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Non-Bank Financial Intermediation in Canada: An Update

by Guillaume Bédard-Pagé

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Non-Bank Financial Intermediation in Canada: An Update

by

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This paper is the fourth in a series about non-bank financial intermediation published by staff from the Bank of Canada. The other papers in the series are

1. Emerging from the Shadows: Market-Based Financing in Canada by James Chapman, Stéphane Lavoie and Lawrence Schembri, Bank of Canada *Financial System Review*, June 2011
2. Monitoring and Assessing Risks in Canada's Shadow Banking Sector by Toni Gravelle, Timothy Grieder and Stéphane Lavoie, Bank of Canada *Financial System Review*, June 2013
3. Monitoring Shadow Banking in Canada: A Hybrid Approach, Bo Young Chang, Michael Januska, Gitanjali Kumar and André Usche, Bank of Canada *Financial System Review*, December 2016

Abstract

Non-bank financing provides an important funding source for the economy and is a valuable alternative to traditional banking. It helps enhance the efficiency and resiliency of the financial system while giving customers more choices for their financial services. Unlike banking, it is not prudentially regulated. The Bank of Canada regularly monitors entities and activities classified in non-bank financial intermediation, particularly those that involve a material degree of maturity, liquidity and credit transformation, a potential source of systemic risk. In this paper, we provide an update of our monitoring in this area, including insights obtained from new data sources.

Bank topics: Financial markets; Financial Institutions; Financial stability
JEL codes: G, G0, G01, G2, G20, G23

Résumé

L'intermédiation financière non bancaire, source de financement importante pour l'économie, est une solution de rechange utile au système bancaire traditionnel. Elle contribue à accroître l'efficience et la résilience du système financier tout en offrant plus de choix aux consommateurs en matière de services financiers. Contrairement au secteur bancaire, elle n'est pas assujettie à une réglementation prudentielle. La Banque du Canada surveille régulièrement les entités et les activités dites d'intermédiation financière non bancaire, qui peuvent présenter une source de risque systémique, surtout celles qui comprennent un important degré de transformation des échéances, de la liquidité et du crédit. Dans cette étude, nous synthétisons l'information découlant de nos activités de surveillance et tirons des observations de nouvelles sources de données.

Sujet : Marchés financiers; Institutions Financières; Stabilité financière
Codes JEL : G, G0, G1, G2, G20, G23

1. Introduction

The term "non-bank financial intermediation" (NBFI) is used to describe bank-like credit intermediation activities taking place, at least partly, outside the traditional banking system. [1] NBFI is an important funding source for the economy, provides a valuable alternative to traditional banking and helps enhance the efficiency and resiliency of the financial system. However, it also has the potential to increase financial sector vulnerabilities since, unlike banking, it is not prudentially regulated.

NBFI can involve a material degree of maturity, liquidity and credit transformation, a potential source of systemic risk. The most recent global financial crisis showed that systemic risk can build up where it is difficult to observe and when there are opportunities for regulatory arbitrage. The Bank of Canada therefore regularly monitors the Canadian financial system for unintended effects of regulatory efforts that can provide incentive for the migration of bank-like credit intermediation toward NBFI.

This paper provides an update on key trends and potential vulnerabilities in Canada's NBFI.[2] Section 2 defines NBFI and the entities and activities that are within its scope. Section 3 updates our monitoring in this area, including insights derived from new data on securities financing transactions and private lenders. Section 4 discusses financial system innovations that fit the Bank's definition of NBFI and warrant continued monitoring. Section 5 concludes.

2. Definition and coverage

The Bank of Canada defines NBFI as entities and markets that

- conduct or facilitate a chain of credit intermediation,[3]
- involve a material degree of maturity or liquidity transformation, and
- are at least partly outside the regulatory perimeter of prudential regulation.

The Bank considers both entities and markets for two reasons:

(i) The markets in which entities participate can be opaque.
(ii) Some NBFI activities can be conducted off balance sheet or through entities that do not disclose detailed balance sheet information.

This hybrid approach is flexible, thus enabling us to capture changes in the ever-evolving NBFI sector.

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[1] The traditional banking system is defined as prudentially regulated deposit-taking institutions; it generally includes federally and provincially regulated deposit-taking institutions, such as banks, trust companies and credit unions. In previous Bank of Canada publications, we used the term "shadow banking." Consistent with the change in terminology at the Financial Stability Board, we now use the term "non-bank financial intermediation." The change in terminology did not affect the substance of our monitoring framework nor the nature of the activities and entities in its scope. This monitoring update relies on the definition set forth by Chang et al. (2016).

[2] See Chapman, Lavoie and Schembri (2011); Gravelle, Grieder and Lavoie (2013); and Chang et al. (2016) for previous monitoring studies undertaken by the Bank of Canada.

[3] Credit intermediation refers to the economic activity of channelling funds from lenders to borrowers by intermediating financial institutions.

Table 1 summarizes the five major categories of NBFI entities and activities covered by our monitoring framework: investment funds, securities financing transactions, independent investment dealers, private-label securitization and unregulated lenders. Our hybrid approach creates some overlap between entities and the activities they undertake, but it provides a conservative estimate of NBFI that uses varying degrees of maturity, liquidity and credit transformation.[4]

Table 1: Summary of Canadian NBFI entities and activities

Category	Entities/Activities	Characteristics
Investment funds	• Money market mutual funds • Fixed-income and alternative-strategy mutual funds • Fixed-income and synthetic exchange-traded funds • Credit hedge funds • Credit pooled funds	Investment funds engage in liquidity and maturity transformation by purchasing less-liquid assets with longer maturities, while offering investors the ability to redeem shares with a short notice.
Securities financing transactions	• Repurchase agreement transactions with one non-prudentially regulated counterparty • Securities lending transactions with one non-prudentially regulated counterparty	Repurchase agreements and securities lending transactions are susceptible to runs, particularly when there is a significant amount of collateral transformation. These transactions can also facilitate the buildup of leverage and lead to asset fire sales if they unexpectedly unwind.
Non-bank investment dealers	• Independent investment dealers that are not owned by prudentially regulated deposit-taking institutions	Non-bank investment dealers usually finance their activities through the wholesale market. They use a significant amount of leverage.
Private-label securitization	• Commercial mortgage-backed securities • Asset-backed securities • Asset-backed commercial paper • Private residential mortgage-backed securities	Securitization facilitates a chain of credit intermediation and can include a material degree of liquidity and maturity transformation.
Private lenders	• Mortgage finance companies • Mortgage investment corporations • Transportation leasing • Business leasing • Consumer lending • Other finance companies	Private lenders provide loans outside the prudentially regulated sector. They generally have internal underwriting capabilities and obtain funding through securitization and other market-based financial instruments. They use varying degrees of leverage.

[4] For example, an investment fund that engages in securities financing transactions or a private lender that securitizes loans. As data continue to improve, the amount of double counting in our estimate will decrease.

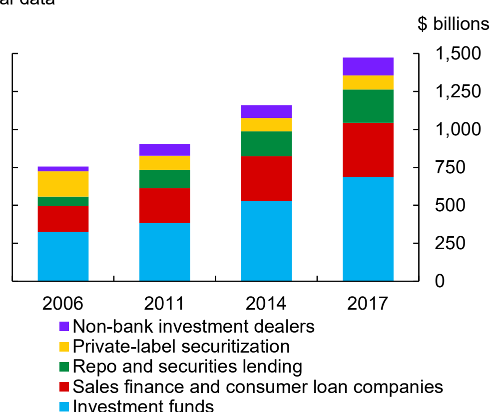
3. Overview of Canadian NBFI

Canadian NBFI was estimated at close to $1.5 trillion at the end of 2017, a 30 per cent increase from the $1.1 trillion estimate for 2015 year-end published in the December 2016 *Financial System Review*. Although overall NBFI assets have grown steadily since the global financial crisis (**Chart 1**), the sector has remained stable as a share of total financial system assets and has declined relative to deposit-taking institutions (**Chart 2**). **Chart 3** shows that investment funds, private lenders and securities financing transactions constitute the majority of NBFI.

However, size alone is insufficient to perform a thorough assessment of potential financial vulnerabilities; the relative stability of NBFI assets compared with the overall Canadian financial system masks important changes in composition. The non-bank-sponsored asset-backed commercial paper (ABCP) market, which invested mainly in complex credit derivatives, contracted substantially after experiencing severe disruptions in the summer of 2007. The decline in this sector was counterbalanced by strong growth in investment funds, securities financing transactions and private lending (**Chart 4**).[5] The following sections discuss each subsector and their associated vulnerabilities in more detail.

Chart 1: Since 2006, the Canadian NBFI sector has grown by 1.7 times

Annual data

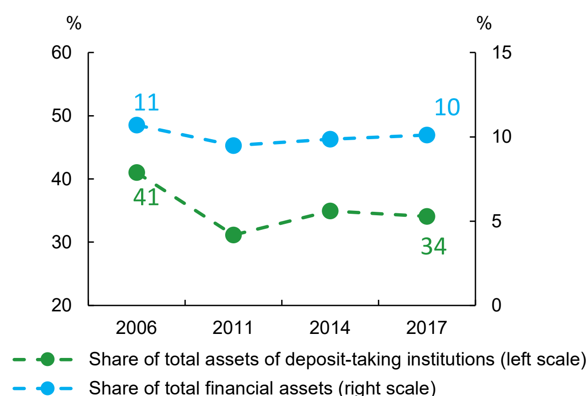


Sources: DBRS, Markit, Morningstar, Ontario Securities Commission, Statistics Canada and Bank of Canada calculations

Last observation: 2017

Chart 2: Despite strong growth in NBFI assets, their share relative to bank assets has declined

Annual data



Sources: DBRS, Markit, Morningstar, Ontario Securities Commission, Statistics Canada and Bank of Canada calculations

Last observation: 2017

[5] Our NBFI definition is different than the one used by the Financial Stability Board. We exclude mixed funds on the basis that the amount of liquidity transformation within these funds is low; they hold a wide variety of liquid assets (e.g., cash, government bonds, equities) that can be sold to meet redemption requests. Private mortgage insurers are also excluded given that they are subject to comprehensive risk-based prudential regulation. On the other hand, we include securities financing transactions with one non-prudentially regulated counterparty, as they are liable to runs when investing borrowed cash or reinvesting cash collateral involves significant maturity or liquidity transformation.

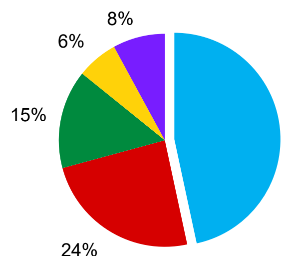
Despite these differences, the key trends discussed in this paper are broadly consistent with global developments discussed in the 2018 *Global Monitoring Report on Non-Bank Financial Intermediation* (Financial Stability Board 2019).

Chart 3: In 2017, investment funds and private lenders totalled 71 per cent of NBFI

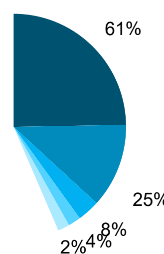
Annual data

a. All subsectors

- Investment funds
- Sales finance and consumer loan companies (private lenders)
- Repo and securities lending (securities financing transactions)
- Private-label securitization
- Non-bank investment dealers



b. Investment funds subsector



- Mutual funds (fixed-income and alternative strategy)
- Credit pooled funds
- Exchange-traded funds (fixed-income and synthetic)
- Money market funds
- Credit hedge funds

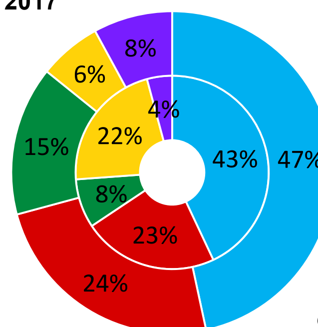
Sources: DBRS, Markit, Morningstar, Ontario Securities Commission, regulatory filings of Canadian banks, Statistics Canada and Bank of Canada calculations

Last observation: 2017

Chart 4: The composition of NBFI shifted between 2006 to 2017

Annual data

- Investment funds
- Sales finance and consumer loan companies (private lenders)
- Repo and securities lending (securities financing transactions)
- Private-label securitization
- Non-bank investment dealers



Inner rim: 2006
Outer rim: 2017

Sources: DBRS, Markit, Morningstar, Ontario Securities Commission, regulatory filings of Canadian banks, Statistics Canada and Bank of Canada calculations

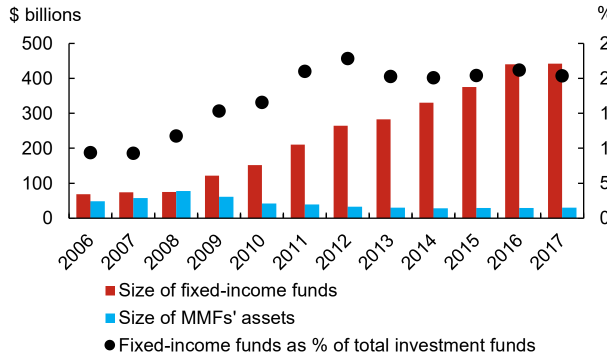
Investment funds continue to increase their footprint

Assets managed by investment funds have continued to grow strongly in Canada since the global financial crisis, a trend also present in other countries. A significant portion of this growth has taken place in funds that have more liquidity transformation, such as fixed-income funds. Since 2009, fixed-income funds' assets under management have increased fourfold, and their share of Canadian mutual fund assets has roughly doubled (**Chart 5**). Over the same period, Canadian fixed-income and synthetic exchange-traded funds (ETFs) have also grown substantially, reflecting the demand from retail and institutional investors for low-cost, index-based products with high perceived secondary market liquidity (**Chart 6**). The growth in these two sectors stands in sharp contrast with the decline in assets managed by money market funds (MMFs). Credit hedge funds and credit pooled funds[6] are also becoming more active participants in Canadian fixed-income markets (**Chart 7**). Credit hedge funds actively use the repo market to finance their inventory of corporate bonds and other credit instruments, which could make them vulnerable to run-like behaviour in the secured funding market.

[6] Hedge funds and pooled funds are exempt from filing a prospectus by satisfying the requirements set by the Canadian Securities Administrators in National Instrument 45-106 Prospectus Exemptions. These vehicles are restricted to accredited investors such as institutions and high-net-worth individuals. Hedge funds typically do not offer daily redemptions and often require an initial lock-up period, whereas pooled funds typically offer short-term redemptions on daily or weekly notice. Pooled funds employ little leverage and use strategies like those of mutual funds, while hedge funds employ alternative strategies, often using leverage. Credit hedge funds and credit pooled funds have gross exposures of more than 20 per cent to credit instruments (e.g., bonds, loans and structured or securitized fixed-income securities).

Chart 5: Fixed-income funds have grown fast while MMFs have contracted

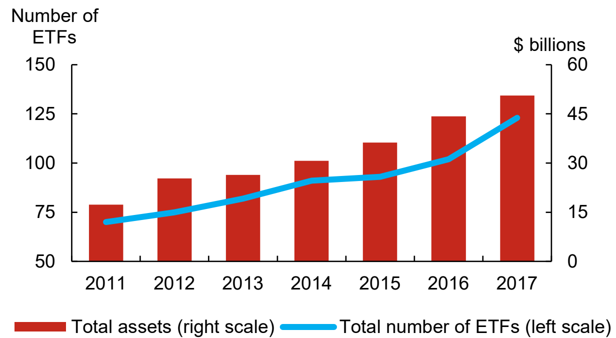
Annual data



Source: Statistics Canada using Morningstar   Last observation: 2017

Chart 6: Fixed-income and alternative ETF assets have tripled since 2011

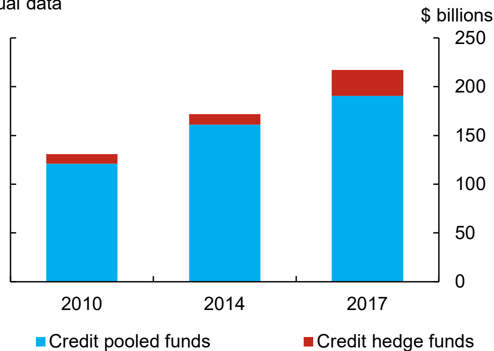
Annual data



Source: Statistics Canada using Morningstar   Last observation: 2017

Chart 7: Credit hedge funds and pooled funds have been growing steadily post-crisis

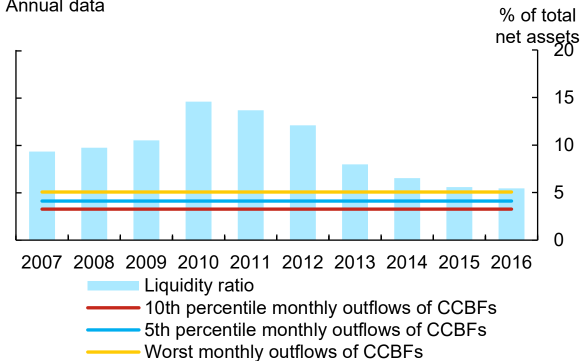
Annual data



Source: Ontario Securities Commission   Last observation: 2017

Chart 8: The average liquidity ratio of CCBFs

Annual data



Sources: Morningstar and Bank of Canada   Last observation: 2016

Recent work undertaken at the Bank shows that Canadian corporate bond mutual funds (CCBFs), which are an important subset of the Canadian fixed-income mutual fund universe, have been increasing their exposure to credit and interest rate risks since the crisis. Moreover, CCBFs have been reducing their liquidity buffers, raising concerns about their ability to meet potentially large redemption requests (**Chart 8**).[7] CCBFs are more vulnerable than other funds because of the liquidity mismatch between their assets and liabilities: the funds offer daily redemption to investors, yet they invest in relatively less-liquid assets (corporate bonds). Given that fund performance is an important driver of redemptions, exposure to higher market risk could increase the likelihood for CCBFs to experience large outflows during a pronounced market downturn.[8] Combined with the rising footprint and leverage of private pools of capital (e.g., credit hedge funds and pooled funds) and uncertainties around the resilience of fixed-income ETFs, investment funds could play a greater role than before in the amplification and propagation of shocks to the financial system. Enhanced transparency and consistent implementation of the policy recommendations made by the Financial Stability Board to address structural vulnerabilities from asset management activities should help alleviate concerns and promote resilience in this sector.[9]

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[7] Liquid assets consist of cash and equivalents, money market securities and high-quality government securities. Monthly outflows were estimated over the 2002–16 period. See Arora, Merali and Ouellet Leblanc (2018).

[8] See Arora (2018).

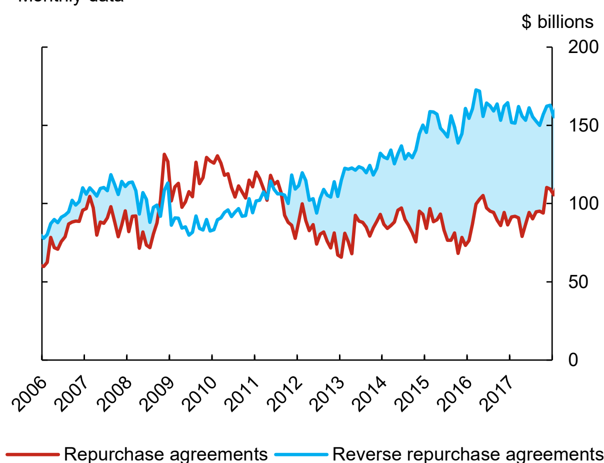
[9] See Financial Stability Board (2017).

Growth in securities financing transactions has been driven by securities lending activities

Previously, the Bank of Canada did not have detailed transaction-level data to identify counterparties and the type of collateral used in repo markets. Therefore, the Bank tended to overestimate the amount of securities financing transactions under NBFI because it included both interbank repos (which *should not* be included) and non-interbank repos, i.e., repos where one counterparty is not prudentially regulated (which *should* be included). New data obtained through the Market Trade Reporting System (MTRS) 2.0 help refine the estimate and monitor risks in this space (**Box 1**).[10]

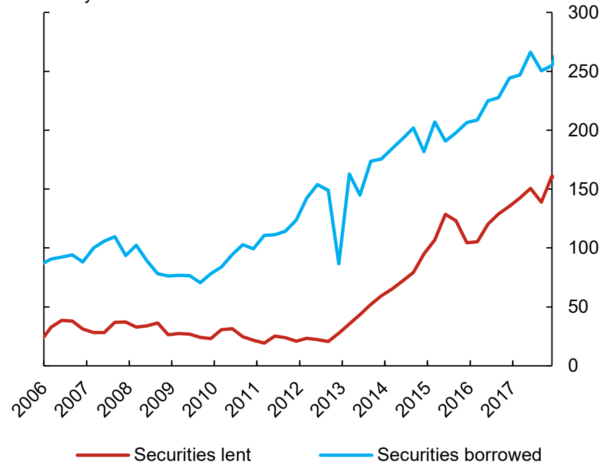
MTRS 2.0 data suggest the net repo position of domestic banks is a good approximation for the amount that should be included in our NBFI estimate. For this report, we use banks' net repo lending in Canadian dollars to proxy the amount that should be included in our NBFI estimate (**Chart 9**, shaded area). Domestic banks have been net cash lenders in the repo market since 2011, with their net lending position standing at roughly $60 billion at the end of 2017. The repo market is an important source of funding liquidity and leverage for some of the big Canadian public pension funds and credit hedge funds.[11] Potential credit and funding liquidity risks in the Canadian repo market are mitigated by the fact that most collateral consists of government securities.

Chart 9: Since 2011, domestic banks have been net lenders in the repo market
Monthly data



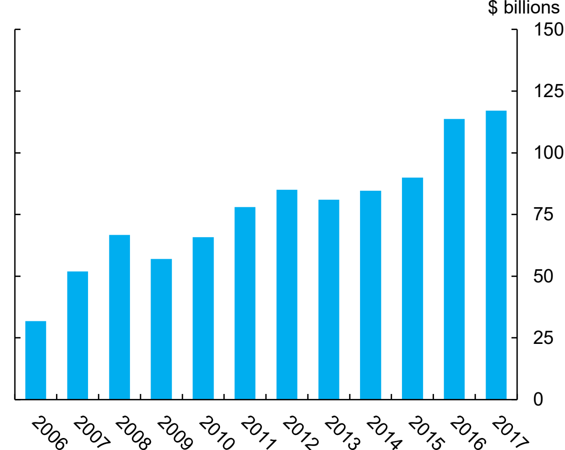
Source: Banks' regulatory filings
Last observation: December 2017

Chart 10: DSIBs' securities lending activity keeps increasing
Quarterly



Source: Banks' regulatory filings
Last observation: 2017

Chart 11: Non-bank broker-dealers have expanded since 2015
Annual data



Source: Statistics Canada
Last observation: 2017

[10] Once legal entity identifiers are available in MTRS 2.0, our estimate will likely decline further as we reduce double counting with investment funds.

[11] See Bédard-Pagé et al. (2016).

In parallel to developments in the repo market, the size of the securities lending market continues to increase (**Chart 10**). Securities borrowed are generally used to take short positions in the bond market and to upgrade collateral as part of funding arrangements. Canadian domestic systemically important banks (DSIBs) have significantly increased net securities borrowed since 2009, partly because of the activity's favourable balance sheet treatment.[12] A new Collateral and Pledging Report should soon enable us to more precisely estimate the share of securities lending activities that involve a material amount of liquidity transformation. [13]

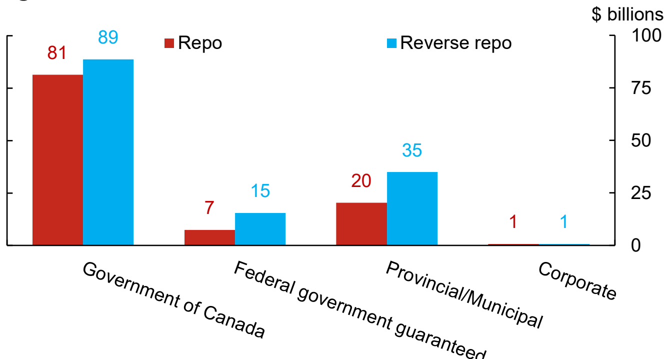
Box 1: Enhanced repo monitoring with MTRS 2.0

The Market Trade Reporting System 2.0 allows the Bank of Canada to track the daily repo exposures of major Canadian broker-dealers, by counterparty and security. It includes information on all over-the-counter debt market transactions executed by reporting dealer members (RDMs) in both the repo and the cash markets.

The Bank's measurement of non-bank financial intermediation (NBFI) includes only repos in which one counterparty is not subject to prudential regulation. This activity can be estimated by considering non-interbank repo transactions, i.e., repo transactions between prudentially regulated RDMs (PR RDMs) and non-prudentially regulated (NPR) counterparties. The most common type of repo activity between PR RDMs and NPR counterparties is collateralized by Government of Canada (GoC) securities. Currently, non-interbank repo and reverse repo exposures stand at around $80 billion and $90 billion, respectively (**Chart 1-A**). PR RDMs are therefore acting as net lenders of cash against GoC collateral, for an amount of around $10 billion. NBFI activity in repo markets involving non-GoC collateral guaranteed by the federal government (mostly Canada Mortgage Bonds and *National Housing Act* mortgage-backed securities) and provincial and municipal debt collateral is also sizable. PR RDMs are net cash lenders to NPR entities in both markets. NBFI repo exposures involving corporate bond collateral is marginal in Canada.

For all three types of non-GoC collateral repo exposures considered NBFI, outstanding amounts are substantially larger than those observed between PR counterparties. This suggests that, on average, more liquidity transformation is involved when a non-regulated entity is counterparty to a Canadian repo transaction.

Chart 1-A: Broker-dealers are net cash lenders with non-prudentially regulated counterparties against government collateral



Sources: MTRS 2.0 and TRITON

Last observation: July 31, 2018

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[12] Under International Financial Reporting Standards, only securities lending transactions executed against cash collateral are reported on participants' balance sheets. For more details, see Garriott and Gray (2016).

[13] See Collateral and Pledging Report (H4).

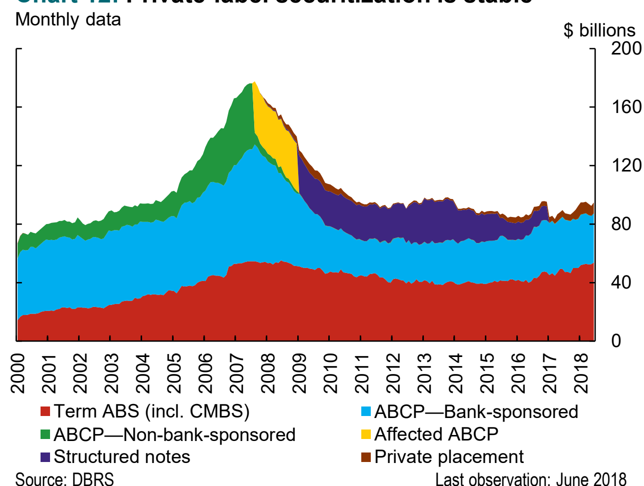
Non-bank investment dealers’ leverage has increased in recent years

Non-bank dealers continue to grow; assets in the sector have more than doubled since 2007, reaching $117 billion at the end of 2017 (**Chart 11**). Leverage for non-bank dealers, measured as total financial assets divided by equity, increased to a post-crisis high of 19.4 in 2016 before coming down to 18.4 at the end of 2017. While there can be substantial volatility in year-over-year growth rates, this sector generally remains well capitalized and maintains a strong liquidity position.

Private-label securitization remains stable

The size of the Canadian private-label securitization market has remained relatively stable since 2010. Currently it stands at about $95 billion (**Chart 12**). All the structured notes from the Montreal Accord have matured, and the market is now dominated by term asset-backed securities (backed mostly by credit cards) and bank-sponsored asset-backed commercial paper (with mortgages and auto financing being the main underlying assets). The market also saw new issuances of private residential mortgage-backed securities (RMBS) (**Box 2**).

Chart 12: Private-label securitization is stable



Source: DBRS

Last observation: June 2018

Box 2: The development of a private-label Canadian RMBS market

Investor interest in the development of a Canadian residential mortgage-backed securities (RMBS) market has been reinvigorated by policies enacted by the Government of Canada to reduce its exposure to the housing market. To date, private-label securitizations of Canadian residential mortgages have been limited to short-term asset-backed commercial paper and sporadic issuances of longer-term RMBS (for a more detailed discussion, see Mordel and Stephens 2015).

There are several potential impediments to the development of a private RMBS market. Large deposit-taking institutions have access to cheaper funding sources (deposit notes, guaranteed investment certificates and covered bonds), and smaller institutions may not have enough scale to securitize potentially riskier uninsured mortgages. Canadian investors lack experience valuing monthly pass-through securities because of the lack of granular historical data. Additionally, recent private RMBS issuances had limited size and did not offer a significant yield enhancement relative to other alternatives.

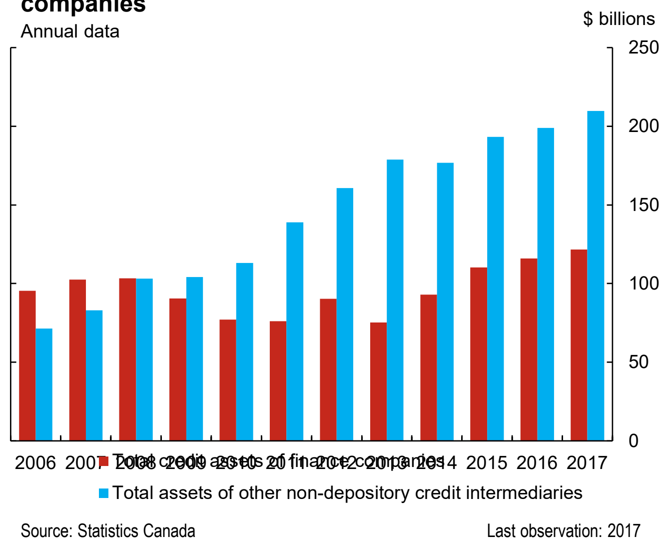
Several avenues could nonetheless be explored by the industry to stimulate the development of a private RMBS market. Among the most important factors, enhanced disclosure requirements would make the underlying collateral transparent and including historical data on mortgage performance would enable investors to make informed investment decisions. Other factors that could support market liquidity include standardization of security and pool structures, sufficient coverage from public rating agencies, inclusion in investment indexes, and favourable regulatory treatment (e.g., high-quality liquid asset qualification under the liquidity coverage ratio, eligible collateral in the repo market, etc.). For more details, see Canadian Fixed-Income Forum (2018).

Steady growth for lenders that are not prudentially regulated

Since the global financial crisis, private lenders have seen strong growth (**Chart 13**). Private lenders can be broadly mapped to two sectors of the National Balance Sheet Accounts (NBSA): *Finance companies* and *Other non-depository credit intermediaries*. *Finance companies* is composed of sales financing and consumer lending (such as credit cards issued outside the prudentially regulated financial sector).[14] *Other non-depository credit intermediaries* comprises establishments not classified in any other industry, primarily engaged in making cash loans or granting credit to consumers and businesses through credit instruments other than credit cards, sales finance agreements or financial leases.[15] *Other non-depository credit intermediaries* would typically include financial institutions such as mortgage finance companies (MFCs) and mortgage investment corporations (MICs), although, until recently, these institutions could be classified inconsistently in the NBSA.[16]

While both sectors include entities with vastly different business models, our conservative measurement approach has led us to include the total assets reported by both sectors in our NBFI estimate, including entities that should not be included in NBFI (**Chart 13**). Efforts to improve the granularity and quality of data on private lenders are underway. In December 2018, Statistics Canada released a new NBFI economic account that sheds light on the activities of four types of private lenders: MFCs, MICs, consumer and business transportation leasing companies, and other (business) leasing companies. Future extensions of the account will allow us to further refine our measure of private lenders' activities included in the NBFI sector (**Box 3**).[17]

Chart 13: Non-depository credit intermediaries have significantly outpaced the growth of finance companies



The rest of this section discusses insights obtained from these new data for MFCs, MICs and the leasing industry.

[14] Sales finance companies are in the business of financing the purchase of goods and services at the industrial, wholesale and retail levels. Their lending activities include providing term loans to companies and financing leased equipment and machinery. Consumer loan companies specialize in direct lending to individuals, normally secured by promissory notes or on the security of mortgages on the goods purchased.

[15] Examples are consumer credit, real estate credit, international trade financing, inventory financing and agricultural credit and loans.

[16] Financial institutions self-identify their sector of activity when reporting to Statistics Canada. In addition to *Other non-depository credit intermediaries*, MICs were found in *Mortgage and non-mortgage brokers*, *Mortgage funds* and *Miscellaneous intermediation.*

[17] See Statistics Canada (2018) for more details.

Box 3: Statistics Canada's non-bank financial intermediation economic account

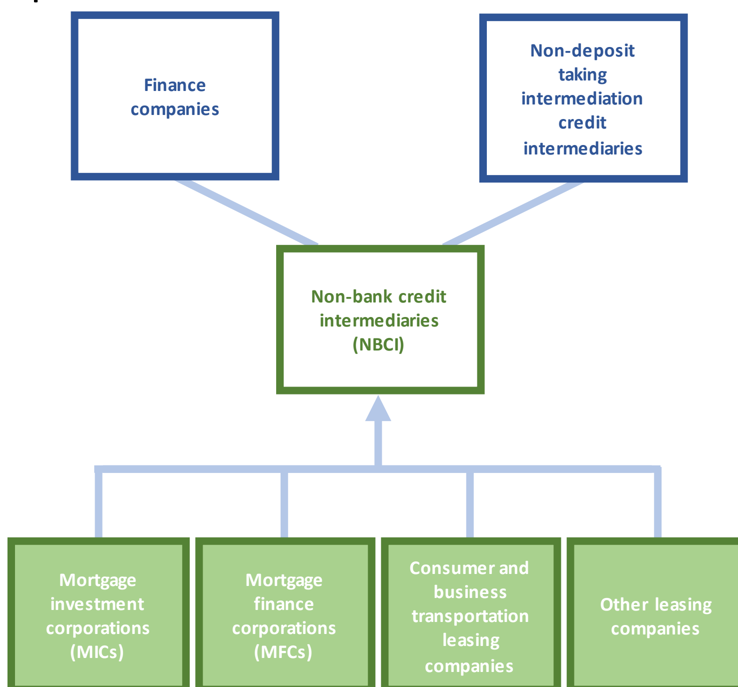
The International Monetary Fund issued 20 recommendations to address data gaps identified after the global financial crisis. One objective, known as Phase 2 of the Data Gaps Initiative (DGI-2), is to improve data granularity for non-deposit-taking and non-regulated credit intermediaries.

On December 14, Statistics Canada complemented its quarterly National Balance Sheet Accounts (NBSA) release with annual balance sheet estimates for a subset of non-bank financial intermediation (NBFI) that engages in sales financing and consumer lending, referred to collectively as non-bank credit intermediaries (NBCIs). This subclass includes mortgage investment corporations, mortgage finance corporations, transportation leasing companies and other (business) leasing companies. Those sectors were prioritized because of anecdotal evidence of their expanding footprint in residential mortgage and consumer credit.

This was accomplished by reclassifying entities from existing institutional sectors already present in the NBSA to a new set of subsectors aligned with Statistics Canada's classification of NBFI (**Figure 3-A**). The economic account closely follows the NBSA's classification of financial instruments, for assets and liabilities, providing a clearer understanding of the activities of non-bank financial institutions in Canada and their interconnectedness within the financial system. Annual estimates covering the 2007–17 period are available. Estimates for new reference years will be released concurrently with the third-quarter release of the NBSA, and revisions will be published biannually with the first- and third-quarter release of the NBSA.

A future release is expected to add new subsectors to complete the current NBFI framework: private consumer lending, investment funds (including exchange-traded funds), real estate investment trusts and private-label securitization.

Figure 3-A: Graphical representation of Statistics Canada's NBCI economic account

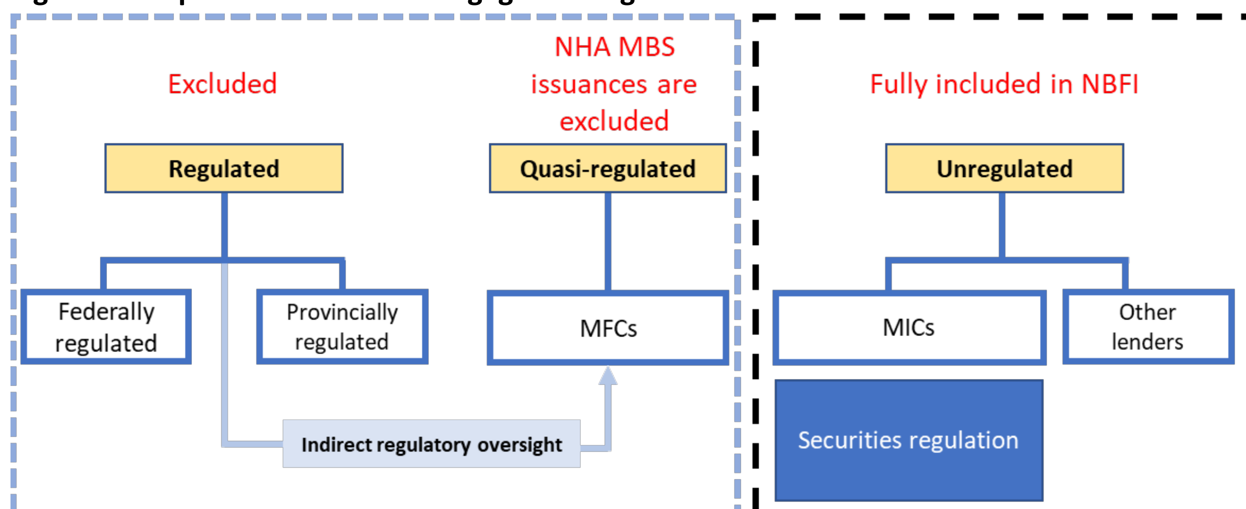


Mortgage finance companies and mortgage investment corporations

In response to concerns around elevated levels of household debt and housing market imbalances in Canada, a number of measures have been implemented to ensure that mortgage lenders adopt prudent lending practices.[18] However, these changes can motivate the migration of bank-like credit intermediation toward the NBFI sector, shifting some of the risks outside the direct purview of supervisors and regulators.

Mortgage underwriting taking place at institutions that are not directly subject to prudential regulation or supervision generally falls within two types of entities: MFCs and MICs (for more details on business models, see **Box 4**). MFCs are not directly prudentially regulated. However, they are indirectly subject to guidelines B-20 and B-21 published by the Office of the Superintendent of Financial Institutions because the majority of mortgages they underwrite end up insured and either securitized through *National Housing Act* mortgage-backed securities (NHA MBS) or Canada Mortgage Bonds commercial mortgage-backed securities programs or sold to federally regulated lenders (**Figure 1**). Consequently, to estimate the dollar amount of MFC activities included in our NBFI estimate, we exclude NHA MBS issued by MFCs from the total assets reported by the industry.[19] The remaining assets that are funded by equity or other funding sources are considered in scope, including mortgages temporarily warehoused before they are sold directly to third-party investors. Other mortgage underwriters issuing uninsured or non-conforming mortgages (e.g., MICs) that operate outside the purview of any prudential supervision are included in our NBFI estimate.

Figure 1: Scope of residential mortgage lending included in NBFI[20]



Since the global financial crisis, MFCs have expanded quickly, driven by an efficient business model that is technologically competitive (**Chart 14**). The MFC structure is vulnerable to financial distress for three

[18] For an overview of recent changes to housing finance policies and their estimated impact, see Bilyk and teNyenhuis (2018).

[19] Mortgages serviced by MFCs for a third party are also out of scope. These mortgages are usually reported by MFCs as "assets under administration," but they are recognized on a third party's balance sheet.

[20] This figure was adapted from CHMC (2016). The "other lenders" category includes corporations, individuals and other entities that offer mortgages. These entities are not subject to prudential supervision and regulation.

reasons: (i) MFC's lend disproportionately more to more vulnerable households; (ii) they have lower levels of capital and contingent liquidity; and (iii) they have more highly concentrated funding sources. Their originate-to-sell model uses a significant amount of leverage, with more than 50 times equity (**Chart 15**), leaving them less able to manage liquidity and other operational risks following a significant increase in defaults.[21] Moreover, MFCs play a large role in the NHA MBS securitization market and are interconnected with banks; therefore, any shocks in MFCs can quickly translate to disruptions in the nation's mortgage market.

Recent changes in housing finance rules, including restrictions on the use of portfolio insurance and increases in mortgage insurance premiums, have significantly affected the competitive position of MFCs. Entities in this space are now exploring alternative funding sources, including private-label RMBS. They have also started to foray into the non-conventional mortgage market, competing with smaller banks and private lenders.

Chart 14: MFCs' total assets and mortgages have overtaken MICs' since 2010
Annual data

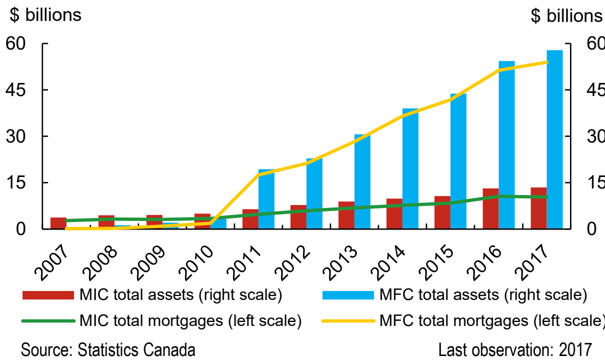
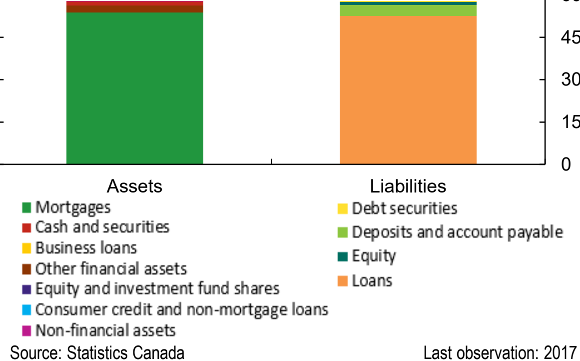


Chart 15: MFCs' mortgages are funded through loans (NHA MBS)
2017 data



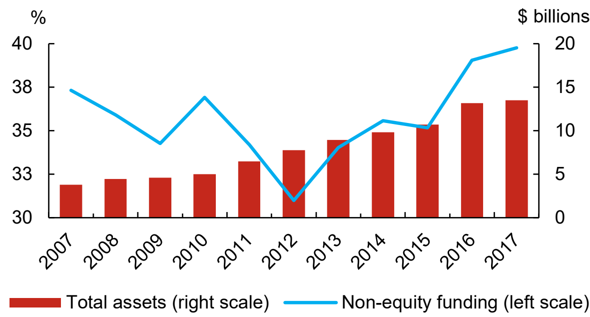
The MICs industry more than quadrupled in a decade, increasing from $3 billion to $13.5 billion in total assets between 2007 and 2017 (**Chart 14**). As a result, MICs' mortgage lending has steadily increased, reaching $10 billion in 2017. The growth in the sector was consistent and driven by existing entities growing larger, not by new entrants. Although their use of leverage has increased since 2012 (**Chart 16**), MICs use comparatively less leverage (at 1.7 times equity) than MFCs and other deposit-taking institutions. MICs fund their activities primarily through equity offerings that have a fixed lock-up period and pre-determined caps for redemptions. Equity funding is complemented by revolving lines of credit with deposit-taking institutions and intra-company loans that are used to enhance funding flexibility and boost returns (**Chart 17**).

MICs' share of the Canadian residential mortgage market is small at less than 1 per cent. While there is a direct link between MICs and the prudentially regulated sector through lines of credit, the size of interconnections is small. In an extreme scenario where MICs were forced to foreclose and sell properties

[21] For more details on mortgage finance companies, see Coletti, Gosselin and MacDonald (2016).

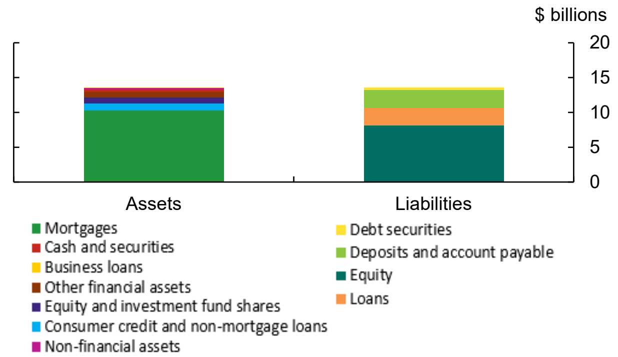
at fire-sale prices, the housing market and other residential mortgage lenders could be indirectly affected. The Bank of Canada will continue to monitor the impact of changes in housing finance regulations on mortgage credit growth and for signs that activity and risk taking might be shifting to the non-prudentially regulated sector.

Chart 16: MICs have rapidly increased their leverage since 2012
Annual data



Source: Statistics Canada | Last observation: 2017

Chart 17: MICs' mortgages are funded predominantly through equity
2017 data



Source: Statistics Canada | Last observation: 2017

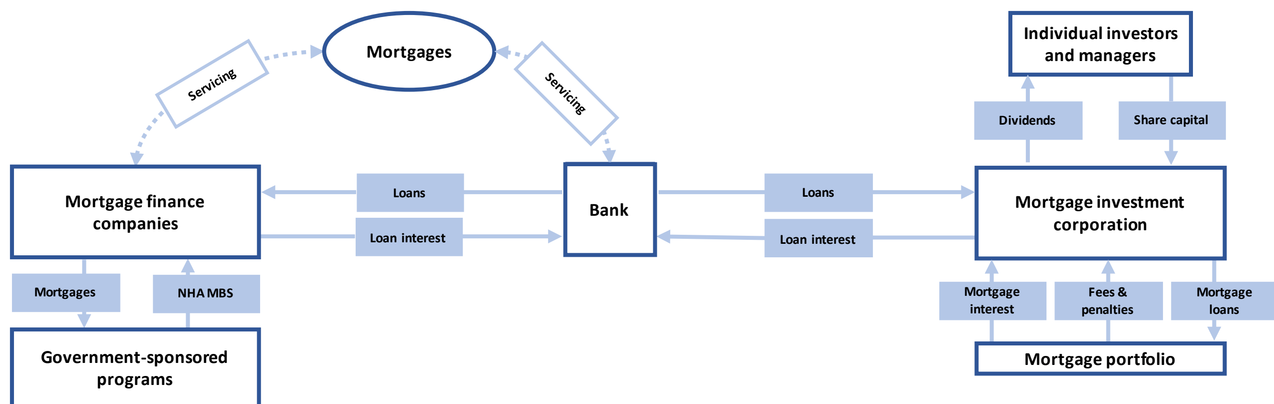
Box 4: Differentiating between MICs and MFCs

A mortgage investment corporation (MIC), governed by section 13.1 of the *Income Tax Act*, is an investment and lending company designed for mortgage lending. It must invest at least 50 per cent of its assets in Canadian residential mortgages or insured deposits. Funds are typically raised through the sale of equity shares to investors or through debt and other lines of credit (the *Income Tax Act* imposes leverage limits to maintain eligibility). To the extent that MICs use capital markets to raise funds, their activities fall under securities regulation. MIC shareholders have an equity interest in a flow-through entity that pays no corporate taxes, provided they remit their net income to shareholders. Share ownership in an MIC also qualifies for government tax-deferred and tax-sheltered plans. An MIC typically has 20 or more shareholders, and they tend to pay above-average returns to their investors, reflecting the risk profile of their lending activities.

MICs typically lend to borrowers that are not eligible to qualify for a conventional mortgage at a prudentially regulated financial institution. These typically include people with poor credit history, recent immigrants, self-employed individuals and real estate investors. MICs provide short-term loans (6 to 36 months) secured by real estate property. They usually prefer loans with low loan-to-value ratios (**Figure 4-A**). They generate business through referrals from mortgage brokers and real estate agents, but the largest entities have also been marketing directly to borrowers. MICs offer advantages that traditional banks may not offer, such as flexible terms and structure and a short turnaround time for assessing and providing funds.

Mortgage finance companies (MFCs) are large financial institutions that underwrite and service residential mortgages (usually insured). These mortgages tend to be packaged and sold to regulated financial institutions or securitized through government-sponsored programs. As a result, MFCs must adhere to underwriting guidelines and are thus often considered to be quasi-regulated. MFCs have a complex relationship with the major banks that is both co-operative and competitive. While some banks rely on MFCs to underwrite and service broker-originated mortgages, MFCs also rely on banks to fund their operating capital and a significant share of their mortgage lending. At the same time, MFCs and banks compete for broker-originated mortgages.

Figure 4-A: Graphical representation of interlinkages between banks, MFCs and MICs[a]



a. This figure was adapted from CMHC (2016).

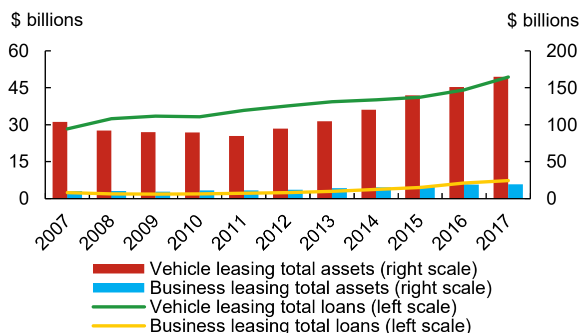
Consumer, business transportation and other leasing companies

A lease is a long-term contract of one or more years where the lessee pays the depreciation on a good, including an associated interest expense, and is offered the option at the end of the lease to buy out the good or return it. The transportation leasing sector includes all types of transportation vehicles (i.e., planes, trains and automobiles) and fleets, but excludes rentals. The other leasing companies sector adheres to the same general definition of a lease and covers all other types of leasing, such as equipment, furniture and machinery.

Among the data on new non-bank credit intermediaries released by Statistics Canada, the largest component is vehicle leasing, with total financial valued at $165 billion as of the end of 2017. The transportation leasing sector increased from $104 billion in 2007 to $165 billion in 2017 (**Chart 18**). Lease receivables, primarily classified as non-mortgage loan assets, stood at $42 billion in 2017. These lending activities are predominantly funded by loans, which stood at $81.28 billion in 2017 (**Chart 19**), and included short- and long-term debt amounts such as lines of credits with credit unions and Canadian chartered banks, private loans and government-sourced financing. The other leasing companies sector is structured similarly, with leases classified as non-mortgage loan assets ($5.4 billion) and their funding coming again from debt in the form of non-mortgage loans ($10.54 billion) and other leasing ($9.03 billion) (**Chart 20**).

Chart 18: Vehicle leasing loans have been steadily increasing

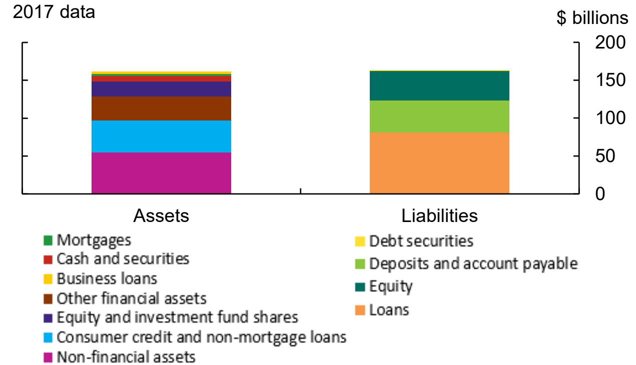
Annual data



Source: Statistics Canada | Last observation: 2017

Chart 19: The majority of vehicle leasing is funded through loans

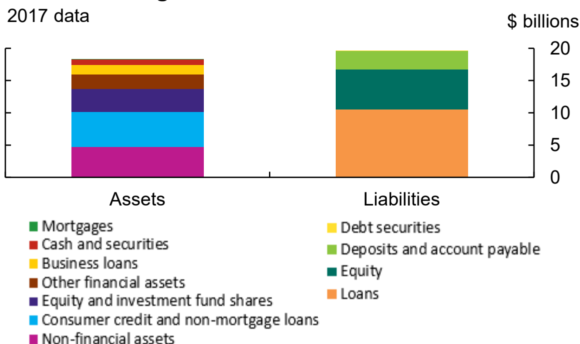
2017 data



Source: Statistics Canada | Last observation: 2017

Chart 20: The majority of business leasing is funded through loans

2017 data



Source: Statistics Canada | Last observation: 2017

4. Some fintech innovations are considered NBFI[22]

Given ongoing developments in the financial system, the Bank of Canada's monitoring efforts must keep pace with evolving business models and the behaviour of financial sector participants. In that regard, staff recently evaluated some fintech-related developments to determine whether any of these innovations fit under our definition of NBFI.

Crowdfunding and robo-advising do not currently meet the Bank's definition of NBFI. Crowdfunding refers to the practice of funding projects through contributions from many entities through an online platform; since no repayment of contributions is expected, this is not credit creation. Robo-advisors are online wealth management services that provide automated, algorithm-based investment advice to retail investors; because they are limited to advisory and investment execution services, they do not fit our definition.

In contrast, Bank staff consider that marketplace lending (MPL), also known as peer-to-peer lending, falls within our definition of NBFI. MPL refers to the online lending platforms that match institutional and individual investors with individuals or pools of borrowers. MPLs allow investors to select individual or pools of loans based on specific risk characteristics. MPLs typically attempt to minimize the credit risk they take on by adopting originate-to-distribute business models. MPL falls within our definition of NBFI for two reasons. First, by facilitating loans, MPLs are similar to other non-prudentially regulated financial institutions that underwrite loans. Second, MPLs rely on a range of funding sources (e.g., securitization, and loan notes with immediate redemption features and/or shorter maturities than the underlying loans) that facilitate liquidity and maturity transformation.

The MPL market is extremely small in Canada, with only 13 MPLs currently active and MPL loans outstanding estimated to equal just 0.01 per cent of banks' consumer credit exposure. Furthermore, there are many barriers to MPL growth. These include a lack of reliable and low-cost funding, limitations in attracting the highest-quality borrowers, low barriers for incumbent deposit-taking institutions to adopt the most effective aspects of MPL technology, and costs to acquire new customers. Notwithstanding the current size of the MPL market and potential barriers to its growth, there may be opportunities for marketplace lending to expand credit access or lower costs in segments of the financial market that are currently underserved by conventional lenders.

5. Conclusion

NBFI provides an alternative mechanism to the traditional deposit-taking system for channelling funds from savers to borrowers. It offers diversification benefits and is a key component of an agile and innovative financial sector. It is important for NBFI to be structured in a way that prevents its evolution from generating financial stability risks in the future.

[22] For a more detailed discussion of Fintech in the Canadian context, see Aaron, Rivadeneyra and Sohal (2017).

Significant progress has been achieved since the global financial crisis toward sustainable and resilient market-based finance. Regular monitoring activities, such as those described in this paper and the FSB *Global Monitoring Report on Non-Bank Financial Intermediation*, are now conducted, and policy measures have been implemented to ensure non-bank finance activities are subject to appropriate oversight and regulations.[23] In Canada, the decline in the share of NBFI assets relative to the overall financial system suggests a higher percentage of the Canadian financial system is subject to prudential supervision. Although a declining NBFI footprint suggests less risk, it is not sufficient to guarantee future financial stability.

The financial system constantly innovates and adapts, and risky activities can move to the shadows. This creates challenges to obtain relevant data in a timely fashion to assess risks and vulnerabilities. Changes in financial system regulation can also create incentives for financial fragmentation and generate substitutability issues for consumers that rely disproportionally on non-regulated entities to access the core financial services they need. The Bank of Canada will continue to monitor NBFI developments closely.

[23] A non-exhaustive list includes policies to deal with banks' involvement in, and exposure to, non-bank finance entities (Basel III); measures to address liquidity and maturity mismatches in investment funds and securities financing transactions (money market reforms, repo market infrastructure reforms, haircuts for non-centrally cleared securities financing transactions, margin requirements for over-the-counter derivatives); and measures to address incentives and opaqueness issues (various securitization reforms, rating incentives, etc.)

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