Outlook for U.S. Residential Mortgage Finance 2023

Whalen Global Advisors

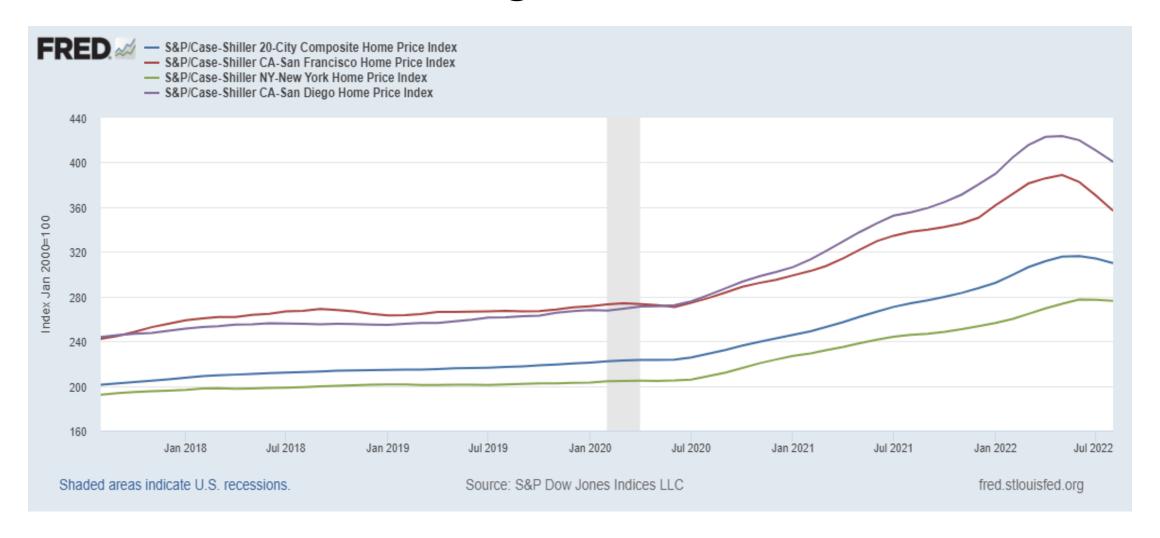
December 2022

Home Price Outlook 2023

 Home prices are expected to fall by double-digits in 2023, with the highest drop in prices above the ~ \$300k average loan size. GSEs have put \$4.4 billion aside for losses resulting from lower home prices. Banks, REITs face future losses due to lower prices for loans, MBS and assets

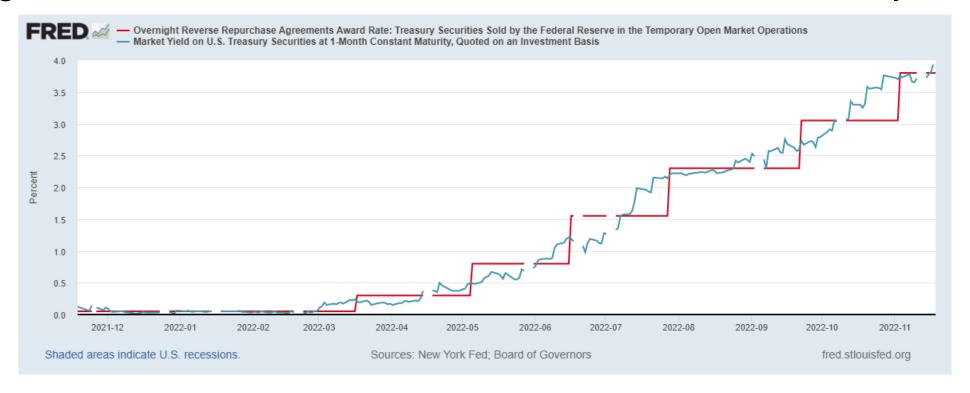
 Residential homes collectively lost \$1.3 trillion or 7.6% of their equity during 3Q 2022 according to Black Knight, the largest quarterly drop in dollar volume ever and the biggest falloff on a percentage basis since 2009

Home Price Change Accelerates



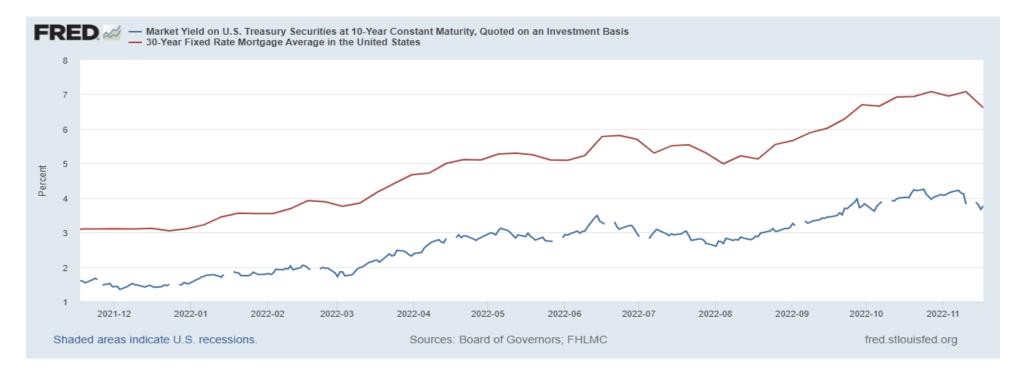
Interest Rate Outlook 2023-2024

• FOMC is expected to raise the target for fed funds another 50-75bp in December, moving the terminal rate close to 5% or the highest level since 2007. Smaller increases in 2023 likely



Interest Rate Outlook 2023-2024

Average loan coupon in FHLMC survey touched 7% in September, but inferior loans already in 8s and higher. Rally in November helped to improve loan rate due to hope/expectation of FOMC pause



Rate Increase Creates Capital Risk

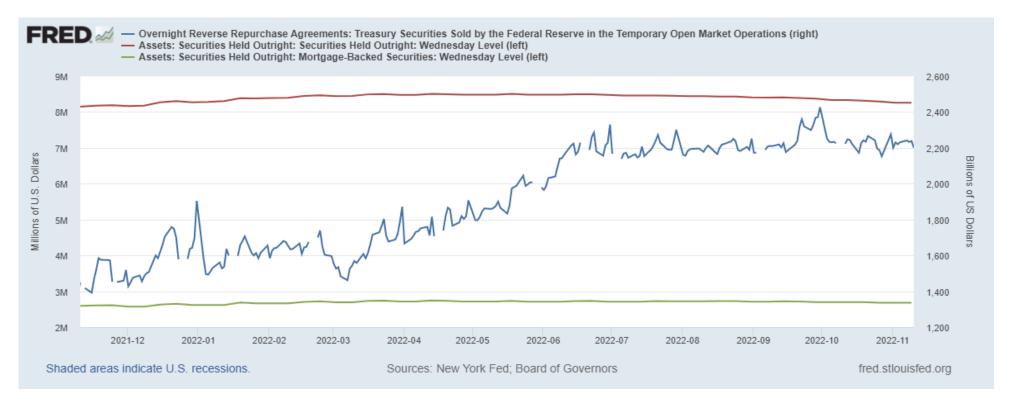
- Large move in interest rates during 2022 caused over \$1 trillion in unrealized losses to banks and investors in bonds, MBS and loans, an unresolved issue that carries into 2023
- Rising interest rates are also throttling new issuance volumes, Agency fixed rate MBS supply expected to almost be cut in half from \$550 billion in 2022 to \$300 billion in 2023
- Literally dozens of depositories and REITs have suffered significant unrealized capital impairments due to Fed rate hikes, calling into question whether the FOMC even can raise interest rates further

Return of the Distressed Loan Trade

- Unprecedented, 400bp move in mortgage rates opens up a large opportunity to acquire and resolve defaulted loans. As economy moves into recession and credit default rates normalize, delinquent loans become asset class of choice
- Even as banks and REITs lose billions due to the sharp decline in prices for low-coupon MBS and whole loans, investors will acquire these assets at a sharp discount, enabling meaningful assistance to the borrower and double-digit returns

Fed SOMA Portfolio & RRPs

• Fed portfolio of low-coupon Treasury and MBS collateral is running off slowly. Effective average life for SOMA MBS is well-above 12 years vs < 4 years at time of issuance. Net new MBS supply in 2023 will approximate runoff from Fed portfolio



Loan Delinquency

- Published statistics for current loan delinquency are stable or even falling, but default advances on FHA/VA/USDA loans are rising among issuers with higher levels of delinquency
- Since the end of Q1 2022, default servicing advances have risen by as much as 1/3 through October of 2022, suggesting that an upsurge in Ginnie Mae loan defaults may be come in 2023
- Loss given default (LGD) on bank owned 1-4s and multi-family loans still in negative territory, but look for a rapid mean reversion in 2023 for lower quality Ginnie Mae assets as home prices decline

Loan Delinquency Falls

Delinquency Rates 1-4s	Total Loans	Conventional	FHA	VA	Bank Owned
2022 Q3	3.45%	2.52%	8.52%	3.71%	NA
2022 Q2	3.64%	2.64%	8.85%	4.22%	1.51%
2021 Q4	4.65%	3.58%	10.76%	5.24%	2.04%
2020 Q4	6.73%	5.09%	14.65%	7.29%	2.50%
2019 Q4	3.77%	2.82%	8.38%	3.64%	1.76%
2018 Q4	4.06%	3.19%	8.65%	3.71%	2.05%
2009 Q4	9.47%	6.73%	13.57%	7.41%	7.75%

Source: MBA/FDIC

Market Indicators

Rate Stress Impacts Volumes

- Premium Fannie Mae coupon MBS for delivery in December is currently a 6.5% coupon trading ~ 102 and perhaps headed for 7% after December rate hike. New production mortgages still in 7% range, implying secondary market loss upon sale
- Issuers continue to pull back away from wholesale and correspondent channels as cost pressures and the lack of profit on sale force capacity reductions. BMO assumes total home sales to average only 5.2m units in 2023, close to the average observed from 2011-2014

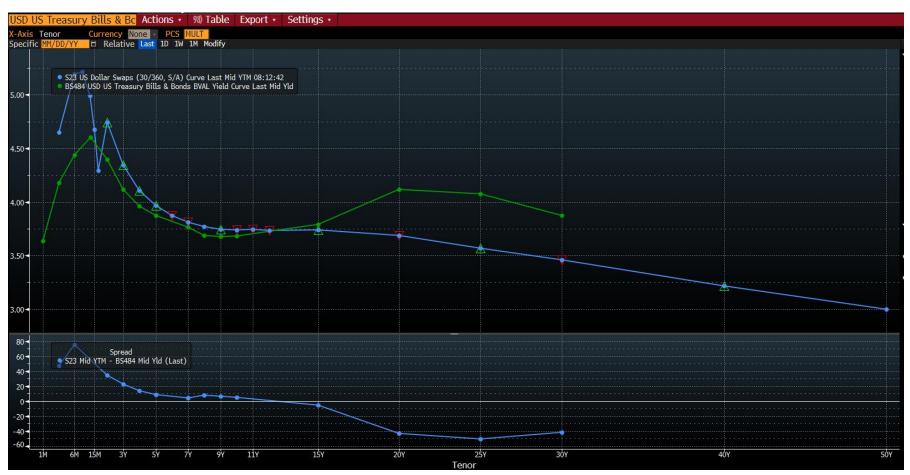
TBAs Point to 8% Loan Coupons

19:43 Outright Switch Bfly * Market Closed * 4) MBS 5) Swaps 6) Basis 7) Butterflies 8) TBA30 9) TBA15								
21) SW30 22) SW15								
FNCL Dec •	G2/FN	15 Yr/30 Yr Swap - Dec						
Cpn Bid / Ask Chg	Bid/Ask	Cpn	Price Spread					
3.5 90-18 / 19+ - 05+	1-04+ / 09	3.5-4	1-25 / 28+					
4.0 93-21 / 22+ - 06+	0-25+ / 30+	4-4.5	0-23+ / 28					
4.5 96-12 / 13+ - 07	0-19+ / 24+	4.5-5	0-05 / 10+					
5.0 98-23 / 25 - 06	0-13+ / 21+	5-5.5	0-03 / 08+					
5.5 100-14 / 15 - 06	0-01 / 04+	5.5-6	0-07 / 12					
6.0 101-18+ / 21 - 04+	-0-12+ / - 07+	6-6.5	-0-04 / - 01					
6.5 102-13 / 15 - 05+	-0-17 / - 12							
Cpn Swap 30 - Dec	Benchmarks							
Cpn Price Spread	Treas 2Y 99-22 ¹ ₄	/ 22 ⁵ 8	4.539 / 533 - 04 ³ ₄					
4-3.5 3-01+ / 04+	Treas 3Y 100-17 ¹ ₄	/ 18	4.305 / 297 - 07 ¹ / ₄					
4.5-4 2-21+ / 24+	Treas 5Y 100-16	/ 16+	4.012 / 008 - 1014					
5-4.5 2-09+ / 13	Treas 7Y 100-12+	/ 14	3.935 / 927 - 12+					
5.5-5 1-21 / 24	Treas 10Y 102-13+	/ 14	3.831 / 829 - 17					
6-5.5 1-03+ / 07	Treas 30Y 101-06+	/ 09+	3.931 / 926 - 29					
6.5-6 0-24 / 28+								

The 6.5% coupon for FNMA MBS in December offers best premium potential, but loan coupons remain in the 7s for better assets. Secondary loan spreads < 1%, suggest higher loan coupon rates lie ahead.

Source: Bloomberg (11/18/22)

Interest Rate Bias Bullish



Yield curve remains inverted, with dollar swaps trading through the Treasury yield curve from 10 years out to 50-year swaps at just 3% yield. Is this a market that wants to see higher yields?

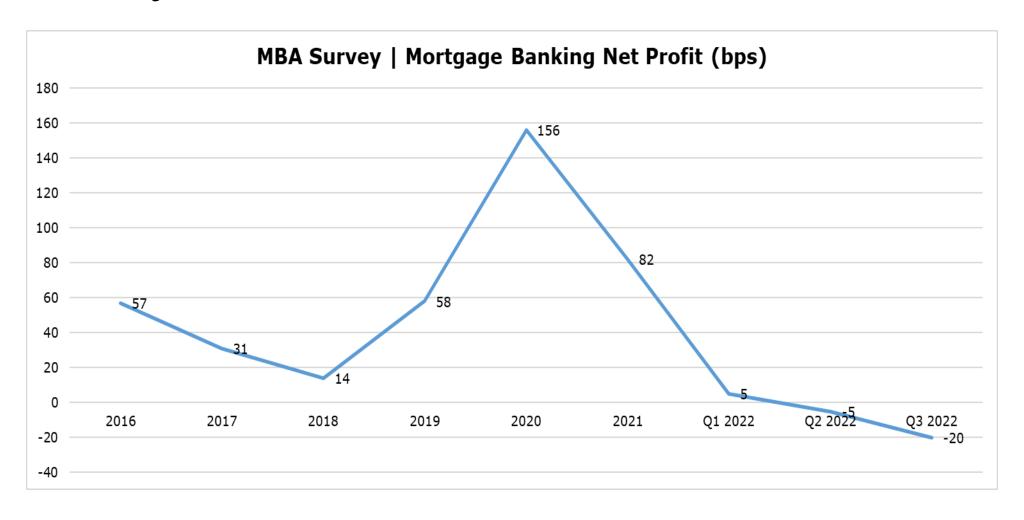
Source: Bloomberg (11/18/22)

Rate Stress Impacts Volumes, Profits

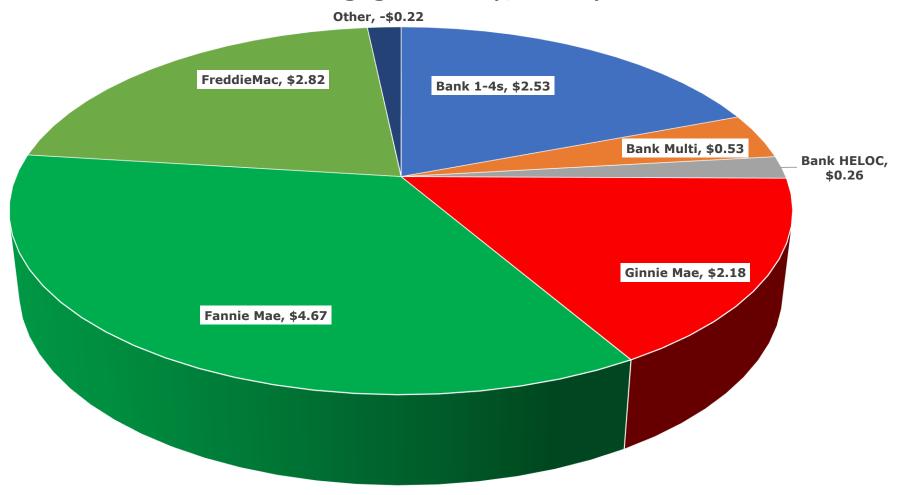
 Angel Oak (AMOR), Finance of America (FOA) latest exits from retail non-QM mortgages, illustrating falling liquidity in fringe markets outside agency/government channels

 United Wholesale Mortgage (UWM) and Rocket Mortgage (RKT), are offering an explicit "buydown" – aka subsidies – to convince borrowers to take a new loan. But these gimmicks result in loans with elevated default probability

Industry Income at Record Lows

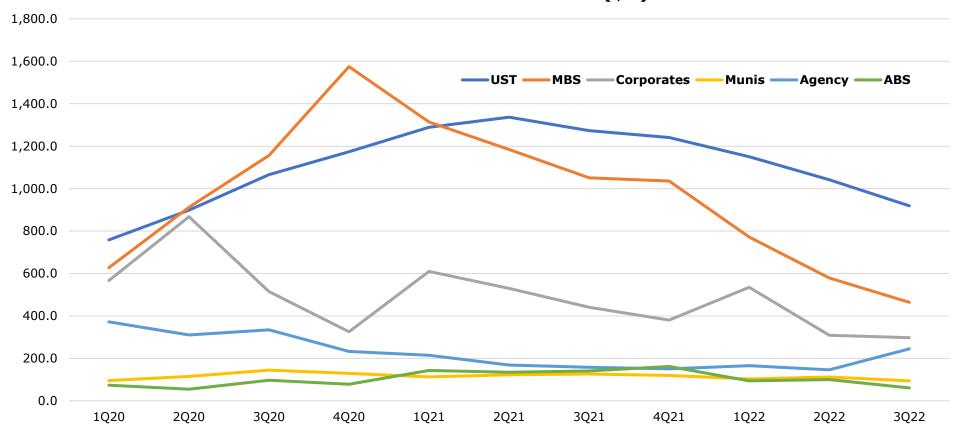


Residential Mortgage Loans (\$12.8 T)

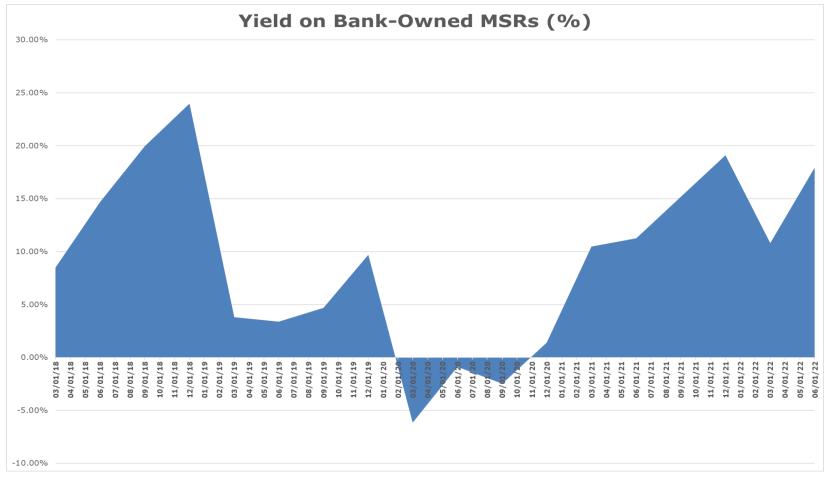


MBS Issuance Falling

SIFMA Securities Issuance (\$B)

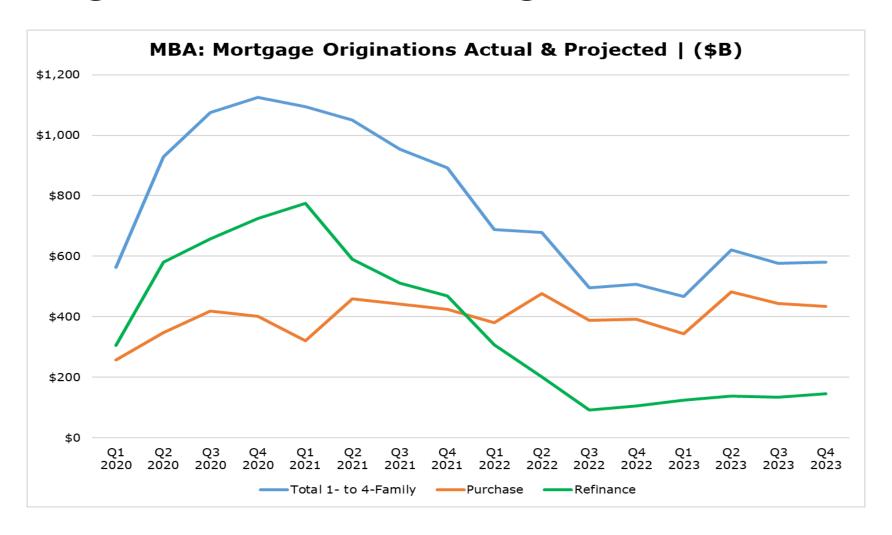


Mortgage Servicing Profits Rising

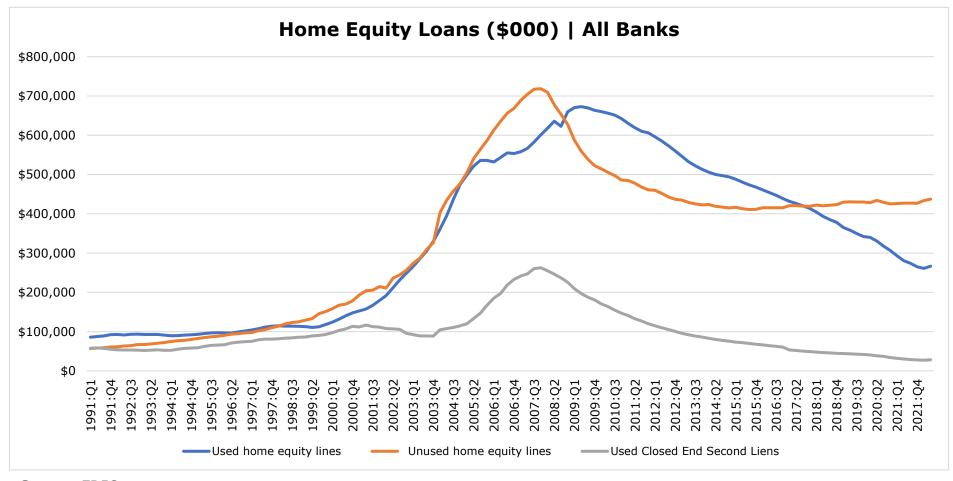


Source: FDIC/WGA LLC

Lending Volumes Falling



Home Equity Loans Growing

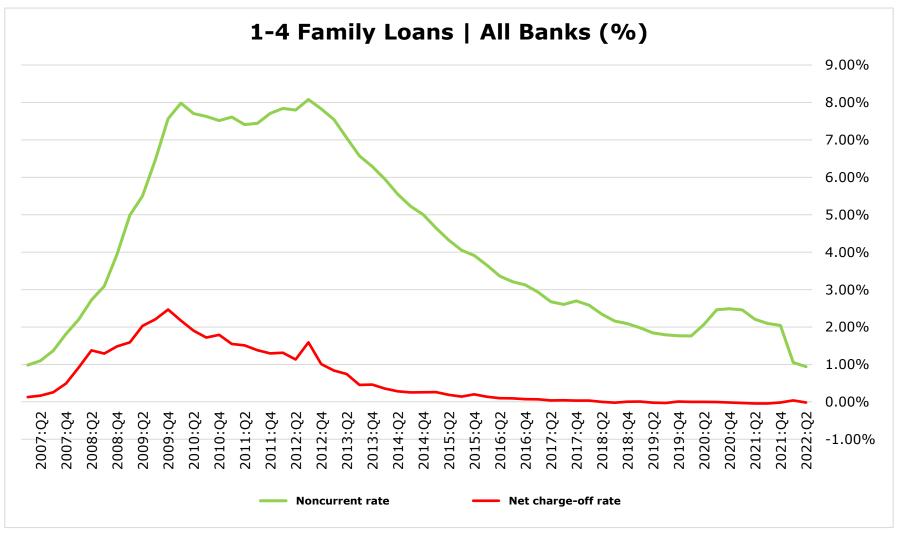


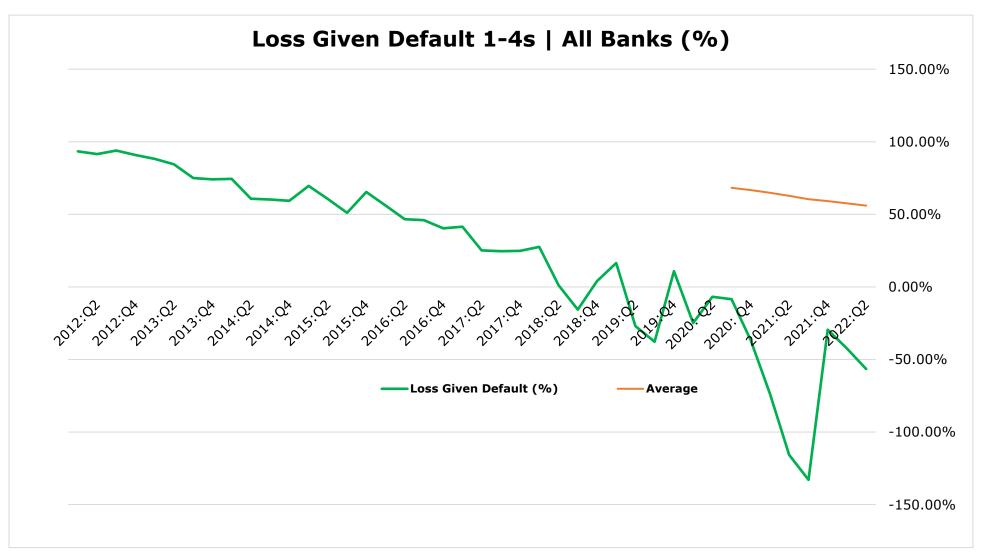
ISSUER	SYMBOL	PRICE/BOOK	MRKT BETA	YTD %	CREDIT DEFAULT
					SWAPS (BP)
BLEND LABS INC	BLND	2.40	1.49	75.07	369.79
LOANDEPOT INC	LDI	0.96	1.18	68.13	262.12
FINANCE OF AMERICA	FOA	0.33	1.07	60.45	290.76
CHIMERA INV CORP	CIM	0.86	1.28	57.36	238.38
REDWOOD TRUST	RWT	0.74	1.22	43.21	249.69
ROCKET COS INC	RKT	1.64	1.54	42.33	172.74
ANGEL OAK MORTGAGE	AOMR	0.91	1.04	40.90	323.95
MFA FINANCIAL	MFA	0.70	1.28	40.84	54.25
AGNC INVESTMENT	AGNC	0.91	1.04	39.30	213.93
WESTERN ALLIANCE	WAL	1.61	1.27	36.79	105.05
ANNALY CAPITAL	NLY	1.00	1.09	36.35	214.88
MERIDIANLINK	MLNK	2.02	0.87	32.62	172.70
FIRST AMERICAN	FAF	1.22	1.04	32.19	108.93
TWO HARBORS	TWO	0.97	1.11	31.02	248.52
UWM HOLDINGS	UWMC	2.60	1.24	30.91	201.57
BLACK KNIGHT	BKI	3.72	0.63	26.65	113.15
NEW YORK MTGE	NYMT	0.74	1.23	26.08	222.12
GUILD HOLDINGS	GHLD	0.51	0.71	24.31	183.74
FIDELITY NATIONAL	FNF	1.89	0.97	23.92	96.83
INTERCONTINENTAL	ICE	2.60	0.87	23.81	95.41
PENNYMAC	PFSI	0.80	1.27	21.55	191.76
ELLINGTON	EFC	0.91	1.01	19.31	181.10
RITHM CAPITAL CO	RITM	0.72	1.17	18.77	209.46
OCWEN FINANCIAL	OCN	0.48	1.03	16.99	230.09
FLAGSTAR BANCORP	FBC	0.76	1.15	16.18	88.67
ESSENT GROUP LTD	ESNT	0.96	1.01	15.73	95.08
PENNYMAC MORTGAG	PMT	0.93	1.18	13.21	222.82
LADDER CAPITAL	LADR	0.93	0.98	8.09	171.39
FISERV INC	FISV	2.09	0.97	3.79	99.79
MR COOPER	COOP	0.74	1.03	3.94	166.20
ARCH CAPITAL GRP	ACGL	1.94	0.77	29.74	66.28
	AVERAGE	1.28	1.09	NM	182.62

Our equity surveillance group for mortgage issuers and vendors remains under pressure due to falling industry volumes. Keep in mind, however, that some of these book value multiples are exaggerated by lofty MSR valuations. The same interest rate dynamics that are causing huge M2M losses to banks and REITs are inflating book value of MSRs. Notice that the average CDS spread for the group is 180bp vs low triple or double digits for banks like WAL and FBC

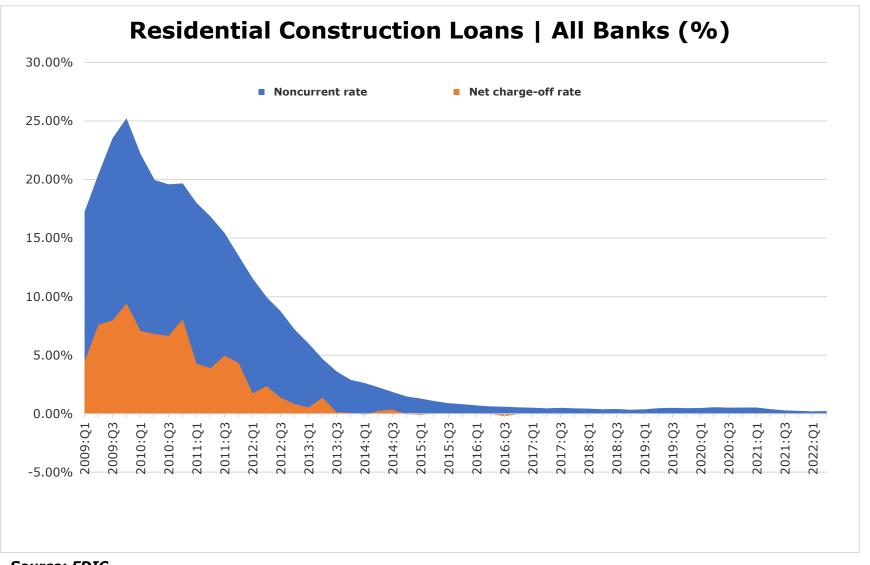
Source: Bloomberg, CapIQ

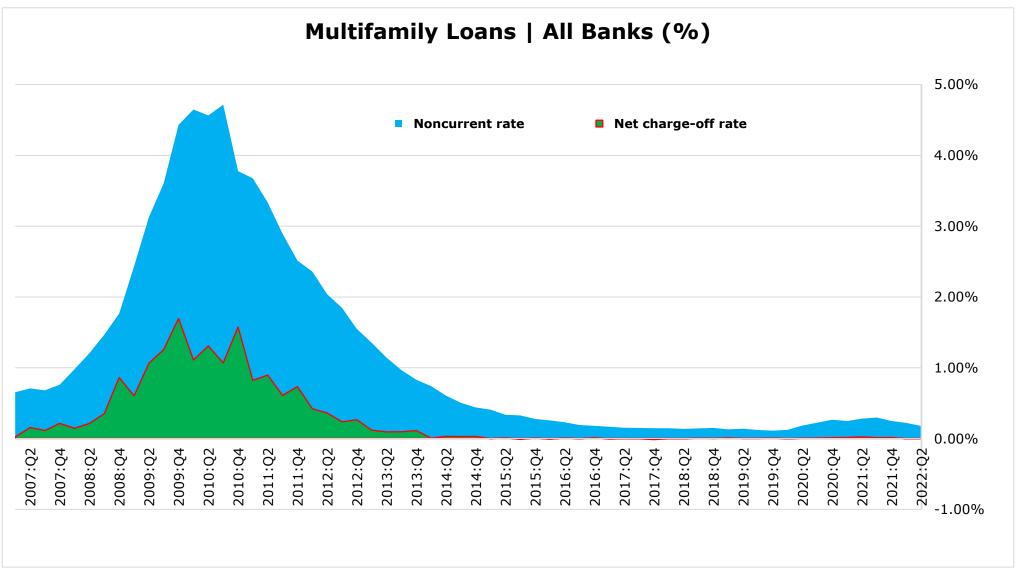
Credit Charts

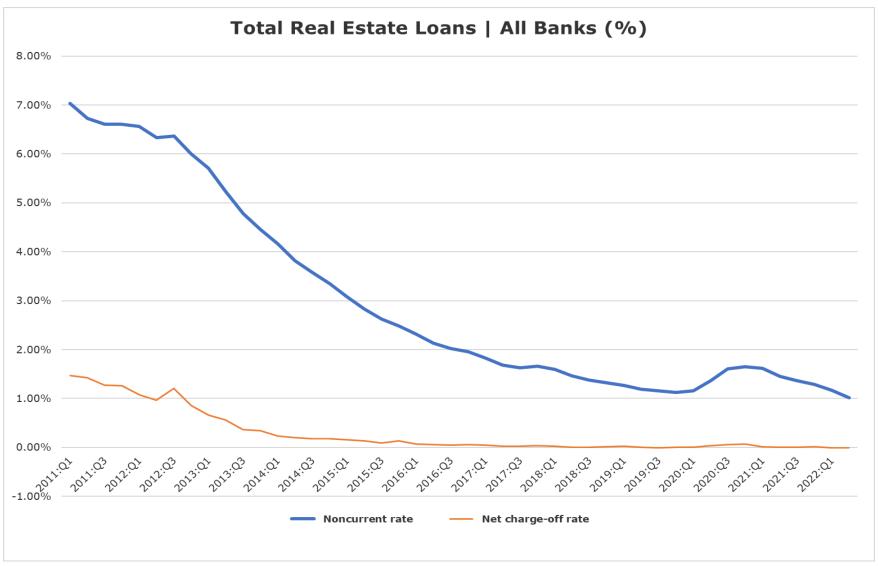




Source: FDIC/WGA LLC







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