when the Bank judges that a security is trading below a certain threshold, or is unavailable, in the repo market.⁴

Lenders are primarily motivated to generate incremental income on their portfolio of securities through securities lending. Some are lending simply to offset custody and administrative costs, while others lend against cash collateral to finance long positions and seek more substantial returns.

Borrowers

Borrowers include any market participant looking to execute a variety of market-making, financing or speculative trading strategies, such as shorting. Typical borrowers include broker-dealers, hedge funds and other asset managers. In Canada, the most common borrowers are broker-dealers borrowing for their own use or on behalf of clients while acting as principal intermediaries.

Lending agents

Since securities lending is a second-order consideration for lenders, and because of the expertise and systems required to implement a securities lending program, most participants opt to engage a lending agent to run their program. The most common lending agents are custodian banks because their role in settlement and custody of the lender's portfolio overlaps with the duties required of a lending agent. The largest lending agents in Canada are RBC Investor and Treasury Services, CIBC Mellon, State Street, and Northern Trust. Other third-party entities that do not provide custody services (e.g., asset managers) can also act as lending agents, though they are uncommon in the Canadian market, and securities regulations prohibit their usage for mutual funds.

Lending agents manage the day-to-day aspects of securities lending, while beneficial owners play an overall oversight role. Lending agents arrange trades, perform due diligence on prospective borrowers, reinvest cash collateral within predefined parameters, and manage all operational and administrative aspects of lending. Lending agents also provide a valuable service to borrowers by aggregating the supply side of securities into their lending pools. These pools provide borrowers with a stable source of securities while preserving the beneficial owner's right to terminate the loan at any time.

The Canadian market historically used the "undisclosed" lending model, where the lending agent offers securities without disclosing the identity of the beneficial owner. Thus, the lending agent would act as an agent to the beneficial owner but as a principal to the borrower. More common globally is the "disclosed" lending model, where the lending agent discloses the identity of the beneficial owner and therefore acts purely in an agency capacity.

Discussions with market participants suggest Canadian agents have shifted toward the disclosed model over the past several years, meaning that borrowers now must perform due diligence and consider the credit risk on all beneficial owners they transact with rather than the lending agent alone.⁵ Securities lenders remain focused primarily on the credit risk of their lending agent because of indemnities they are provided.

⁴ See the Bank of Canada's [securities lending program](#) for more information on terms.

⁵ IIROC allows its members to treat disclosed agency arrangements as equivalents to undisclosed principal arrangements if certain conditions are met (IIROC Notice 14-0066).

Not all lenders use a lending agent; some beneficial owners, particularly the largest asset managers that can achieve sufficient economies of scale, manage their securities lending in-house.

Some beneficial owners may auction exclusive access to their portfolio to a large borrower (typically a principal intermediary). Nevertheless, most funds in Canada that are active in securities lending use a lending agent.

Principal intermediaries

Many potential borrowers do not have the credit rating to borrow from lenders directly. These borrowers therefore rely on principal intermediaries, such as broker-dealers. A principal intermediary will use its credit rating to borrow a security from the beneficial owner and then rehypothecate the security to the end user (e.g., the hedge fund). The principal intermediary earns a spread between what it pays to borrow the security and what it charges its clients. Like lending agents, principal intermediaries also provide a stable source of securities loans to their clients through their ability to effectively pool securities from multiple beneficial owners.

Statistics on securities lending in Canada

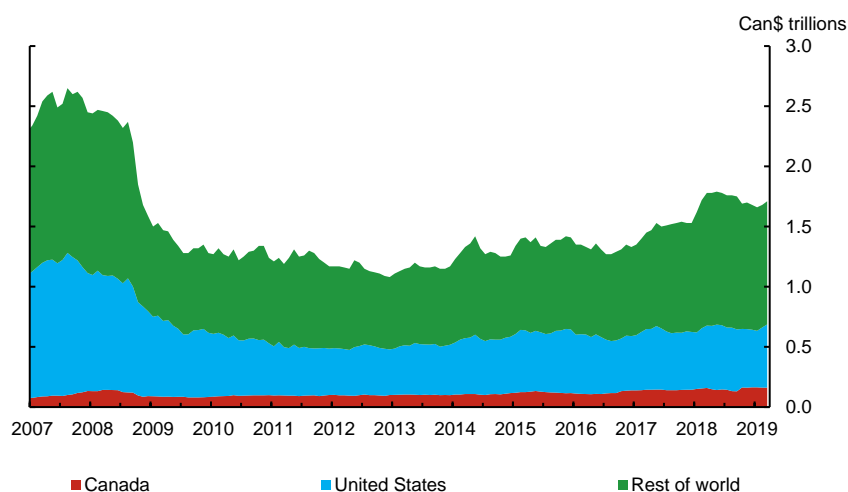
For this section, we use the securities finance data feed produced by IHS Markit. The data feed is estimated to cover 85 percent of the domestic market and is widely used by market participants and authorities alike.

Global securities lending activity

Chart 1 shows that the global securities lending market had between Can\$1.2 trillion and Can\$1.7 trillion of securities on loan in recent years. The US securities lending market is the largest in the world, making up almost a third of the global lending market. Canadian firms' securities on loan make up about 10 percent of the global market.

Chart 1: Global securities lending has not fully recovered since the financial crisis

Total value of securities on loan by location of lending firm, monthly data



Sources: IHS Markit and Bank of Canada calculations

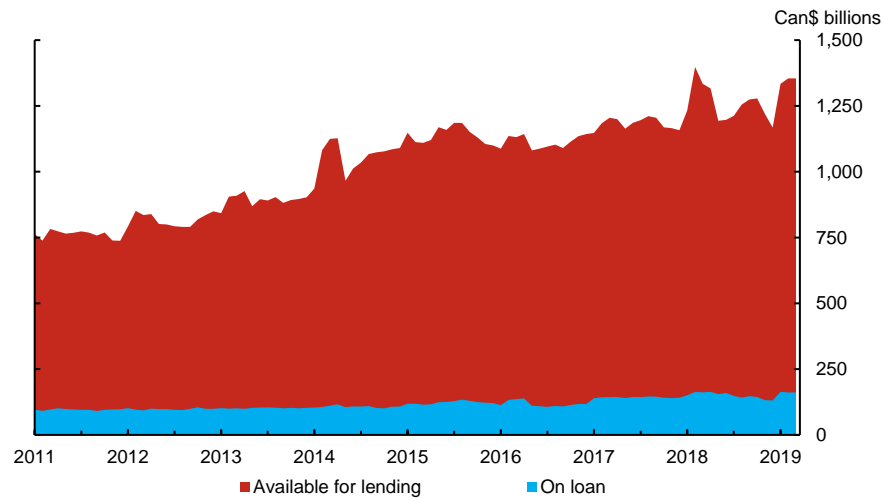
Last observation: March 2019

Canadian firms' securities lending activity

Chart 2 shows the size of the Canadian securities lending market in terms of the total amount of securities available for lending and securities on loan. As at March 2019, firms domiciled in Canada had approximately Can\$1.4 trillion of securities available to lend and about Can\$160 billion on loan.

Chart 2: Canadian firms' inventory of lendable securities has increased

Global securities available for lending and on loan by Canadian firms, monthly data



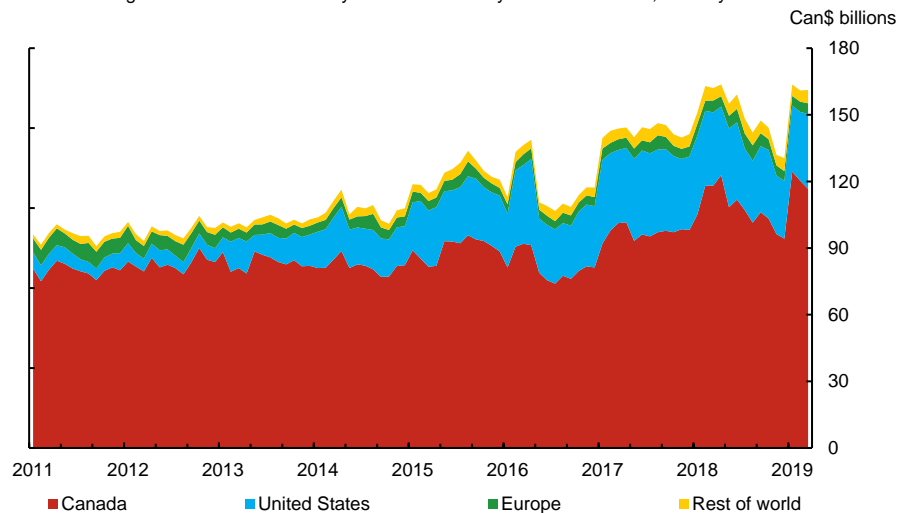
Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Chart 3 shows that the amount of Canadian securities loaned out by domestic firms has grown in recent years, as have the share and amount of US securities on loan because of higher volumes and the appreciation of the US dollar.

Chart 3: Canadian firms primarily conduct securities lending in Canadian and US securities

Value of global securities on loan by Canadian firms by location of issuer, monthly data



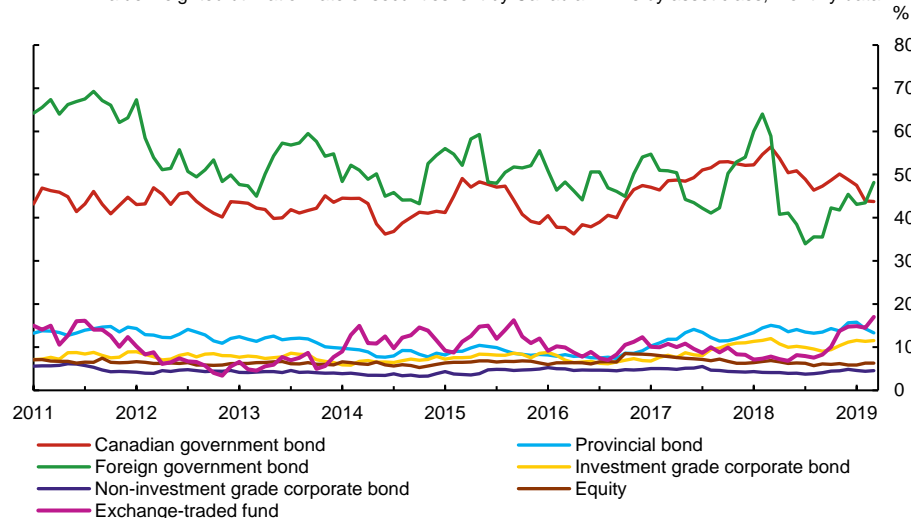
Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Chart 4 shows the utilization rates of different classes of securities, which are calculated as the amount on loan over the lendable amount. Government of Canada and foreign government bonds have the highest utilization rates. Among Government of Canada securities, benchmark bonds have higher utilization rates than non-benchmark bonds.

Chart 4: Utilization rates for Government of Canada securities remain high

Value-weighted utilization rate of securities lent by Canadian firms by asset class, monthly data



Note: The utilization rate of an individual security is defined as the proportion of lendable inventory that is currently on loan.

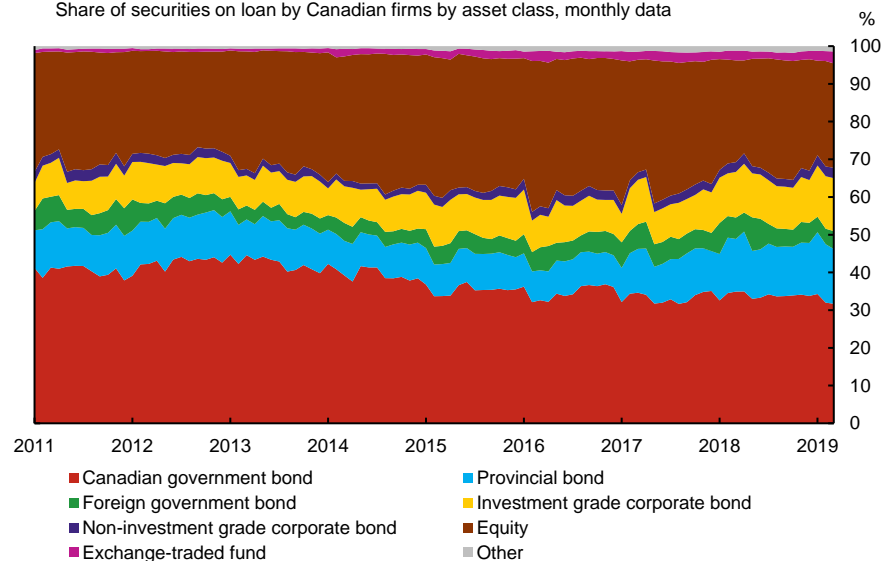
Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Chart 5 shows that the percentage breakdown of security loans by asset class has not seen marked shifts in composition over the past several years. Government of Canada bonds and equities remain the largest asset classes on loan.

Chart 5: The composition of securities on loan in Canada has been stable

Share of securities on loan by Canadian firms by asset class, monthly data



Sources: IHS Markit and Bank of Canada calculations

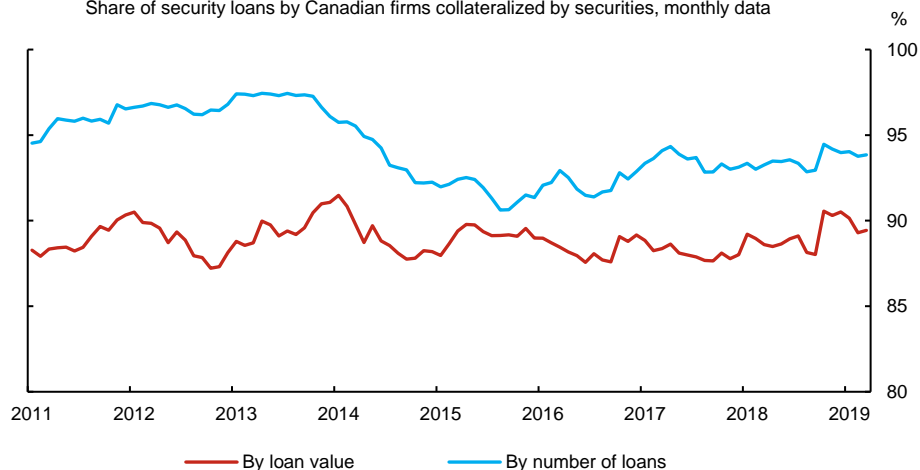
Last observation: March 2019

Collateral, term and fees

In contrast to the United States but consistent with Europe and Asia, most Canadian securities lending transactions are non-cash collateralized. As we can see from **Chart 6**, the dollar value of non-cash-collateralized securities loans has held steady, while the number of non-cash-collateralized transactions has declined, indicating that the average non-cash-collateralized securities loan has become larger.

Chart 6: The majority of transactions use non-cash collateral

Share of security loans by Canadian firms collateralized by securities, monthly data



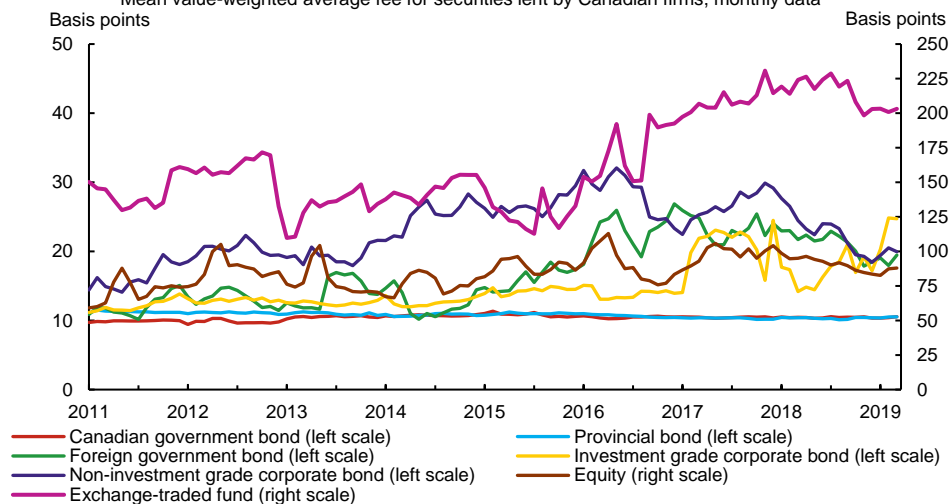
Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Chart 7 shows the value-weighted average fee for non-cash-collateralized transactions. The fees for government, provincial and investment-grade corporate bonds have remained low and steady; fees for non-investment grade and foreign government bonds have been moderately higher and more volatile; and fees for equities and ETFs have been far higher and more volatile than those for fixed-income securities. Note that these fees are averages broken down by asset class; specific securities within an asset class (e.g., a benchmark Government of Canada bond, a heavily short-sold equity) would see significantly higher fees at different points in time.

Chart 7: Borrowing fees vary significantly by security type

Mean value-weighted average fee for securities lent by Canadian firms, monthly data



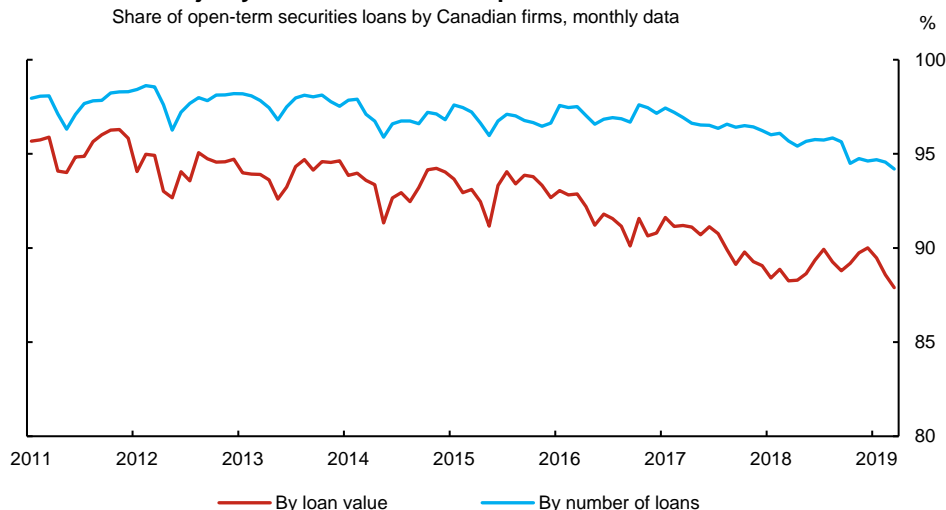
Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Canadian securities loans are overwhelmingly conducted on an open-term basis, meaning that loans are rolled over daily and either counterparty can terminate the transaction with notice at its discretion. As illustrated in **Chart 8**, while the proportion of transactions conducted on an open-term basis has seen a slight decline over the past eight years, the dollar volume of open-term loans has seen a larger, but also slight, decline. Also, the average term of closed-term securities loans has risen significantly, from a low of 35 days in 2012 to almost 340 days in March 2019 (**Chart 9**).

Chart 8: The majority of transactions are open term

Share of open-term securities loans by Canadian firms, monthly data

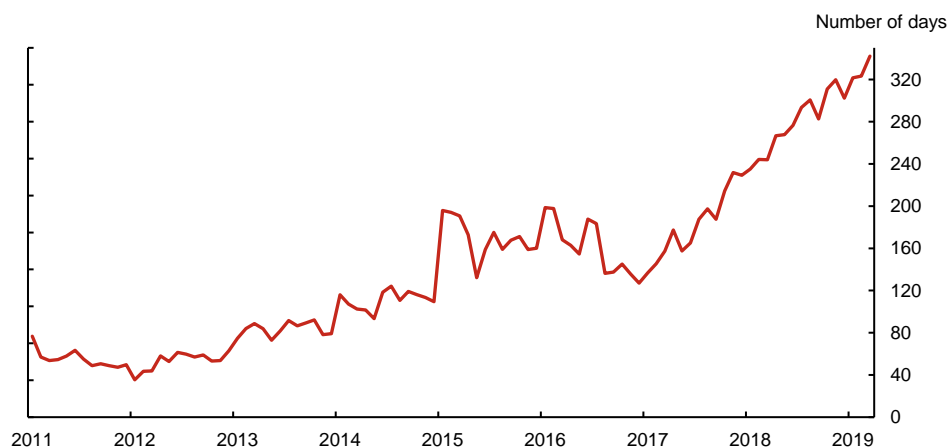


Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Chart 9: The tenor of closed-term transactions has increased

Value-weighted average tenor of closed-term securities loans by Canadian firms, monthly data



Sources: IHS Markit and Bank of Canada calculations

Last observation: March 2019

Infrastructure of the Canadian securities lending market

In instances where the borrower and lender use different custodian banks or lending agents, securities lending transactions are settled on CDSX. CDSX is Canada's national securities depository and settlement

system and is run by CDS Clearing and Depository Services Inc. For a counterparty to settle on CDSX, it must either be a direct participant or have indirect access to CDSX through a direct participant.⁶

Securities lending typically uses the “pledge” function of CDSX, in which transactions settle in real time on a delivery-versus-collateral basis (i.e., the securities being lent and the corresponding collateral must both be delivered for transactions to settle) and must be confirmed by both parties in the transaction. The pledge function allows securities lenders to secure their interest in the borrower’s collateral, which they can take possession of in the event of a borrower’s default. Once collateral securities are pledged, securities borrowers cannot use those securities for another purpose. However, securities borrowers can substitute pledged collateral throughout the term of the loan.

CDSX’s “trade” function can also be used to complete securities loans, although it is not typically used for securities lending. Loans conducted under the trade function are settled in real time on a delivery-versus-payment basis (i.e., both cash and securities must be delivered for transactions to be settled). The trade function can be used only for cash-collateralized securities loans.

A key difference between the trade function and the pledge function is that under the trade function, securities and funds are transferred outright; the securities borrower cannot substitute collateral without unwinding the original transaction.

Transactions using both trade and pledge functions settle between 00:30 and 04:00 (eastern time) for transactions with same-day settlement, at 04:00 as part of CDSX’s batch net settlement process and in real time between 07:00 and 16:00 for transactions done during the business day and that were not completed during previous processes.⁷ For transactions that were not settled before 16:00, CDSX gives market participants the option to renew and settle the securities legs of their transactions between 16:30 and 19:30; however, any cash leg must be settled outside of CDSX if this window is used for settlement. Pledge transactions that are not completed by the end of the business day are deleted by CDSX, while transactions using trade will be carried over to the next day.

Where the securities lender and borrower share the same lending agent and custodian bank, the custodian bank can clear and settle a transaction internally. By clearing and settling on their own book, lending agents may be able to complete the transaction with more ease and/or avoid incurring CDSX fees.

Securities lending risks

Securities lending carries risks for both the participants in the transactions and markets more generally. Risks in this section will thus be broken down into two broad categories: (i) transaction-level risks and (ii) market-wide or systemic risks.

⁶ CDSX is designated as a systemically important financial market infrastructure by the Bank of Canada and is thus overseen by the Bank under the terms granted to it under the *Payment Clearing and Settlement Act*.

⁷ In a batch net settlement, all of a participant’s trades in CDSX are first netted, and then settlement is attempted.

Transactional risks

Counterparty credit risk

A key risk in securities lending transactions is that one of the counterparties defaults and is unable to return borrowed or collateral securities. For a securities lender, this risk is mitigated by the collateral it receives in the transaction and by indemnities provided by its lending agent. For a securities borrower, the risk is reduced through recourse to the securities it borrowed in the transaction. Lending agents also face counterparty risk from the indemnities they offer to securities lenders; a lending agent will be exposed to a loss if a securities borrower defaults and the market value of collateral is insufficient to replace the lent securities.

Collateral credit, liquidity and interest rate risks

Parties in securities lending transactions face the risk that securities' values can move significantly, which could leave parties with uncollateralized exposures to their counterparties. There are several sources of price risk: credit risk, interest rate risk and liquidity risk. Collateral credit risk is the risk that the entity issuing the security defaults. Interest rate risk is the risk that changes in rates will reduce the securities' market value.

Liquidity risk is the risk that a security cannot be sold quickly without a negative impact on its price. If a counterparty were to default and the lender or borrower were to take possession of its securities, the possessed securities might not be able to be sold quickly without a significant price impact. In this case, the surviving counterparty may be left with securities for which it has no investment need, or it may be forced to sell the received securities at a loss. Haircuts on collateral mitigate this risk for securities lenders, and daily marking to market of positions helps ensure that participants do not accumulate large uncollateralized positions. Indemnities offer further protection against loss for securities lenders. Securities lenders can further reduce their risk by putting restrictions on the quality of collateral they will accept from their counterparties.

Transformation risks

Securities lenders can also create transformation risk through their cash collateral reinvestment practices. Securities lenders can use cash collateral to invest in lower-credit-quality securities (credit transformation), less liquid securities (liquidity transformation) and/or securities with longer maturities (maturity transformation) to try to generate additional returns. Securities borrowers can engage in a similar strategy using non-cash collateral by first engaging in collateral transformation; they can exchange lower-quality collateral for higher-quality collateral, which they use to obtain cash in the repo market to then invest in risky securities. These types of investment strategies, however, can expose a securities borrower to leveraged losses if prices for different types of collateral diverge or if securities lenders call back their loans (see **Box 1** for an example).

For the cash-collateralized case, these risks are mitigated in Canada through various restrictions on the cash collateral reinvestment strategies of investment funds, the low prevalence of cash collateral in domestic securities lending transactions, and the generally conservative cash reinvestment strategies of securities lenders. For the non-cash-collateralized case, these risks are mitigated by various restrictions on leverage put in place by the various Canadian regulators (e.g., haircuts, capital requirements, margin requirements).

Box 1: AIG securities lending and the financial crisis

Historically, securities lending has become risky when cash-collateralized transactions involve a high degree of maturity or liquidity transformation. One example of this is the insurer AIG during the financial crisis. During the years leading up to the financial crisis, AIG ran a large in-house securities lending program. AIG's strong credit rating combined with its large portfolio of in-demand securities made it an ideal counterparty for many borrowers. AIG lent out its securities for cash collateral, much of which was reinvested in residential mortgage-backed securities and other asset-backed securities, with only a small cash buffer retained to meet redemptions. Between September 12 and September 30, 2008, AIG's program experienced a run as borrowers demanded that \$24 billion in cash collateral be returned. Losses from the program in the third quarter of 2008 alone totalled \$12 billion. The Federal Reserve Bank of New York had to borrow \$38 billion of securities from AIG and provide it cash collateral so that AIG would be able to return cash collateral to counterparties that had stopped dealing with it (Pierce 2014).

Rollover risk

Rollover risk is the risk that when a securities borrower wants to extend an outstanding position, counterparties are unwilling to transact and the borrower either is forced to transact at a higher cost or is unable to rollover its outstanding transactions. If the latter occurs, securities borrowers can be forced into a costly and potentially disruptive unwinding of their outstanding positions. Rollover risk is particularly important in Canada relative to other jurisdictions given the high proportion of open-term securities lending transactions in the domestic market.

Settlement risk

Settlement risk is the risk that one of the entities in the transaction does not deliver securities at the agreed-upon date. If an entity was planning to use a security for some other transaction, a settlement failure could impose costs on the failed entity by forcing it to source a security at a potentially high cost.

Systemic risks

Systemic risk is the risk that the failure or poor performance of one financial entity can cause a cascade of failures among other financial entities or markets. Because securities lending can involve the creation of large, leveraged interconnections between market participants, it can be both a source of systemic risk and a channel for the difficulties of one market participant to spread to unrelated entities and markets (see **Appendix B** for balance sheet effects of securities lending).⁸

The transaction-level risks highlighted in the previous section can transform into system-wide risks. For example, an increase in the price volatility of securities could result in a "margin spiral," particularly in cases where lower-quality collateral has been exchanged for a higher-quality asset since their prices tend to diverge during periods of market volatility.⁹ The default of a large securities borrower could

⁸ For further discussion on financial stability issues arising from securities lending, see Financial Stability Board (2012).

⁹ A margin spiral is essentially a forced deleveraging that occurs when increased market volatility results in margin calls (i.e., security borrowers must post additional collateral to securities lenders). This can cause a reduction in market liquidity, which causes further increases in market volatility that then necessitate further margin calls. See Acharya and Viswanathan (2011), Brunnermeier and Pedersen (2008) and Shleifer and Vishny (2011) for further discussion on fire sales and margin spirals.

trigger price declines and fire sales if the defaulter's collateral is quickly sold off by its counterparties. This could result in sudden drops in the value of affected collateral and thus provoke margin calls for third parties who were using the same type of collateral.

Securities lending regulation in Canada

Regulation of domestic securities lending activities is shared between OSFI, provincial securities regulators and IIROC. OSFI focuses on the securities lending activities of federally regulated financial institutions; provincial securities regulators focus on securities lending conducted by mutual funds and publicly traded investment funds; and IIROC regulates the securities lending activities of its broker-dealer members.

OSFI requirements

Capital requirements

OSFI sets minimum capital requirements through risk-based capital ratios and a leverage ratio. Criteria for the risk-based capital ratios are defined in the Capital Adequacy Requirements and are calculated as follows:

$$\frac{\text{Available capital}}{\text{Credit risk weighted assets} + \text{Operational risk weighted assets} + \text{Market risk weighted assets}}$$

Securities financing transactions such as securities lending and repos increase a bank's risk-weighted assets and thus have a negative effect on their risk-based capital ratios. A securities lending transaction's contribution to a bank's risk-weighted assets is dependent on several factors, including whether the bank is the securities borrower or lender, the loan value, the type of collateral provided and the credit risk of the counterparty.

The leverage ratio uses an unweighted measure of banks' assets and requires them to have capital that is sufficiently large relative to the unweighted exposure measure:

$$\frac{\text{Tier 1 capital}}{\text{Exposure measure}} \geq 3\%$$

The exposure measure is the total of a bank's on-balance sheet, derivative, securities financing and off-balance sheet assets. Tier 1 capital refers to a bank's highest-quality capital (e.g., common equity and retained earnings). The high gross notional values that can result from securities lending can lead to significant balance sheet expansion (see **Appendix B** for the effect of securities lending on balance sheets). Since securities lending can be used in support of ordinary market making and trading activities, there are several permitted adjustments that can reduce the exposure measure.

Where lending agents are bank-owned and provide indemnities, OSFI guidelines require indemnities to be included in the calculation of banks' risk-weighted assets and exposure measures.

Liquidity requirements

OSFI's liquidity adequacy requirements currently include two measures: the liquidity coverage ratio (LCR) and the Net Cumulative Cash Flow (NCCF).¹⁰

The intent of the LCR is to improve the short-term funding profile of banks by requiring them to hold sufficient unencumbered high-quality liquid assets (HQLA) to cover net cash outflows over a 30-day stress period.

$$\frac{\text{HQLA}}{\text{Net cash outflows over the next 30 calendar days}} \geq 100\%$$

Assets that count as HQLA are primarily sovereign bonds, government-backed securities and high-quality private debt. HQLA that are held at a bank through a securities lending transaction, that have not been rehypothecated and that are permitted for reuse can be included in a bank's HQLA calculation.

Cash-collateralized securities lending transactions that mature within the 30-day stress horizon are included in net cash outflow since the second leg of the transaction requires a cash payment (by the security lender) and a receipt of cash (by the security borrower). For non-cash-collateralized transactions, the level of net cash flow depends on the difference in the quality of the assets being exchanged. There is a net cash outflow if a bank returns a higher-quality security for lower-quality collateral. Otherwise, there is no net cash outflow.

The NCCF is a supplementary measure developed by OSFI to monitor financial institutions' liquidity over a range of time horizons up to one year.

$$\text{NCCF} = \sum (\text{Inflows} - \text{Outflows})$$

The NCCF thus helps to bridge the gap between the one-month horizon of the LCR and one-year horizon of the NSFR. The NCCF's treatment of securities lending is like that of the LCR.

B-4 guideline

The B-4 guideline sets out minimum requirements for eligible collateral, internal controls, record keeping, minimum overcollateralization, use of lending agents and use of master agreements for regulated institutions' securities lending activities. **Table 3** summarizes acceptable collateral under B-4.

¹⁰ OSFI is also planning to implement the Net Stable Funding Ratio (NSFR) for January 2020. The NSFR is a weighted ratio that measures bank funding that is expected to be reliable for a 12-month period (i.e., Available Stable Funding [ASF]) over bank assets and off-balance sheet exposures (i.e., Required Stable Funding [RSF]).

$$\frac{\text{ASF}}{\text{RSF}} \geq 100\%$$

The weightings (or factors) for the components of ASF are based on the transaction's tenor, the type of funding and the type of counterparty, while RSF weights are based on the asset's quality and liquidity value, the type of counterparty and the tenor.

Reporting requirements

OSFI's balance sheet guidelines require financial institutions to submit a consolidated balance sheet monthly. The liabilities sections include a line for "obligations related to borrowed securities" under the "other liabilities" section.

Financial institutions must also report their securities lending activities to OSFI quarterly through the non-public H4—Collateral and Pledging Report.

Banks are also required to report their LCR calculations to OSFI; this report includes line items for certain types of securities lending transactions.

IIROC requirements

IIROC is the national self-regulatory body for Canadian investment dealers. IIROC (n.d.) sets minimum margin requirements for investment dealers to mitigate the risk of loss associated with a security if a dealer member's counterparty defaults or otherwise fails to return the dealer's own cash or securities. The amount of margin required depends on the collateral received by the dealer (e.g., Government of Canada collateral incurs lower margin than equity collateral) and the credit quality of the dealer's counterparty. If dealer members have an offsetting position, IIROC permits them to net their margin requirements.

Canadian Securities Administrators requirements

The Canadian Securities Administrators, the umbrella organization of provincial and territorial securities regulators, regulates securities lending by mutual funds and other publicly traded investment funds through National Instrument 81-102 (OSC 2014).

Key regulations affecting funds' securities lending activities include the following:

- Funds must maintain minimum overcollateralization equalling 102 percent of the value of loaned securities.
- Funds accept only prescribed forms of collateral (see **Table 3**).
- Collateral values must be marked to market daily.
- The securities lender must maintain the ability to terminate the loan at any time.
- Total securities financing activities (i.e., repo and securities lending) must not exceed 50 percent of a fund's total net asset value.
- Cash collateral can be reinvested only in instruments with a term to maturity of less than 90 days or in qualified reverse repos.
- Non-cash collateral must not be rehypothecated or sold.
- Funds must retain a lending agent to administer their securities lending activities.

Table 3 summarizes the acceptable collateral for mutual funds under the regulation.

Table 3: Comparison of allowable securities lending collateral for OSFI- and IIROC-regulated entities	
Allowable collateral for federally regulated financial institutions, under OSFI's B-4 guideline	Allowable collateral for IIROC-registered mutual funds and other funds, under National Instrument 81-102
<ul style="list-style-type: none"> • Cash • Widely traded debt instruments rated A or higher • Commercial paper rated A-1 or higher • Bankers' acceptances in which the writer's short-term deposits are rated A-1 or higher • High-quality common and preferred shares • Unconditional, irrevocable letters of credit issued by banks and trust and loan companies whose short-term deposits are rated A-1 or higher • Unconditional, irrevocable guarantees by banks and trust and loan companies whose short-term deposits are rated A-1 or higher 	<ul style="list-style-type: none"> • Cash • Securities issued by the Government of Canada or another government of a Canadian jurisdiction • US Treasuries and US state debt • Supranational agency or sovereign state rated A or higher • Debt issued by financial institutions rated A or higher • Commercial paper rated A-1 or higher with a term to maturity of less than 365 days • Letter of credit from a Canadian financial institution whose short-term debt is rated A or higher and who is not an affiliate of the counterparty or the investment fund

While a broad range of collateral is allowable under OSFI and CSA regulations, market participants have reported anecdotally that a much smaller set of collateral is commonly accepted, with Government of Canada securities being the most popular.

Appendices

A Securities lending terminology

Key securities lending terms	
Lender	The party to a transaction that provides securities, receives collateral and receives a fee
Borrower	The party to a transaction that receives securities, provides collateral and pays a fee. The borrower is the party that initiates the transaction.
Settlement date	The date of the initial exchange of securities and collateral
Maturity date	The date of the re-delivery of securities and collateral
Beneficial owner	The party entitled to the rights and risks of ownership in a security
Custodian (or custodian bank)	A financial institution that holds securities for its clients. Most custodians offer other services, such as transaction settlement, dividend and coupon collection, and securities lending (in which they act as a securities lending agent for the beneficial owner).
Lending agent	Lending agents arrange trades, perform due diligence on prospective borrowers, reinvest cash collateral, and manage all operational and administrative aspects of lending. Lending agents are typically custodian banks.
Lending pool	The consolidated pool of client securities that lending agents make available for loan to securities borrowers
Indemnity	A guarantee frequently provided to a beneficial owner by its lending agent. Although terms of indemnities vary, it is common for indemnities to protect the beneficial owner against a shortfall in collateral in the event that a borrower defaults.
Fee	The compensation paid by the borrower of securities to the lender when the borrower provides non-cash collateral
Rebate	The rate of interest paid by the lender of securities to a borrower when the borrower provides cash collateral. The rebate is inversely related to the demand for the securities (i.e., the lender pays a lower rate of interest on cash collateral received when the securities it lends are in high demand). The rebate is like the interest paid by a cash borrower in a repo transaction.

Reinvestment return	The return a securities lender and its lending agent receive from reinvesting cash collateral they receive from a securities borrower
Overcollateralization	The excess value of the collateral over the value of the borrowed securities. Overcollateralization is always in favour of the lender, even when cash is provided as collateral.
Equivalent securities/collateral	Securities that are identical in nominal value and description, i.e., with the same security identifier, such as an International Securities Identification Number (ISIN) or a Committee on Uniform Security Identification Procedures (CUSIP) number. At the termination of a securities loan, the securities returned to the lender and the collateral returned to the borrower must be equivalent to those originally provided.
Principal intermediary	A party that borrows a security with the intention to on-lend it to a client, rather than borrowing for its own needs

B Balance sheet treatment

This appendix provides first an example of the balance sheet impact of securities lending transactions collateralized with cash and then an example of those collateralized with securities.¹¹

For the following two examples, it is assumed that two counterparties have balance sheets that appear initially as presented below. Also, it is assumed that the transactions are structured as secured borrowings or loans rather than asset sales.

Initial lender and borrower balance sheets

Counterparty A (Lender)				Counterparty B (Borrower)			
Assets (\$ millions)		Liabilities (\$ millions)		Assets (\$ millions)		Liabilities (\$ millions)	
Investments	90	Retained earnings	100	Investments	60	Retained earnings	100
Cash	10			Cash	40		
	100		100		100		100

Securities lending transactions collateralized with cash

The following example outlines the balance sheet effects where \$10 million worth of securities are borrowed and an equivalent amount of cash is posted as collateral.

The accounting for this transaction can cause confusion due to differences in the terminology used by accounting standards and by various market participants. While market participants consider the cash to be collateral, accounting standards treat the cash collateral as proceeds from a secured borrowing, and the borrowed securities are treated as collateral.

On the trade date (i.e., the day the lender lends the securities to the borrower), the securities are deducted from “investments” on the lender’s balance sheet and transferred into “collateral pledged.” The lender’s cash account increases by \$10 million to recognize the receipt of cash, but a liability is also created for \$10 million because the lender must return the cash to the borrower on maturity of the transaction.

From the perspective of the borrower, on the trade date, its cash account declines by \$10 million and a corresponding receivable from the lender is created. Although the borrower has absolute title of the borrowed securities, it does not recognize their receipt on its balance sheet because they are treated as collateral, and economically, the risk and reward of the borrowed securities remain with the lender.

¹¹ The balance sheet treatment of securities lending outlined in this section is adapted from Pricewaterhouse Coopers (2013).

Lender				Borrower			
<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>		<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>	
Investments	80 (↓10)	Retained earnings	100	Investments	60	Retained earnings	100
Cash	20 (↑10)	Cash payable under securities loan agreement	10 (↑10)	Cash	30 (↓10)		
Collateral pledged	10 (↑10)			Cash receivable under securities loan agreement	10 (↑10)		
	110 (↑10)		110 (↑10)		100		100

The borrowed securities appear on the borrower's balance sheet only once they are sold or rehypothecated. Assume the borrower sells the borrowed securities to a third party. The borrower's cash account increases by \$10 million, reflecting the proceeds of the sale, while an "obligation to return borrowed securities" liability is created reflecting the fact that the borrower must return the sold securities to the lender at the end of the transaction.

Borrower			
<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>	
Investments	60	Retained earnings	100
Cash	40 (↑10)	Obligation to return borrowed securities	10 (↑10)
Cash receivable under securities loan agreement	10		
	110		110

Securities lending transactions collateralized with securities

The following example outlines the balance sheet effects when \$10 million worth of securities are borrowed in exchange and an equivalent amount of securities (called "fungible securities" for clarity) are

posted as collateral; for simplicity, it is assumed there is no overcollateralization. It is also assumed the lender has rehypothecation rights for the collateral it receives. While market participants treat the fungible securities as collateral held by the lender, accounting standards treat them as the proceeds and the lent securities as collateral pledged by the lender. As in the cash-collateralized case, on the trade date, the securities are deducted from “investments” on the lender’s balance sheet and transferred into “collateral pledged.” Because the lender has rehypothecation rights to the fungible securities (the proceeds under accounting standards), it records an increase to its “investment account” and creates an obligation to return the fungible securities as “securities lent payable” under its liabilities.

If the lender does not have rehypothecation rights, as is typically the case in Canada, it does not recognize the collateral securities on its balance sheet.

On the trade date, the borrower does not make any entries on its balance sheet. As in the cash-collateralized case, it does not recognize receipt of the borrowed securities.

Lender				Borrower			
<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>		<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>	
Investments	80 (↑10, ↓10)	Retained earnings	100	Investments	60	Retained earnings	100
Cash	10	Securities lent payable	10 (↑10)	Cash	40		
Collateral pledged	10 (↑10)						
	110		110		100		100

As in the previous example, the borrowed securities appear on the borrower’s balance sheet only once they are sold or rehypothecated. Once this occurs, the borrower’s cash account increases by \$10 million to reflect the proceeds of the sale, while an “obligation to return securities” liability is created to reflect the fact that the borrower must return the sold securities to the lender at the end of the transaction.

Borrower			
<u>Assets (\$ millions)</u>		<u>Liabilities (\$ millions)</u>	
Investments	60	Retained earnings	100
Cash	50 (↑10)	Obligation to return securities	10 (↑10)
	110		110

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