CANADIAN FIXED INCOME FORUM

Residential mortgage-backed securities

April 24, 2018

Introduction

- At the last CFIF meeting, members expressed interest in discussing the development of a Canadian residential mortgage-backed securities (RMBS) market

- Recent developments suggest that RMBS is attracting renewed interest (for example, MCAP's 2018 deal)

- This deck covers the following:
  - The current landscape
  - Potential avenues to explore in the development of a RMBS market
  - Proposal for a workshop

What is RMBS?

- RMBS transform uninsured illiquid mortgages into a tradeable security [(1)]
- Rather than keeping mortgage loans on their books, lenders pool their mortgages and sell parts of this pool to investors
- Each part of this RMBS pool is a claim to the cash flows that the lender receives when borrowers make payments on their mortgages

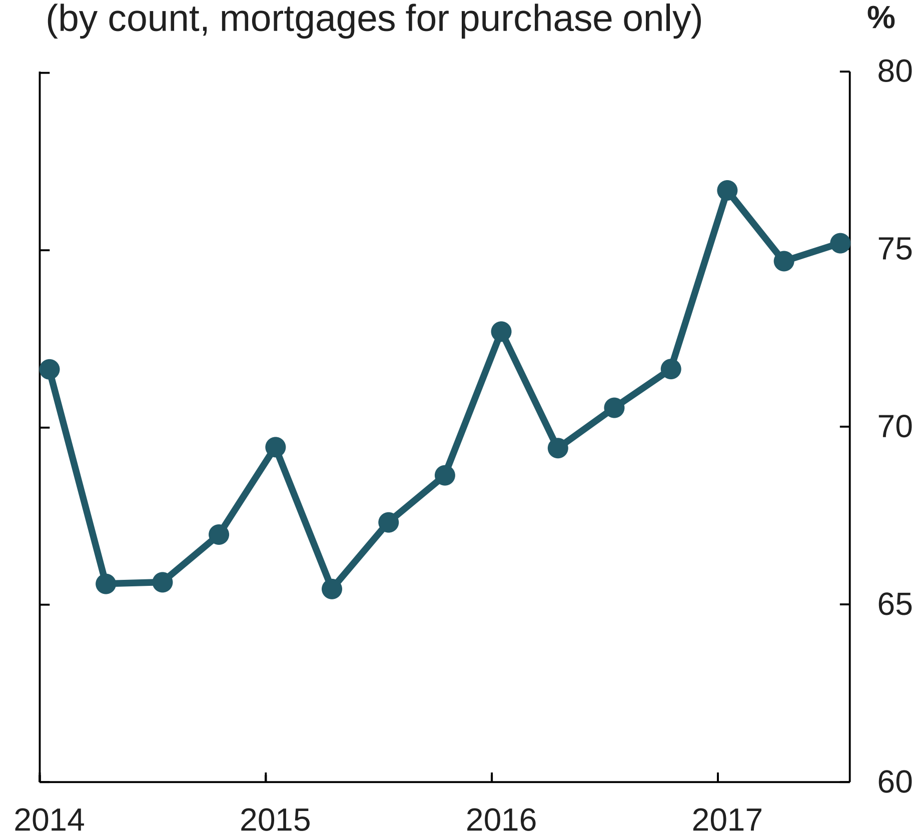
(1) For additional discussion, see Mordel and Stephens (2015) "Residential Mortgage Securitization in Canada: A Review"

Uninsured mortgage credit origination is on the rise…

- Federally regulated financial institutions' share of low-ratio originations for home purchases has grown rapidly:
  - From 2/3 in 2014 to 3/4 in 2017
  - Now 90% in Toronto and Vancouver

- Potential drivers for this trend include:
  - Tighter mortgage insurance criteria
  - Rising house prices: more properties over $1M cap for mortgage insurance
  - Reduced access to portfolio insurance, notably since fall 2016
  - Higher premiums

Tighter access to mortgage insurance has led to a larger share of low-ratio originations
(by count, mortgages for purchase only)

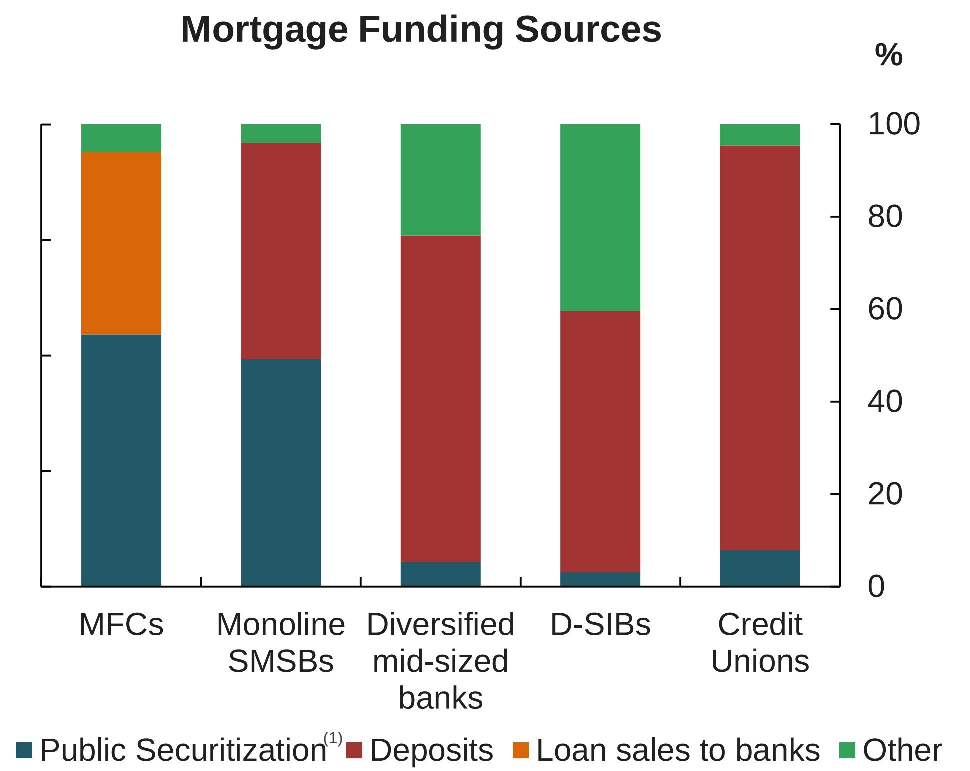


Source: Regulatory filings of Canadian banks and Bank of Canada calculations

Last observation: 2017Q3

…limiting funding scope for some originators

- Funding uninsured mortgages may be constrained for:
  - Mortgage finance companies (MFCs) or small and medium size banks (SMSBs) that rely heavily on public securitization (NHA MBS and CMB programs)
  - lenders with less sticky deposit bases
  - those close to the covered bond issuance cap

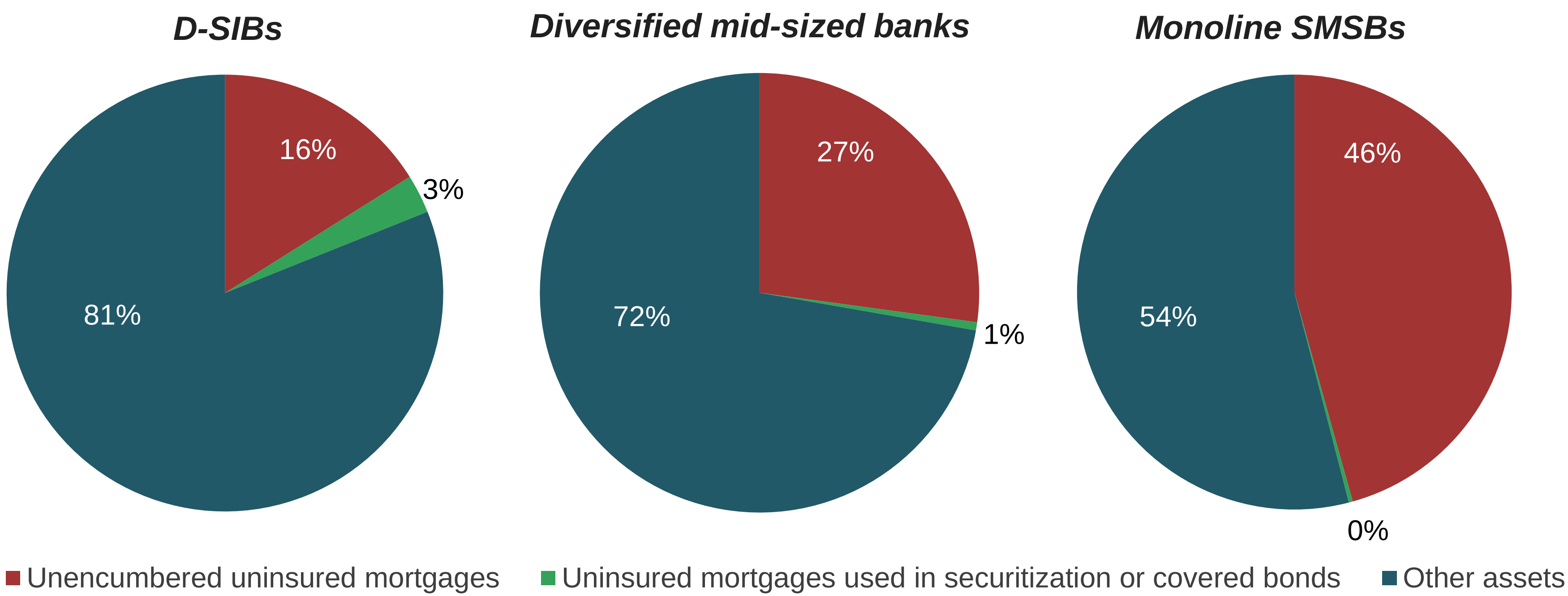


Source: Banks' regulatory returns, Statistics Canada, company websites
Last observation: 2017Q3

(1) Public securitization funding refers to NHA-MBS and CMB

There are potential opportunities for the development of a private RMBS market

- There is $891B of unencumbered uninsured mortgages on bank balance sheets
  - Monoline SMSBs hold approximately $24B of that total



Source: Banks' regulatory filings
Last observation: November 2017

Monoline SMSBs hold more unencumbered uninsured mortgages as a percent of total assets

There are a number of impediments to the development of a private RMBS market

- Some examples of impediments to the development of a private RMBS market include:

Supply Side	Demand Side
❖ D-SIBs have access to cheaper funding sources (deposits, deposit notes, GICs, covered bonds) ❖ Non-D-SIBs may not be able to securitize their mortgages – Smaller size – Potentially riskier mortgages	❖ Valuation challenges due to lack of granular-level historical data ❖ Yield relative to other fixed income assets ❖ Limited appetite for monthly amortizing assets ❖ Limited market liquidity and issuance size

Potential avenues to explore for the development of a private RMBS market

- Establishing standards for:
  - collateral
  - deal structure
  - disclosure requirements

- Establishing the appropriate vehicle for RMBS issuance

Potential standards for collateral could include:

- Mortgage size
- Term
- Payment type & frequency
- Property type
- Value
- LTV
- TDS/GDS
- Borrower credit score

Standards which could be established for pools and deal structure could include:

Pool	Deal
Size	Pass through vs. senior/subordinated structure
Geographic distribution	Number of tranches
Servicer quality	Ratings
	Risk retention
	Addressing balloon risk

Establishing disclosure requirements

- Access to granular loan-level data, both historical and ongoing, could promote investor interest
  - This supports investor protection, improves market efficiency, and reduces systemic risk[(1)]

- Data on insured mortgages could serve as a basis of comparison for the quality of the underlying uninsured mortgages

- In general, disclosure requirements could help establish an appropriate benchmark to determine RMBS spread

(1) See Hendry et al. (2010) "Securitized Products, Disclosure, and the Reduction of Systemic Risk"

Establishing the appropriate vehicle for RMBS issuance

- Benefits of a single-seller:
  - Pricing could potentially reflect more acutely the quality of the mortgage pool

- Benefits of a multi-seller:
  - Standardization of security and pool structures (consistent with items 1 and 2, i.e. setting collateral and deal standards)
  - Backed by common mortgage eligibility requirements
  - Larger issue sizes, promoting liquidity

Potential workshop to further investigate these topics

Proposal:

- A half-day workshop on the issues related to establishing a private RMBS market
  - Participation: could be broader than CFIF membership to include all types of relevant stakeholders (sell-side, buy-side, issuers, and rating agencies)
  - Timing: June / September

- Areas for discussion could include:
  - Current landscape for an RMBS market
  - Supply and demand side impediments to the creation of an RMBS market
  - Measures to support market development

Appendix

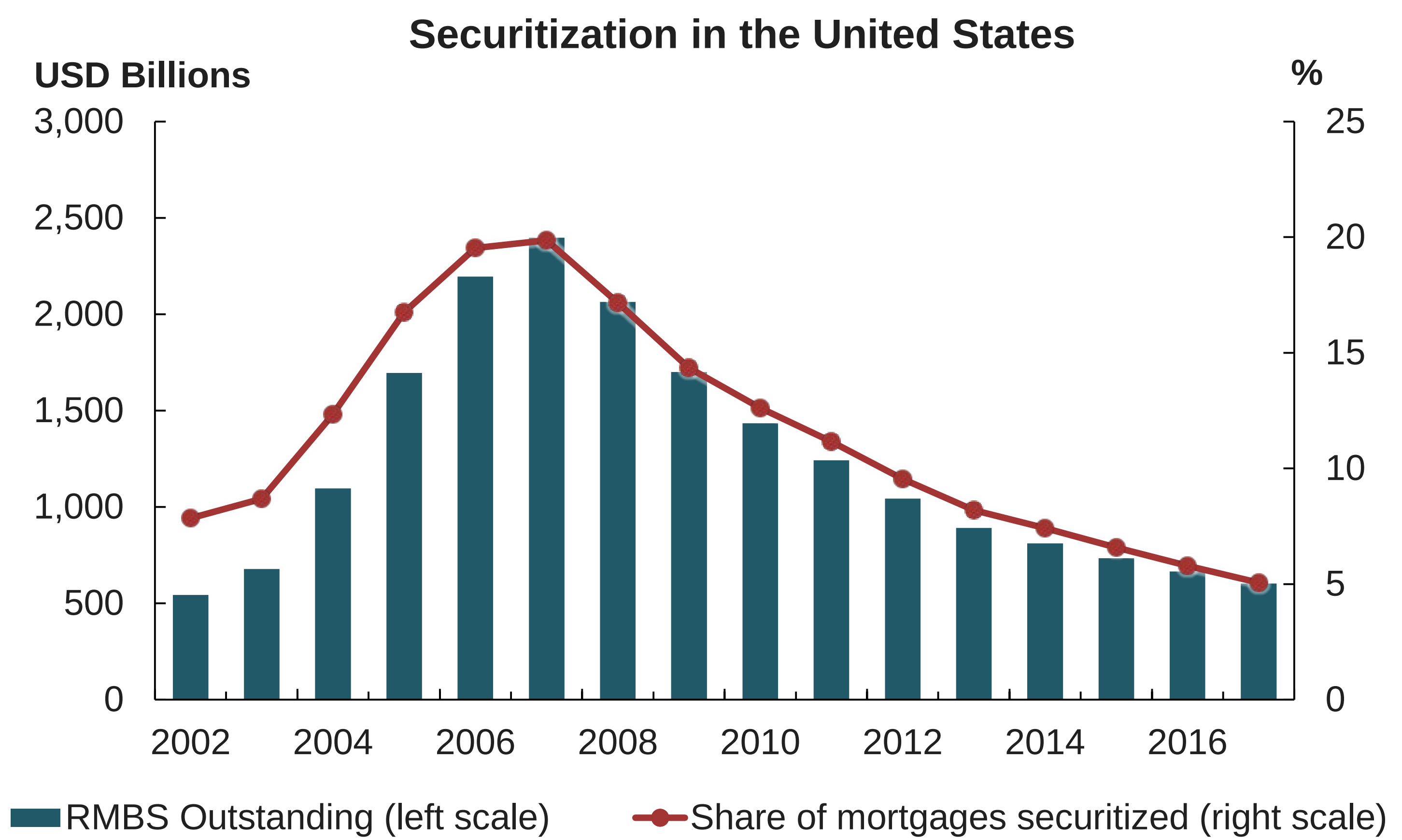
CANADIAN FIXED-INCOME FORUM

Amounts outstanding for covered bonds and RMBS in Europe

	Covered Bonds		RMBS	
	Outstanding, € Billions	% of mortgage debt	Outstanding, € Billions	% of mortgage debt
UK	97	6%	91	6%
Germany	207	18%	1	0%
France	178	18%	3	0%
Netherlands	68	10%	46	7%
Spain	232	44%	43	8%
Italy	139	37%	12	3%
Ireland	17	17%	6	6%
Portugal	33	35%	8	9%
Europe	1,639	21%	213	3%

Source: Deutsche Bank
Last observation: February 2018

RMBS securitization in the U.S.



Notes: Non-agency MBS only

Source: Federal Reserve

Last observation: December 2017