Canadian Fixed Income Forum

NATIONAL BANK FINANCIAL MARKETS

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Canadian Fixed Income ETFs

Landscape & Market Making

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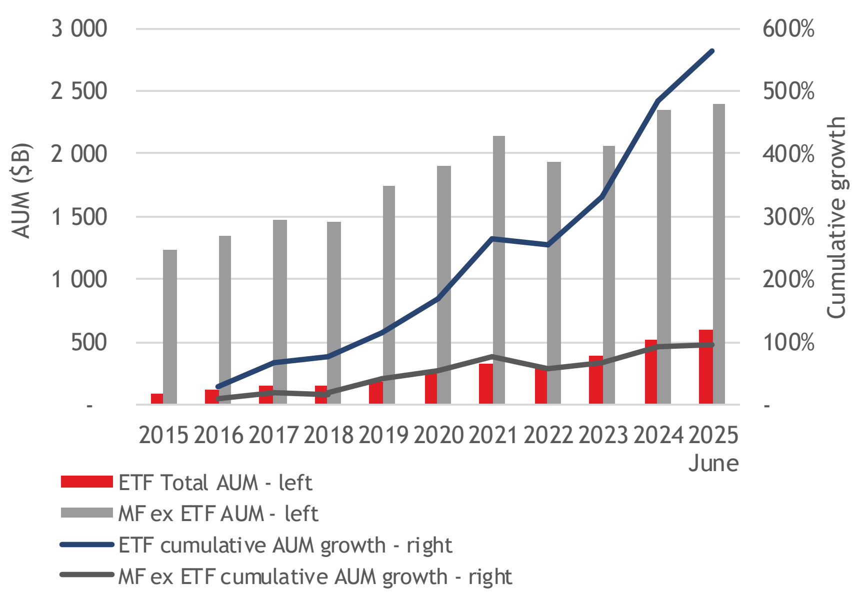
NATIONAL BANK FINANCIAL MARKETS

Industry Overview

ETFs Evolution in Canada (1)

- **Canadian ETFs Market Evolution from 2015 to 2025 YTD**
  - Total AUM grew from 88bln in 2015 to 590bln in 2025
  - Number of ETFs across all asset classes grew from 412 to 1,673
  - MFs continue to dominate overall investment assets, but ETFs have shown faster AUM growth
- **Canadian Fixed Income ETFs Market Evolution from 2015 to 2025 YTD**
  - FI ETFs AUM grew from 31bln to 181bln and now represent 30% of total Canadian ETFs AUM
  - Number of FI ETFs grew from 94 to more than 400 over the period

Chart 1: Canadian ETFs and Mutual Funds AUM



Source: NBCFM ETF Research & Strategy, Bloomberg

Industry Overview

ETFs Evolution in Canada (2)

- The ETFs footprint over Canada's bond market has been growing steadily, but the percentage figure is still relatively small, at around 2.4%. (Chart 2)
- Assets held by Canada corporate bond ETFs represent 2.6% of the Canadian corporate bond market, which is about the same percentage as the overall FI ETFs ratio over the broad Canadian bond market (Chart 3)

Chart 2: CAD FI ETFs as % of Total CAN Bond Market

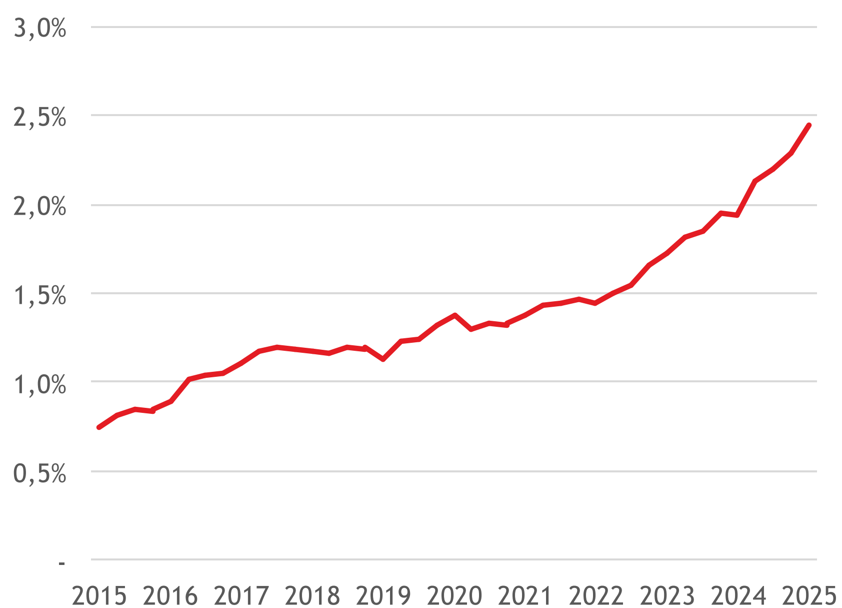
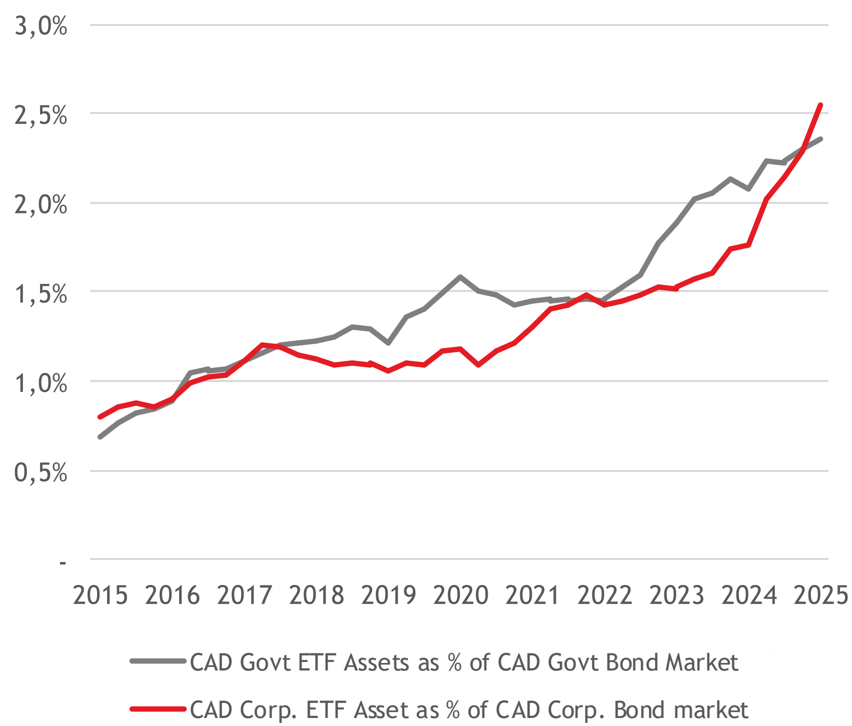


Chart 3: CAD FI ETFs as % of their Respective Markets

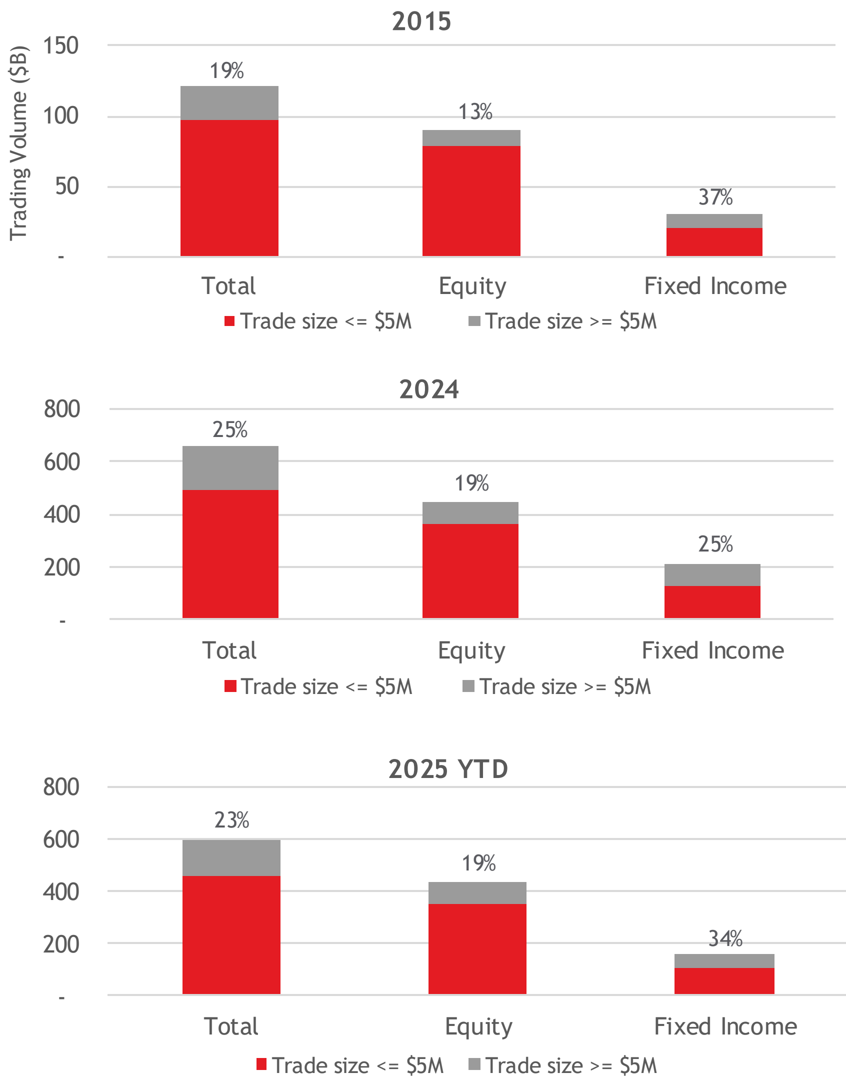


Source: NBCFM ETF Research & Strategy, Bloomberg

Industry Overview

Institutional ETF Trading

Chart 4: Institutional ETF Trading Volume by Asset Class



- Canadian ETFs trading volume has grown rapidly, from $120 billion in 2015 to $658 billion in 2024.
- In 2024, 25% of all ETFs volume came from trades with size greater than $5 mm
- Canadian ETFs trading volume in the first seven months of 2025 has already reached 90% of total trading volume observed in 2024.
- When reported to their respective totals, Fixed Income ETFs witness more institutional trading flow than Equity ETFs

Source: NBCFM ETF Research & Strategy, Bloomberg

Market Making & Related Mechanics

Fixed Income ETFs – Market Making Functions

Fixed Income ETFs - Market Making Functions	
Operations	▪ Standardize data for hundreds of ETFs ▪ Monitoring ETF holdings and risk profiles ▪ Be ready to post on screens
Algos Monitoring	▪ Real time pricing ▪ Monitor algo behavior
FI ETFs Trading	▪ On screen flow trading ▪ Agency related trading ▪ Block trading
Risk Management	▪ Risk assessment, hedging (cash Bonds, ETFs, Derivatives)
Interactions with Issuers	▪ Data integrity related interactions ▪ CR/RD ▪ Custom negotiations

ETF Specificities (1)

Clarify the differences between ETFs NAV and ETFs bid-ask prices

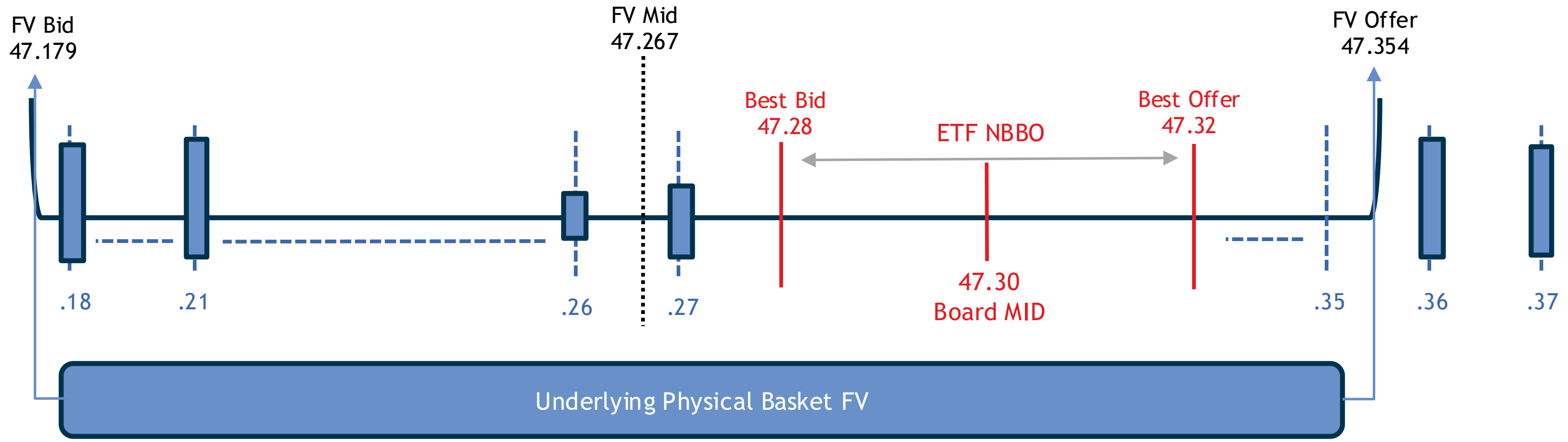
- *ETFs NAV and ETFs bid-ask prices are calculated using a combination of the fund's holdings weights and prices.*

- *ETFs NAV*
  - *FI ETFs NAV calculation method: MID, EOD*
  - *FI ETFs NAV calculation relies on either composite prices sourced from multiple contributors or evaluated prices from pricing services specialists.*

- ETFs bid-ask prices
  - FI ETFs prices: Updated intraday, actionable, price discovery mechanism
  - Fair Value bid-offer prices are subject to the creation/redemption Framework and Constraints (In-Kind and/or in-Cash, Fees, Cut-off time, Size limitation, Standard vs Custom, etc.)
  - Fair Value bid-offer prices are mainly determined the FV of the underlying basket of bonds
  - Fair Value bid-offer prices incorporate the liquidity/borrow status of the underlying bonds

- When traded on the secondary, ETF trading costs are usually externalized to the investor via the bid-offer spread. Mutual funds, on the other hand, usually internalize trading costs and spread them over the remaining unit-holders.

Exhibit 1 : Live example ETF Board vs ETF FV



ETF Specificities (2)

ETF Fair Value Bid/Offer
Example with ZCB

- FV: 47.179 - 47.354
- NBBO: 47.28 – 47.32
  - 3800 x 500 shr.
  - NBBO = National Best Bid-Offer
- NAV calculation method : MID Index
- Market Participants:
  - MM (DB,AP)
  - Natural buyers / sellers
  - Retail investors on the board
  - HFT
  - Day Traders

Exhibit 2 : Trading Board/Listed Market for ZCB

Exchanges: BF CF CJ QH QF DG TA TX CT TG DT DS CV TN

Round Lot 7) Center

1) Price Book 2) Order Book 3) Dual Book

CC	Time	Total	Ord	Size	Bid	Ask	Size	Ord	Total	Time	CC
	14:58	3800	5	3800	47.28	47.32	500	1	500	14:03	
	14:15	12400	8	8600	47.27	47.35	200	2	700	14:56	
	14:49	17200	3	4800	47.26	47.36	65300	21	66000	14:49	
	14:11	17300	1	100	47.23	47.37	43300	12	109300	14:15	
	13:22	17400	1	100	47.22	47.38	17400	4	126700	14:15	
	14:49	32400	2	15000	47.21	47.39	10000	1	136700	14:49	
	14:49	42400	1	10000	47.20	47.40	100	1	136800	12:08	
	14:58	109300	12	66900	47.18	47.41	10000	1	146800	14:58	
	14:58	138300	8	29000	47.17	47.43	200	2	147000	14:03	
	14:49	138900	1	600	47.16	47.50	100	1	147100	14:15	
	14:46	140100	1	1200	47.15	47.54	500	1	147600	09:44	
	14:15	140200	1	100	47.10	47.75	100	1	147700	13:03	
	09:44	140700	1	500	47.08	47.92	100	1	147800	14:03	
	14:05	140800	1	100	46.94						
	13:03	140900	1	100	46.80						
	14:58	141000	1	100	46.68						
		141300	1	300	Under	Over			147800		

BMO Corporate Bond Index ETF

Board snapped as of August 20, 2025 - 15:54:29

Source: Bloomberg

Annex 1 : Industry Overview

Canada-Listed FI ETFs Evolution 2015 - 2025

Table1: Can-listed FI ETFs by Type, 2015

2015

Type	AUM ($mm)	AUM %	ETF Count
Canada Aggregate	7,454	24%	13
Canada Corporate	8,873	29%	19
Canada Government	4,586	15%	17
Foreign	371	1%	6
Money Market	393	1%	2
Preferred/Convertible	3,813	12%	9
Sub-Investment Grade	3,299	11%	14
U.S./North Am	2,330	7%	14
Total	31,118	100%	94

Table 2: Can-listed FI ETFs by Type, 2025

2025

Type	AUM ($mm)	AUM %	ETF Count	AUM Gowth x
Canada Aggregate	53,463	30%	57	6.17
Canada Corporate	29,941	17%	63	2.37
Canada Government	14,375	8%	38	2.13
Foreign	18,022	10%	67	47.56
Money Market	34,267	19%	30	86.30
Preferred/Convertible	6,952	4%	30	0.82
Sub-Investment Grade	6,603	4%	28	1.00
U.S./North Am	17,378	10%	115	6.46
Total	181,002	100%	428	4.82

Table 3: Can-listed FI ETFs by Maturity, 2015

2015

Maturity Class	AUM ($mm)	AUM %	ETF Count
Broad/Mixed	12,151	39%	38
Long Term	1,238	4%	5
Mid Term	3,340	11%	9
Money Market	393	1%	2
Real Return	496	2%	2
Short Term	11,660	37%	23
Target Maturity	409	1%	6
Ultra Short Term	1,432	5%	9
Total	31,118	100%	94

Table 4: Can-listed FI ETFs by Maturity, 2025

2025

Maturity Class	AUM ($mm)	AUM %	ETF Count	AUM Gowth x
Broad/Mixed	88,210	49%	185	6.26
Long Term	8,750	5%	28	6.07
Mid Term	11,370	6%	21	2.40
Money Market	34,267	19%	30	86.30
Real Return	1,254	1%	10	1.53
Short Term	22,862	13%	66	0.96
Target Maturity	5,115	3%	59	11.51
Ultra Short Term	9,176	5%	29	5.41
Total	181,002	100%	428	4.82

Table 5: Can-listed FI ETFs by Issuer, 2015

2015

Issuer	AUM ($mm)	AUM %	ETF Count
RBC iShares	15,200	49%	34
BMO	9,480	30%	21
Vanguard	1,972	6%	5
Global X	1,929	6%	12
Invesco	1,877	6%	9
Purpose	446	1%	3
First Trust	124	0%	3
Others	90	0%	7
Total	31,118	100%	94

Table 6: Can-listed FI ETFs by Issuer, 2025

2025

Issuer	AUM ($mm)	AUM %	ETF Count	AUM Gowth x
BMO	51,731	29%	69	4.46
RBC iShares	37,343	21%	91	1.46
Global X	18,058	10%	22	8.36
Vanguard	11,225	6%	10	4.69
CI GAM	9,152	5%	29	NA
Purpose	7,256	4%	15	15.28
National Bank Invest.	7,163	4%	9	NA
Others	39,073	22%	183	431.99
Total	181,002	100%	428	4.82

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