

Wholesale Funding of the Big Six Canadian Banks

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- Retail and commercial deposits along with wholesale funding represent the two major sources of funds for Canadian banks. Wholesale funding is typically obtained directly from institutional investors in financial markets. It is largely used to finance banks' activities in capital markets, to offer financial services to large institutional clients and to support other lending activities.
- Canada's Big Six banks¹ use a wide range of financial instruments to acquire wholesale funding. These financial instruments can be categorized into secured and unsecured borrowings across short- to long-term maturities and can be denominated in different currencies.
- The diversity of wholesale funding instruments allows the Big Six Canadian banks to manage their refinancing risk, vary their sources of funding, meet regulatory requirements and lower their overall cost of capital. For investors, the banks' wholesale borrowings offer investment choices with a variety of credit, liquidity and maturity profiles.
- The resilience of the Canadian banks compared with that of their international peers during the 2007–09 global financial crisis can be attributed to their sound risk management, strong capitalization and more stable forms of funding. However, new bank regulation and changes in banks' internal risk-management practices after the crisis led to changes in their funding behaviour, including a further decline in the use of wholesale funding relative to deposits. In addition to lengthening the average maturity of their wholesale borrowings and increasing their funding in foreign currencies, banks expanded their use of alternative instruments, such as covered bonds and non-viability contingent capital notes.

The Big Six banks are a dominant component of the Canadian financial system, and how they finance their business activities is fundamental to their effective functioning. This article describes wholesale funding instruments used by the Big Six, explains how the banks choose between different funding sources and shows how the banks' funding mix has evolved since the 2007–09 global financial crisis.

¹ The Big Six Canadian banks are the Bank of Montreal, the Bank of Nova Scotia, the Canadian Imperial Bank of Commerce, the National Bank of Canada, the Royal Bank of Canada and TD Bank Group.

Wholesale Funding Instruments

Retail and commercial deposits and wholesale funding represent the two major sources of funds for Canadian banks. Retail and commercial deposits from individuals and businesses are typically sourced through the bank's branch network. These funds are used to finance personal and commercial lending activities, such as mortgages, business loans, lines of credit and credit cards. Banks consider deposits to be a core source of funding because of their stability over time.

Wholesale funding is typically obtained directly from institutional investors in financial markets. It is mostly used to finance banks' activities in capital markets, acquire high-quality liquid assets (HQLA), as well as fund the provision of financial services offered to large clients, such as financial institutions, major corporations and government agencies. It can also be employed to finance banks' mortgage and credit card portfolios or other lending activities. Wholesale funding markets allow banks to quickly raise large amounts of money for both short and long maturities. However, the cost and availability of wholesale funding depend on conditions in global financial markets, thus making it less stable relative to retail and commercial deposits. For example, during the financial crisis, excessive reliance on short-term wholesale funding by some foreign financial institutions contributed to their solvency concerns.

The majority of wholesale funding, especially in longer maturities, comes directly from institutional investors. They provide banks funding through the acquisition of marketable securities in the primary market. These instruments can later be traded in the secondary market among various types of investors.

The Big Six employ a broad range of wholesale funding instruments in both Canadian and foreign markets. These funding instruments, typically considered liabilities on banks' balance sheets, can be categorized as either secured or unsecured borrowings whose maturities can range from short to long term.

Short- and long-term funding

Short-term borrowing, often referred to as money market funding, is typically obtained for maturities of less than one year, while long-term funding is for a term lasting longer than one year. Short-term borrowings are generally a cheaper source of funds for a bank since investors demand a higher yield (i.e., credit spread) for their longer-term investments. However, refinancing risk makes short-term funding less predictable for the issuer than long-term funding, especially if there are interest rate, maturity and currency mismatches between assets and liabilities.

Secured and unsecured funding

Secured and unsecured funding pose different credit risks to investors and have different cost implications for banks. Secured funding is defined as "liabilities and general obligations that are collateralised by legal rights to specifically designated assets owned by the borrowing institution in the case of bankruptcy, insolvency, liquidation or resolution."² Securitization of the bank's unencumbered assets is a common way to obtain secured funding (see Appendix for details). Unsecured funding, in contrast, is uncollateralized, i.e., not guaranteed by specific assets, and is backed by the overall creditworthiness of the bank. Generally, secured funding achieves

◀ *Wholesale funding markets allow banks to quickly raise large amounts of money for both short and long maturities*

² Basel Committee on Banking Supervision (2013, para. 112)

lower borrowing rates than unsecured funding for the same term because of its lower credit risk. The banks' use of secured funding compared with unsecured funding is driven by the relative pricing between these two instruments. The amount of secured funding is also constrained by the desire of banks to have enough unencumbered assets and by regulatory and internal risk limits.

Table 1 categorizes various funding instruments used by banks. These instruments have different credit risk profiles, legal characteristics and investor bases. The **Appendix** presents detailed descriptions of the individual funding instruments.

Table 1: Wholesale funding instruments used by the Big Six Canadian banks

Maturity	Secured	Unsecured
Short term	<ul style="list-style-type: none"> ▪ Repurchase agreements^a ▪ Asset-backed commercial paper 	<ul style="list-style-type: none"> ▪ Bearer deposit notes ▪ Bankers' acceptances^b ▪ Certificates of deposit ▪ Deposits from banks
Long term	<ul style="list-style-type: none"> ▪ Covered bonds ▪ <i>National Housing Act</i> mortgage-backed securities (NHA MBS)^c ▪ Other asset-backed securities 	<ul style="list-style-type: none"> ▪ Senior deposit notes ▪ Subordinated notes and capital instruments, such as non-viability contingent capital

a. Banks use repurchase agreements (repos) for funding and to intermediate trades between end-users. It is difficult to separate these two uses of repos with public data.

b. A bankers' acceptance (BA) is a special type indirect funding for a bank. Money raised through BA funding is ultimately passed on to the banks' corporate clients. See **Appendix** for details.

c. NHA MBS can be either a source of funding when they are sold to investors or the Canada Housing Trust or a source of high-quality liquid assets when retained on the balance sheet.

Domestic and foreign funding

The Big Six Canadian banks can choose between Canadian and foreign capital markets to obtain wholesale funds. Foreign currency funding can be used to fund banks' activities in foreign jurisdictions since most of them offer financial market services in other countries. Foreign funding can also be converted to Canadian dollars or to other currencies, as required, through either foreign exchange or cross-currency swaps, depending on the term of the transaction. Foreign funding in this case presents an opportunity to lower funding costs and/or broaden the bank's investor base.

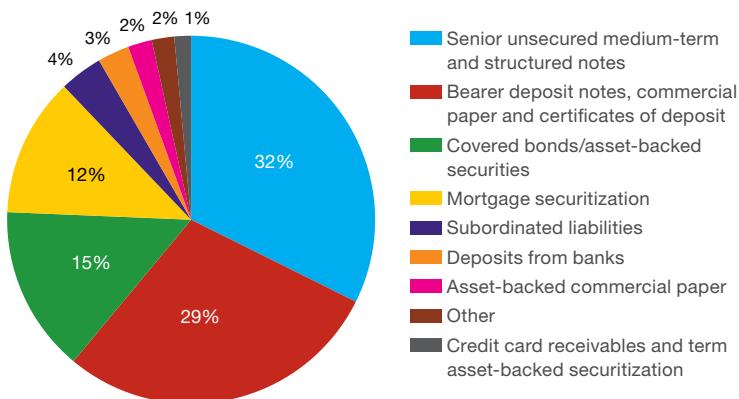
Current funding mix

The total outstanding amount of wholesale funding of the Big Six Canadian banks, excluding repurchase agreements (repos) and bankers' acceptances, was around Can\$1 trillion³ on 31 October 2016. The banks' annual reports from 2016 show that around 70 per cent was unsecured. About 48 per cent of the wholesale funding was for one year or less. The largest single source of wholesale funding, excluding repos and bankers' acceptances, is senior unsecured medium-term and structured notes, at approximately 32 per cent of the total (**Chart 1**). A significant portion of funding also comes from mortgage securitization and covered bonds (27 per cent).

³ Regulatory filings of the Big Six also show the total outstanding amounts for repurchase agreements and bankers' acceptances, which stood at about Can\$320 billion and Can\$75 billion, respectively, at the end of October 2016. These numbers are not included in the charts because of the different nature of these funding instruments. See also Table 1, notes a and b.

Chart 1: Big Six wholesale funding instruments

Fiscal year ending 31 October 2016



Source: Big Six annual reports, excluding repos and bankers' acceptances

Banks' Wholesale Funding Management

Choosing where, when and what funding instrument to issue is a complex task typically carried out by banks' treasury departments. The funding strategies of banks are structured to satisfy the following objectives:

- liquidity management⁴—ensuring enough funds are available to satisfy cash outflows in both normal and stress periods;
- asset liability management—managing the interest rate risks, currency risks and maturity profiles of banks' assets with the liabilities used to fund them;
- regulatory requirements—satisfying various regulatory requirements, such as the Liquidity Coverage Ratio (LCR), Net Cumulative Cash Flow (NCCF) and upcoming Net Stable Funding Ratio (NSFR);
- business objectives—obtaining funding to satisfy expected asset growth of a bank;
- diversified investor base—issuing different wholesale funding instruments in a variety of currencies to reduce reliance on a single market or investor base; and
- minimized cost of capital—monitoring prevailing market conditions and choosing the most cost-effective instruments. There can be a trade-off between minimizing cost of funding and meeting other risk-management and regulatory requirements.

Optimal funding strategies that use various combinations of wholesale funding instruments are typically consolidated into the quarterly and annual funding plans. These funding plans are constantly reviewed and adjusted in response to changes in foreign exchange rates, interest rates, credit spreads, general market conditions, as well as the evolving bank's funding needs. Banks therefore continuously analyze where their existing debt

⁴ Liquidity management is defined as "the management of cash flows across an institution's balance sheet (and possibly across counterparties and locations). It involves the control of maturity/currency mismatches and the management of liquid asset holdings. A bank's liquidity-management strategy sets out limits on such mismatches and the level of liquid assets to be retained to ensure that the bank remains able to meet funding obligations with immediacy across currencies and locations . . . (Committee on the Global Financial System 2010).

is trading in the secondary market, examine primary market conditions across the range of markets and currencies that they are active in, respond to reverse inquiries from investors asking to issue a particular instrument, and compare their funding credit spreads with those of their peers. Foreign exchange and cross-currency swaps are used to assess the cost attractiveness of funding instruments in different currencies.

The turmoil in short-term funding markets during the global financial crisis exposed the risk of banks' excessive reliance on short-dated funds, which motivated the Basel Committee on Banking Supervision to develop a new international regulatory framework. This framework is designed to improve the resilience of the global financial system by implementing a set of measures at the institutional level.⁵ Some of these measures specifically target the funding strategies and liquidity-management practices of banks. For example, under LCR, stable funding sources such as retail and commercial deposits receive more favourable regulatory treatment relative to less-stable wholesale funding instruments.⁶

The introduction of new regulations and changes in internal risk management have led the Big Six to move toward a more centralized funding and liquidity-management structure where funding decisions are closely controlled by the central treasury rather than by individual business units. Centralized funding management is considered by the Big Six to be a more efficient way to create optimal funding mixes that satisfy regulatory requirements while minimizing the costs, diversifying funding sources and properly transferring funding and associated regulatory costs to the appropriate individual business lines.

◀ *Centralized funding management is considered a more efficient way to create optimal funding mixes that satisfy regulatory requirements while minimizing the costs, diversifying funding sources and properly transferring funding and associated regulatory costs to the appropriate individual business lines*

Post-Crisis Evolution in Wholesale Funding

Before the financial crisis, the Big Six Canadian banks were more focused on retail deposit funding and less reliant on money market wholesale funding than international investment banks were. Their leverage was also noticeably lower than that of US investment banks and major European banks (Gauthier and Tomura 2011). Not only did the Canadian banks have a better liability/capital position, but they also had more conservative mortgage lending practices, resulting in stronger asset positions than those of some of their foreign peers.

The financial crisis exposed the fragility of global banks' funding models, which included their vulnerability to liquidity shortfalls, in addition to currency and maturity mismatches between assets and liabilities. The resilience of the Canadian banks relative to that of their peers throughout this period can be attributed to their sound risk-management practices, strong capitalization buffers and more stable forms of funding. The banks' capital position was further strengthened by the issuance of common shares during the crisis as well as strong retained earnings (Arjani and Graydon 2013).

◀ *The resilience of the Canadian banks relative to that of their peers throughout the global financial crisis can be attributed to their sound risk-management practices, strong capitalization buffers and more stable forms of funding*

After the crisis, stricter internal liquidity-management practices and regulatory changes led to the increase in the average maturity of wholesale borrowings, a higher use of foreign currency funding and the development of alternative funding instruments, such as hybrid certificates of deposit (CDs) and contingent capital instruments. Those developments resulted in changes to Canadian banks' wholesale funding mix and are described below.

⁵ See "Basel III: International Regulatory Framework for Banks."

⁶ See the Office of the Superintendent of Financial Institutions Liquidity Adequacy Requirements.

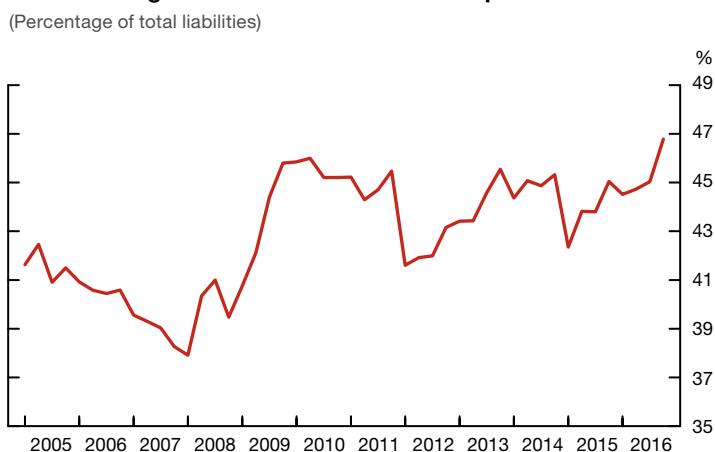
Increased Reliance on Retail and Commercial Deposits as a Share of Total Liabilities

The Big Six increased their reliance on retail and commercial deposits as a share of their total liabilities (**Chart 2**). These deposits increased from approximately 40 per cent at the beginning of the global financial crisis to around 47 per cent in October 2016. Most of this increase occurred immediately following the financial crisis.

As mentioned previously, the liquidity and stable funding requirements introduced in the Basel III regulatory framework, such as the LCR, provide favourable treatment for retail deposits as a stable source of funding. Therefore, banks made efforts to acquire more retail deposits than they had before the crisis (**Chart 3**). In some cases, the Big Six redesigned financial products offered in the personal and commercial banking units and launched advertising campaigns to attract customers to those new financial products, e.g., by offering a higher rate on a long-term Guaranteed Investment Certificate account or other demand deposit instruments.

► The liquidity and stable funding requirements introduced in the Basel III regulatory framework provide favourable treatment for retail deposits as a stable source of funding

Chart 2: Growth in Big Six retail and commercial deposits

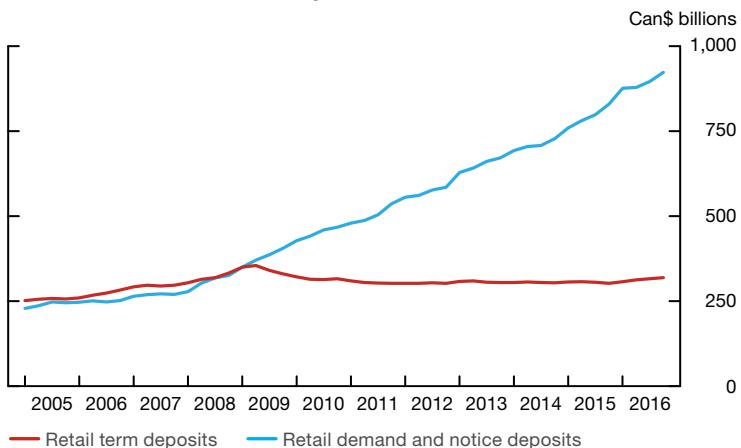


Note: Retail and commercial deposits consist of individuals' fixed-term deposits and all demand and notice deposits.

Source: Regulatory filings of Canadian banks

Last observation: 31 October 2016

Chart 3: Growth in retail demand deposits



Note: Growth in retail demand deposits has proven stable in times of financial stress.

Source: Regulatory filings of Canadian banks

Last observation: 31 October 2016

Another channel for acquiring these types of liabilities has been through the purchase of financial institutions with a stable base of retail banking deposits in Canada (e.g., Bank of Nova Scotia bought ING Direct) or abroad (e.g., TD Bank Group bought South Financial group).

More Wholesale Funding Obtained Abroad

Since the crisis, the Big Six have increased their foreign currency debt issuance, taking advantage of strong foreign investor demand for Canadian bank credit exposure given the relative strength shown by the Canadian banks through the crisis.⁷ This increase in foreign currency funding helps banks diversify their funding sources, opportunistically obtain attractive funding costs and support the growth of foreign currency assets (Chart 4).⁸

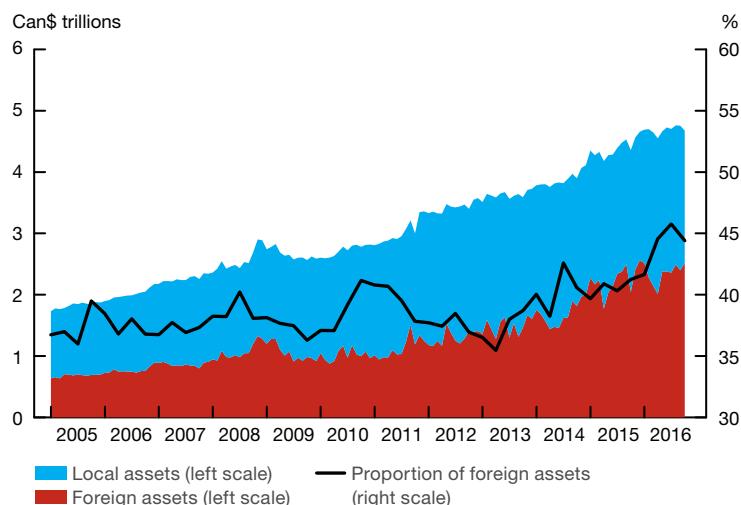
As shown in Chart 5, the share of wholesale funding issued in foreign currencies increased from slightly less than 65 per cent in 2007 to 75 per cent at the end of 2016. In 2016, the Big Six issued a record amount of foreign currency debt, as valued in Canadian dollars.

To do so, they used a broad variety of foreign funding instruments from secured to unsecured across short- to long-term maturities. Short-term debt issued abroad consists primarily of CDs. The main market for Canadian CDs abroad has been US investors. The reforms to the US money market in 2016 forced a decline in demand from US money market funds for bank paper. The Big Six adapted to this change by switching toward new investors for CDs in the United States and increasing the amount of CDs issued in Europe and the United Kingdom.

Most of the increase in long-term foreign currency issuance came in the form of senior unsecured debt and covered bonds in the United States and, to a lesser extent, in Europe and the United Kingdom.⁹

► The Big Six Canadian banks have increased their foreign currency debt issuance, taking advantage of strong foreign investor demand for Canadian bank credit exposure

Chart 4: Increase in the proportion of foreign assets in total assets



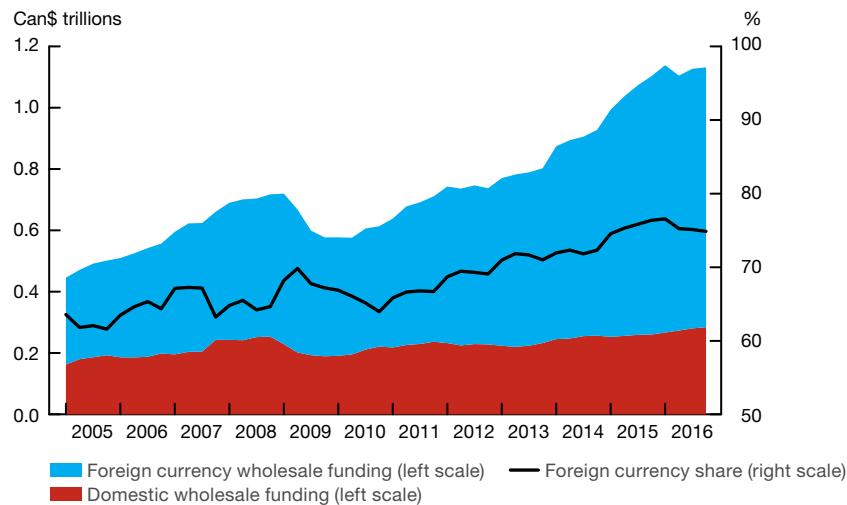
Source: Regulatory filings of Canadian banks

Last observation: 31 October 2016

⁷ “Due to the relatively healthy position of Canadian banks vis-à-vis other banking systems, which allowed Canadian banks to expand internationally . . .” (Chapman and Damar 2015, 12).

⁸ The growth in foreign currency assets has been partly driven by movements in exchange rates.

⁹ Covered bonds are debt instruments that are secured by a pool of assets. A covered bond collateral is separated from the assets of an issuer in the event of insolvency or bankruptcy. The Canadian covered bond legislative framework adopted in 2012 requires covered bonds to be secured only by uninsured mortgages. See Appendix for more details.

Chart 5: Increase in reliance on foreign currency wholesale deposits

Note: Domestic wholesale funding represents Canadian-dollar non-personal fixed-term deposits, whereas foreign currency wholesale funding represents non-personal fixed-term deposits in foreign currencies.

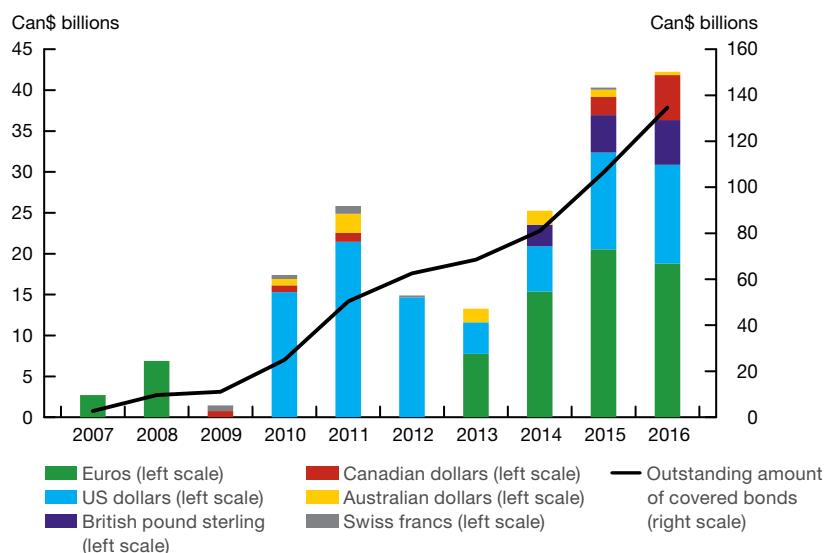
Source: Regulatory filings of Canadian banks

Last observation: 31 October 2016

Growth in Alternative Funding Instruments

Chart 6 shows the growth in the outstanding amount of covered bonds issued by the Big Six since 2010. Covered bond issuance in Canada has been small, with most of the growth coming from issuance in larger foreign markets in the United States and Europe. The Office of the Superintendent of Financial Institutions (OSFI) established a prudential limit on the outstanding amount of covered bonds for a bank, which currently stands at 4 per cent of the institution's total assets.

- Covered bond issuance in Canada has been small, with most of the growth coming from issuance in larger foreign markets

Chart 6: Increase in the issuance of covered bonds

Source: Bloomberg

Last observation: 2016

Regulatory changes such as the LCR ratio encouraged banks to issue new hybrid CDs abroad: for example, some pay increasing interest rates during the life of the security, while others have callable and extendable options that allow the issuer to prolong or shorten the life of the CD.

Since the adoption of the non-viability contingent capital (NVCC) regulatory requirements in 2013, most of the Big Six have issued NVCC notes in Canada and in the United States. NVCC refers to securities issued by a deposit-taking institution that require a conversion into the institution's common shares when it is no longer financially viable. The NVCC requirements ensure that investors in these instruments bear losses before taxpayers when the government rescues a non-viable bank.¹⁰ Total issuance of NVCC notes since the adoption of NVCC requirements has been around Can\$20 billion.

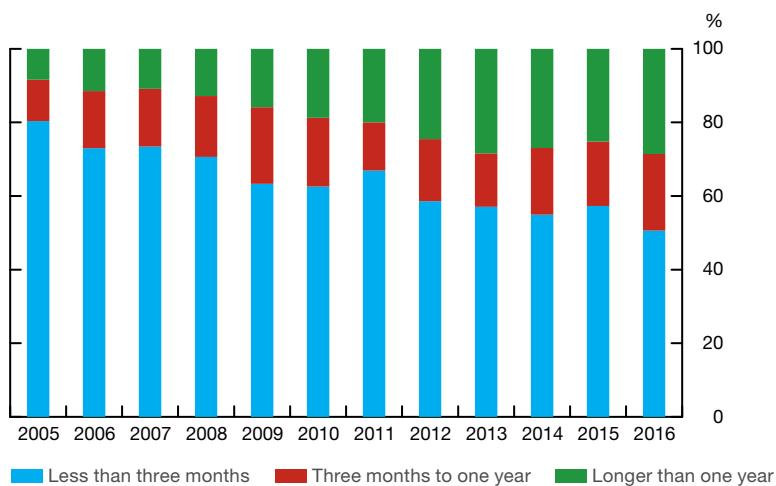
Because of the potential risk of conversion into common shares, NVCC is the most expensive type of long-term debt instrument for the banks since it provides investors with the highest spread over the risk-free rate of the Government of Canada bonds.

Longer Average Maturity of Wholesale Funding

During the global financial crisis, the turmoil in short-term funding markets caused banks globally, including the Big Six in Canada, to re-evaluate the risks associated with excessive reliance on short-term funding. As mentioned in previous sections, new regulation also encourages more long-term funding. Both developments led Canadian banks to increase the average maturity of wholesale funding. As a result, the relative share of long-term funding has been increasing steadily since 2008 (Chart 7). The banks' need to increase the term of their funding led them to pursue longer-term funding domestically and abroad, where they issued more senior unsecured notes and covered bonds.

◀ New regulation encourages more long-term funding

Chart 7: Share of banks' wholesale deposit funding, by term length



Note: The maturity breakdown is presented for non-personal fixed-term deposits in US and Canadian dollars.
Source: Regulatory filings of Canadian banks

Last observation: 2016

¹⁰ See the Office of the Superintendent of Financial Institutions Capital Adequacy Requirements for more details.

Conclusion

After the financial crisis, Canadian banks increased their reliance on retail and commercial deposits, increased the average maturity of their wholesale borrowings and further diversified their funding sources in foreign markets. The variety of funding tools and the changes in their use over time indicate that the Big Six Canadian banks are sophisticated financial institutions that value the diversity of funding sources, optimize their funding mixes and continuously adapt to a changing external environment.

Appendix

Description of Wholesale Funding Instruments

Secured short-term funding

Repurchase agreement

A repurchase agreement (repo) is structured to resemble a collateralized loan. The seller of a security in a repo transaction receives cash and pays interest for the duration of the repo, while the buyer provides cash and holds a security as collateral. Repos are used mainly to finance purchases of securities, such as bonds, and they play a fundamental role in the smooth functioning of the fixed-income market. The Canadian repo market is described in detail in Garriott and Gray (2016). Securities used in repos include equities, government bonds, treasury bills, provincial bonds, Canada Mortgage Bonds and corporate bonds.

Asset-backed commercial paper

Banks can generally repackage sizable quantities of homogeneous, less liquid assets into a special-purpose vehicle that issues highly rated debt securities. Typical assets include mortgages, credit card receivables, automobile loans and leases, and trade receivables. The usual investors are mutual funds, pension funds, corporations and financial institutions (Toovey and Kiff 2003). Asset-backed commercial paper is a structured financial instrument that provides short-term wholesale funding for portfolios of less liquid assets that would otherwise be difficult to finance in the wholesale market.

Unsecured short-term funding

Bankers' acceptances

When a corporate borrower obtains funds through the bank's BA lending facility (its BA credit line), the issuing bank guarantees the principal and interest payments on the BA loan. This guarantee is established to upgrade the credit quality of the loan, which allows the bank to resell the BA loan in the secondary market to other investors. These products have the same short-term credit rating as the issuing bank's. Borrowers of BAs typically represent a broad group of corporations ranging from small businesses to mid-sized firms. The investors in BAs are money market funds, mutual funds, pension funds and asset managers. BAs are usually issued with maturities of 1, 3, 6 or 12 months depending on requirements of the BA borrower; however, close to 85 per cent of the overall BA issuance is for 1 month or less. BAs are the second largest money market instrument in Canada, behind Government of Canada treasury bills, with an average outstanding amount of \$75 billion in 2016.

Bearer deposit notes

Bearer deposit notes (BDNs) are issued directly by the bank in its own name, allowing for flexibility in the size and term of the maturity. Typical maturities range from three months to one year. They are tradable on the secondary market and rank *pari passu* with the other unsecured and senior notes of the bank. These instruments are issued in the Canadian domestic market.

Certificates of deposit

Certificates of deposit (CDs) are issued by paying interest on deposits for a set period without the usual withdrawal flexibility offered by standard savings accounts; they usually range in term length from 1 week to 18 months.

CDs differ from BDNs mostly in their legal form and they can also be issued in other currencies. Overall BDNs and CDs are complementary tools that allow banks to meet their funding needs while servicing corporations or money market funds who are often buyers of CDs.

Deposits from banks

Deposits from banks are raised from other banks through the banks' treasuries and are reported in the wholesale funding composition tables of the Big Six. Most of these deposits are less than one month in term length. Deposits mostly differ from foreign currency CDs and BDNs in their legal form as they are not tradable securities.

Foreign currency funding transformation

The Big Six are active in foreign currency funding markets. They regularly borrow money in a foreign currency and convert those funds into Canadian dollars using foreign exchange forwards and swaps or cross-currency swaps for longer-dated transactions.

The foreign exchange forward and swap markets are very liquid, allowing banks to easily transform foreign currency funding into the desired currency. They can accommodate large transactions and be tailored to specific dates to suit funding requirements. These transactions generally range in horizon from overnight to five years.

Secured long-term funding

Securitization is a type of secured funding and is usually accomplished by transforming a bank's financial assets, such as loans or mortgages, into more-liquid assets with higher credit quality as a result of an over-collateralized structure¹¹ with safeguards in case the issuer becomes insolvent. Assets are typically transferred to a third party, such as a trust or a bank-sponsored structured entity, which in turn issues debt securities to fund the purchases of the assets. Most asset securitizations remain on a bank's balance sheet and cannot be derecognized because the bank retains economic and credit exposure to the securitized assets. By retaining the risks and offering collateral as a guarantee, securitization usually achieves a lower cost of funding relative to an uncollateralized borrowing of similar maturity.

National Housing Act mortgage-backed securities and Canada Mortgage Bonds programs

National Housing Act mortgage-backed securities (NHA MBS) securities are created by domestic banks through the Canada Mortgage and Housing Corporation (CMHC) program from pools of individual insured

¹¹ For example, every \$100 worth of debt sold to an investor could be supported by \$120 of underlying assets.

mortgages whose principal and interest payments are passed through to MBS investors. Timely payments of interest and principal from NHA MBS securities are guaranteed by the CMHC, and thus these securities have the highest triple-A credit rating. NHA MBS securities can be sold to the Canada Housing Trust as part of the Canada Mortgage Bond (CMB) program or to outside investors. They can also remain on the balance sheets of the banks and be accounted as high-quality liquid assets. The typical maturity of an NHA MBS security is around five years, matching the most popular mortgage type in Canada—a five-year fixed-rate mortgage.

The Canada Housing Trust purchases NHA MBS securities from financial institutions, which it funds through the issuance of CMBs. CMBs offer investors a standard fixed-income instrument with semi-annual interest payments and a full principal repayment at maturity. NHA MBS securities, in contrast, are subject to prepayment risk from the underlying mortgages. CMBs are typically issued as 5-year and 10-year fixed-rate as well as 5-year floating-rate securities. The ability of domestic banks to securitize mortgages and to sell NHA MBS securities to the Canada Housing Trust is an important, cost-effective wholesale funding tool.¹²

Covered bonds

CMHC defines covered bonds as “debt instruments that are issued by a Financial Institution and secured by a pool of assets (the “cover bond collateral”). The issuer of a covered bond pays periodic interest and principal on the bond, in accordance with terms that are set upon issuance. The covered bond collateral is segregated from the assets of the issuer in the event of insolvency or bankruptcy of the issuer and the pool of covered bond collateral is owned by a bankruptcy-remote special purpose vehicle (SPV) which guarantees the bonds.”¹³

In Canada, covered bonds issued by banks are secured by a dedicated pool of high-quality assets. In April 2012, the federal government introduced a framework that requires covered bonds to be secured only by uninsured mortgages (in contrast with NHA MBS). The Office of the Superintendent of Financial Institutions established a prudential limit on the outstanding amount of covered bonds for a financial institution; the limit currently stands at 4 per cent of a financial institution’s total assets.

Because covered bonds are typically structured to achieve the highest triple-A credit rating, they provide the issuing bank with cheaper funding than unsecured senior deposit notes do, although at a cost of encumbering the assets. Given the stronger investor demand in foreign markets for these types of product, domestic financial institutions have issued most of their covered bonds abroad, primarily in US dollars and euros and, to a lesser extent, in Australian dollars, Swiss francs and British pound sterling. Foreign currency proceeds are converted to Canadian dollars using the cross currency and foreign exchange swap markets. Covered bonds are usually issued with a five-year maturity, matching the typical mortgage term, although issuance at three-year and seven-year points is not uncommon.

Asset-backed securities

Asset-backed securities (ABS) are created when banks combine similar assets, such as credit cards, automobile loans and home equity lines of credit into financial securities sold to investors. According to the Dominion

¹² For further details on NHA MBS and CMB programs, see Mordel and Stephens (2015).

¹³ For more information, see the [Canada Mortgage and Housing Corporation website](#).

Bond Rating Service, the total term ABS market size in Canada at the end of February 2017 was \$40.1 billion.¹⁴ Credit cards are the largest asset class, representing around 68 per cent of the term ABS market.

Unsecured long-term funding

Senior deposit notes

Senior deposit notes are a form of unsecured funding whose quality of credit ranks lower than secured funding but higher than more junior, sub-ordinated debt in the bank's capital structure. Deposit notes can be viewed as de facto benchmarks for Canadian bank debt because of their large size and relatively good liquidity. They are typically issued with a 5-year maturity, although banks can also issue at 1-, 2-, 3-, 7- or 10-year maturities to meet investor demand for a particular duration and to build out an entire credit curve. Deposit notes are issued both in Canada and internationally in a variety of currencies, with foreign proceeds often swapped back to Canadian dollars. Investors in Canadian bank deposit notes are usually diverse and include asset managers, insurance companies, mutual funds and foreign bank treasuries. Big Six deposit notes constitute a significant part of the Canadian corporate bond market given their size and liquidity. In the past several years, Big Six deposit note issuance has represented around 30 per cent of the overall corporate issuance in Canadian dollars.

Subordinated debentures and capital instruments

Subordinated notes are unsecured obligations that are subordinated in priority of payment to the bank's depositors and creditors, such as holders of senior unsecured deposit notes. These securities are more costly for the banks to issue compared with covered bonds and senior deposit notes. Subordinated debentures issued before 1 January 2013 are viewed as non-qualifying capital instruments by the Office of the Superintendent of Financial Institutions and are subject to a phase-out period of 10 years.

Capital instruments include common equity, preferred shares and non-viability contingent capital notes. The main purpose of capital instruments is to satisfy regulatory capital requirements. The Big Six must meet minimum levels of capital ratios, and one of the avenues to achieve this is through the issuance of capital instruments. Issuance of these instruments is expensive for banks, and they are not considered major wholesale funding tools. Moreover, capital instruments are typically riskier for investors than the other forms of funding discussed above.

¹⁴ Dominion Bond Rating Service, "DBRS Releases January 2017 Canadian ABS and Enhanced ABS Reports," 8 March 2017.

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