US Rates Watch

CP monitor: higher non-fin CP & bank CD issuance

Supply: Domestic issuance of non-fin CPs surged

<u>Supply</u>: CP outstanding has overall increased in the month through mid-October. Financial CP supply dropped by \$13bn during this period, but the decline is offset by a notable increase in non-financial CP issuance. In particular, the increase is driven by domestic issuers in the corporate / non-financial sector (Exhibit 4, Exhibit 5).

As of end September, Canada saw the largest issuance in terms of total CPs and in financial CPs (Exhibit 23, Exhibit 25). US was the largest issuer in non-financial CPs (Exhibit 26), which is reflected in the domestic corporates issuer category.

Bank CD issuance has continued to climb over recent weeks and are now at all time high since 2015, which has also driven CD rates to cheapen (Exhibit 7, Exhibit 8). We continue to believe the growth in financial CP & CDs represents banks competing for liquidity (see Banks fighting to keep liquidity).

Demand: still robust with prime MMF extension

<u>Demand</u>: Prime MMF have maintained a higher WAM to support CP issuance at longer tenors. Prime MMF WAMs are now over 30 days vs start of year levels at 10-15 days (Exhibit 10). If prime MMF WAM stabilize around current levels there could be greater cheapening potential amidst continued CP issuance.

Rates: trading in-line with other front-end levels

Rates: Overall fin & non-fin CP rates trade in-line with other money market rates. We see risks that continued aggressive bank CD issuance & funding competition could cheapen rates further (Exhibit 7, Exhibit 11).

Maturity: CP maturing concentrated in US, CA & France

Maturity distribution: Maturity extension of non-asset backed tier-1 CP ticked up over the month through mid-October and is now c. 68-69 days (Exhibit 14). CP maturing in the next 3 months remain primarily in financials (Exhibit 17). Country-wise, the amount of CP maturing is mostly seen in US, Canada, and France (Exhibit 19).

Bottom line: Domestic issuance of non-financial CPs saw notable increase over the month through mid-October. Bank CD issuance continued to climb and are now at all time high since 2015. Ongoing CP & CD issuance raises the risk of a cheapening vs OIS, especially if prime fund WAM does not continue extending.

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CP = commercial paper

CD = certificate of deposit

MMF = money market mutual funds

WAM = weighted-average maturity

O/S = outstanding

ABCP = asset backed commercial paper

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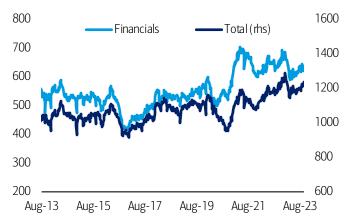
Refer to important disclosures on page 8 to 9.

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Commercial paper outstanding

Exhibit 1: Financial CP vs total CP outstanding (\$bn)

Financials O/S has seen gradual recovery since March bank stress

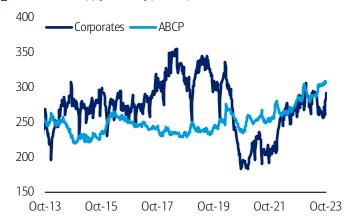


Source: BofA Global Research, Haver

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Exhibit 2: Nonfin CP vs ABCP outstanding (\$bn)

Over the month thru mid-September, nonfin CP issuance saw further decline, ABCP supply modestly picked up



Source: BofA Global Research, Haver

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Exhibit 3: Tier-2 CP outstanding (NSA, \$bn)

Tier-2 CP slightly increased since September



Source: BofA Global Research, Haver

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Exhibit 4: CP outstanding as of 10/18/2023 (NSA, \$bn)

MoM total O/S increased by \$20bn

		Z-score since			Z-score		
	O/S	ΔΜοΜ	2020	ΔΥοΥ	since 2001		
Financials	638	-6	-0.40	-5	-0.11		
ABCP	307	3	0.31	19	0.36		
Corporates	292	20	1.29	8	0.10		
Total (rhs)	1238	17	0.46	23	0.20		
Source: BofA GI	lobal Researd	h, Haver					

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Exhibit 5: Domestic vs foreign issuers in Fin & Corp CP (NSA, \$bn)

Further breakdown shows YoY decline in foreign fin CP is almost 2-sigma below average

			Z-score		Z-score
	O/S	ΔΜοΜ	since 2020	ΔΥοΥ	since 2001
Fin - domestic	268	1	-0.02	33	0.75
Fin - foreign	370	-7	-0.60	-37	-1.46
Corp - domestic	232	25	1.84	14	0.30
Corp - foreign	59	-5	-0.78	-7	-1.12

Source: BofA Global Research, Haver

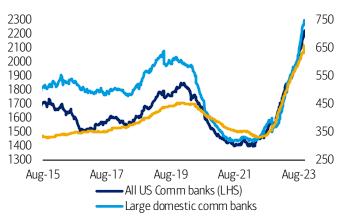
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CD activity

Exhibit 6: US Commercial bank large time deposits as a proxy for CD activity (\$bn)

CD activity saw significant increase since last year

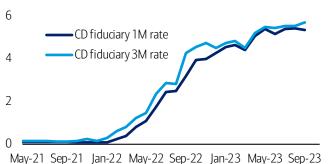


Source: BofA Global Research, Bloomberg

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Exhibit 8: US CD fiduciary 1M & 3M rates (monthly, %)

CD fiduciary rates have cheapened despite levels show signs of moderation recently

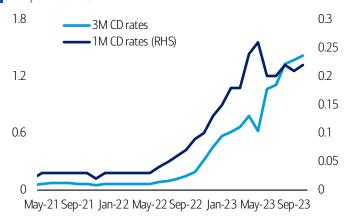


Source: BofA Global Research, Bloomberg; Note: see Appendix for pricing methodology

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Exhibit 7: US FDIC 1M & 3M CD rates (monthly, %)

CD rates has cheapened with aggressive bank CD issuance & funding competition since 2H '22



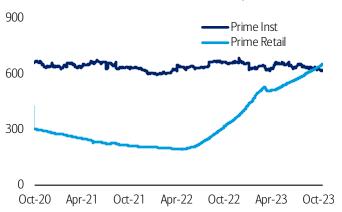
Source: BofA Global Research, Bloomberg; Note: see Appendix for pricing methodology

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MMF AUM & WAM

Exhibit 9: MMF AUM (\$bn)

Retail funds continued to attract inflows due to low deposit alternatives

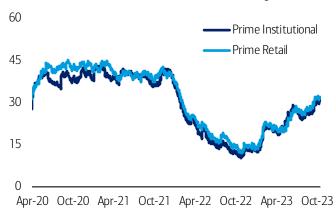


Source: BofA Global Research, Crane Data

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Exhibit 10: MMF WAM (days)

Prime institutional & retail funds have both been extending WAM



Source: BofA Global Research, Crane Data

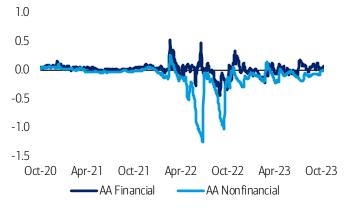
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CP rates & spreads to OIS

Exhibit 11: 3m AA fin & AA non-fin CP spreads to OIS (5D MA, %)

Fin & non-fin CP rates trade in-line with other money market rates



Source: BofA Global Research, Bloomberg

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Exhibit 12: 1-month CP rates levels %, spreads to OIS (5d MA, bp), and z-scores

Z-scores of 1m CP spreads to OIS reflect relatively stable valuations

	Levels as of 10/26/2023	5D MA spreads	Z-score of spreads (5d MA) since 2020
AA Fin	5.4	5.1	0.0
AA Nonfin	5.31	-1.9	0.0
A2 P2 Nonfin	5.52	19.9	-0.2
AA Asset backed	5.38	4.1	-0.1

Source: BofA Global Research, Bloomberg

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Exhibit 13: 3-month CP rates levels %, spreads to OIS (5d MA, bp), and z-scores

Z-scores of 3m CP spreads to OIS reflect relatively stable valuations

	Levels as of 10/26/2023	5D MA spreads	Z-score of spreads (5d MA) since 2020
AA Fin	5.5	7	-0.1
AA Nonfin	5.37	-2	0.0
A2 P2 Nonfin	5.59	27	-0.2
AA Asset backed	5.51	14	-0.1

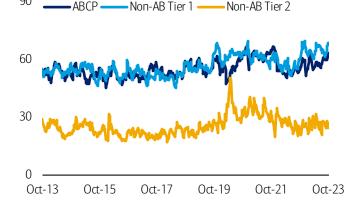
Source: BofA Global Research, Bloomberg

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CP maturity distribution

Exhibit 14: Avg maturity distribution of CP O/S by category (days)

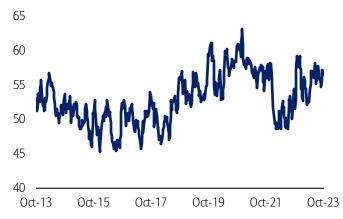
Maturity extension most pronounced for non-asset backed tier 1 issuers



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Exhibit 15: Avg maturity distribution of total CP outstanding (days)

Maturity extension for total CP dropped in September



Source: BofA Global Research, Federal Reserve

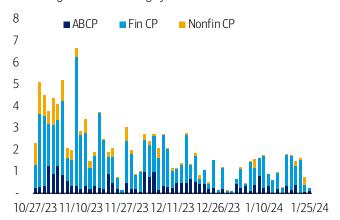
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Source: BofA Global Research, Federal Reserve

Exhibit 16: CP maturing in the next 3 months (\$bn)

CP maturing in the next 3m largely concentrated in financial CP

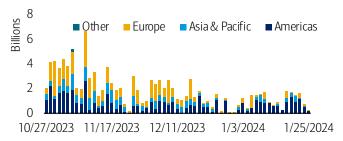


Source: BofA Global Research, Crane

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Exhibit 18: CP maturing by region (\$bn)

Amount of CP maturing mostly seen in Americas $\&\, Europe$

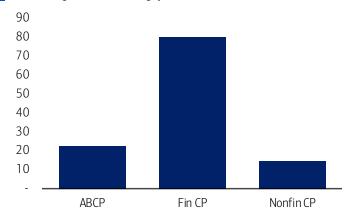


Source: BofA Global Research, Crane Data

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Exhibit 17: Total CP maturing in the next 3 months by category (\$bn, as of 10/26/2023)

CP maturing in the next 3m largely concentrated in financial CP

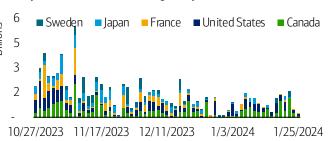


Source: BofA Global Research, Crane

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Exhibit 19: Top 5 CP maturing by country (\$bn)

Country-wise amount of CP maturing mostly seen in Canada, France $\&\, \text{US}$



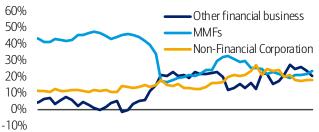
Source: BofA Global Research, Crane Data

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CP holders

Exhibit 20: Top 3 holders CP holdings over time

CP demand from other financial business declined in Q2 '23



Mar-11 Dec-12 Sep-14 Jun-16 Mar-18 Dec-19 Sep-21 Jun-23

Source: BofA Global Research, Federal Reserve

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Exhibit 21: CP holders as of end Q2 2023 (% total)

The largest CP buyers in Q2 '23 is money market mutual funds

	Şbn	% Total
MMFs	263	23.3%
Other Financial Business	234	20.8%
NonFinancial Corporation	206	18.2%
Foreign Institutions	172	15.2%
Other	-875	-77.5%
State & Local Govt	87	7.7%
Mutual Funds	40	3.5%
Total	1130	100%

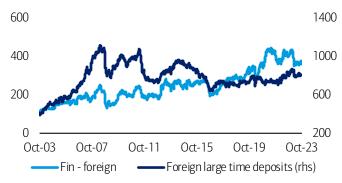
Source: BofA Global Research, Federal Reserve

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Foreign CP

Exhibit 22: Foreign fin CP outstanding & large time deposits (NSA, Sbn)

Foreign fin CP & large time deposits have stabilized recently



Source: BofA Global Research, Haver

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CP issuers

Exhibit 23: Total CP top 5 issuers by country (as of 09/30/2023)

Canada was the largest issuer in terms of total CP

	\$bn	% Total
Canada	62	22%
United States	49	17%
France	40	14%
Japan	24	8.4%
Sweden	21	7.3%

Source: BofA Global Research, Crane

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Exhibit 24: ABCP top 5 issuers by country

France has the largest issuance in ABCP

	\$bn	% Total
France	18	30%
United States	13	22%
Canada	12	20%
Japan	7	11%
United Kingdom	6	11%

Source: BofA Global Research, Crane

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Exhibit 25: Fin CP top 5 issuers by country

Canada leads the largest issuance in financial CP

	\$bn	% Total
Canada	45	24%
United States	20	11%
Sweden	19	10%
France	16	9%
Germany	16	8%
Source: BofA Global Research	rh Crane	

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Exhibit 26: Nonfin CP top 5 issuers by country

US leads the largest issuance in non-financial CP

	\$bn	% Total
United States	15	40%
France	6	17%
Canada	5	14%
Netherlands	3	9%
Germany	3	7%

Source: BofA Global Research, Crane

Appendix

US CD fiduciary rates

The source for 1-month & 3-month CD fiduciary rates (BBG tickers: USFCDA CMPN Curncy & USFCDC CMPN Curncy) is the Bloomberg Composite Rate (CMP), which is a "best market" calculation. According to Bloomberg, "at any given point in time, the composite bid rate is equal to the highest bid rate of all of the currently active, contributed, bank indications. The composite ask rate is equal to the lowest ask rate offered by these same active, contributed, bank indications. For rates to be accepted into the composite, they must come from data contributors who have been "privileged" to send data to the composite, and the pricing must be considered valid and current."

US FDIC CD rates

The source for 1-month & 3-month FDIC CD rates (BBG tickers: USNTN1MO Index & USNTN3MO Index) comes directly from FDIC (www.fdic.gov/resources/bankers/national-rates/previous-rates.html). The latest update from FDIC indicates "The Final Rule redefined the "national rate" as the average of rates paid by all insured depository institutions and credit unions for which data is available, with rates weighted by each institution's share of domestic deposits. The "national rate cap" is calculated as the higher of: (1) the national rate plus 75 basis points; or (2) 120 percent of the current yield on similar maturity U.S. Department of the Treasury (U.S. Treasury) obligations plus 75 basis points. The national rate cap for non-maturity deposits is the higher of the national rate plus 75 basis points or the federal funds rate plus 75 basis points."



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