



WILARY WINN LLC

ADVICE TO
STRENGTHEN
FINANCIAL
INSTITUTIONS

Mortgage Banking Trends and Mortgage Servicing Rights

June 2023

6/27/2023

TOPICS FOR TODAY'S SESSION

1) Mortgage Marketplace

- a. Origination Market
- b. Affordability
- c. Credit Enhancement
- d. Servicing Market

2) Mortgage Servicing Rights (MSRs)



Douglas Winn

Mr. Winn has nearly 40 years of executive level financial experience. He is a nationally recognized expert regarding accounting and regulatory reporting for financial institutions. Doug regularly advises major accounting firms on areas where finance and accounting intersect, including valuation. Many Wilary Winn white papers, which he has authored or co-authored, are considered standards for the industry. Mr. Winn is regularly invited to speak at conferences, and he has led seminars sponsored by the AICPA, the FDIC, the FFIEC, the FHLBanks, the NCUA, and many of the country's largest accounting firms.

Doug co-founded Wilary Winn and is responsible for the firm's strategic direction. From just an idea in 2003, Wilary Winn has grown into a national presence with financial institution clients located across the United States. Wilary Winn's clients include over 300 community banks, 73 of which are publicly traded, and nearly 300 credit unions, including 41 of the top 100.

In his earlier career, Doug held multiple senior executive finance roles in the mortgage banking industry. He began his career as a practicing CPA for Arthur Young & Company – now Ernst & Young.

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Research and Whitepapers: www.wilwinn.com



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Eric Nokken

Mr. Nokken has over twenty years of experience in the financial services industry and has been with Wilary Winn since 2004.

Mr. Nokken leads Wilary Winn's mortgage banking activities line of business. Eric's team provides mortgage servicing rights valuations on portfolios that range in size from \$4 million to over \$4 billion for more than 400 clients across the country. Eric is an expert in the accounting and regulatory reporting related to mortgage banking activities, including interest rate lock commitment and forward loan sale commitment derivatives, as well as mortgage servicing rights.

Mr. Nokken also values commercial servicing rights, SBA servicing rights and gain on sale calculations related to SBA loan sales as well as auto, home equity and HELOC servicing related to loan sale participations.

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MORTGAGE
MARKETPLACE:
Origination Market

Mortgage Marketplace

Mortgage Originations by Product (\$B)

MORTGAGE ORIGINATIONS BY PRODUCT (\$B)								
Year	Government	Conforming Conventional	Jumbo	Expanded Credit	Total	ARMs	Refinance	Purchase
2004	135	1,210	515	730	2,590	1,464	1,341	1,248
2005	90	1,090	570	1,005	2,755	1,490	1,390	1,365
2006	80	990	480	1,000	2,550	1,340	1,249	1,301
2007	116	1,151	348	466	2,081	724	1,081	1,000
2008	293	928	98	65	1,384	236	702	682
2009	451	1,201	97	10	1,759	114	1,218	541
2010	377	1,092	104	8	1,581	156	1,063	518
2011	294	963	170	18	1,445	197	945	500
2012	390	1,438	225	23	2,076	213	1,489	587
2013	366	1,174	272	18	1,830	196	1,096	734
2014	277	767	235	21	1,300	220	517	783
2015	416	967	328	24	1,735	199	811	924
2016	502	1,148	383	32	2,065	212	1,028	1,037
2017	444	1,008	320	38	1,810	216	678	1,132
2018	367	937	281	45	1,630	206	479	1,151
2019	516	1,365	392	52	2,325	255	1,069	1,256
2020	765	2,863	435	37	4,100	252	2,627	1,473
2021	736	3,011	644	48	4,440	267	2,596	1,844
2022	429	1,430	416	51	2,325	254	727	1,598

Source: Inside Mortgage Finance



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Mortgage Marketplace

Mortgage Originations by Product (Percent)

PERCENTAGE OF MORTGAGE ORIGINATIONS BY PRODUCT								
Year	Government	Conforming Conventional	Jumbo	Expanded Credit	Total	ARMs	Refinance	Purchase
2004	5%	47%	20%	28%	100%	57%	52%	48%
2005	3%	40%	21%	36%	100%	54%	50%	50%
2006	3%	39%	19%	39%	100%	53%	49%	51%
2007	6%	55%	17%	22%	100%	35%	52%	48%
2008	21%	67%	7%	5%	100%	17%	51%	49%
2009	26%	68%	6%	1%	100%	6%	69%	31%
2010	24%	69%	7%	1%	100%	10%	67%	33%
2011	20%	67%	12%	1%	100%	14%	65%	35%
2012	19%	69%	11%	1%	100%	10%	72%	28%
2013	20%	64%	15%	1%	100%	11%	60%	40%
2014	21%	59%	18%	2%	100%	17%	40%	60%
2015	24%	56%	19%	1%	100%	11%	47%	53%
2016	24%	56%	19%	2%	100%	10%	50%	50%
2017	25%	56%	18%	2%	100%	12%	37%	63%
2018	23%	57%	17%	3%	100%	13%	29%	71%
2019	22%	59%	17%	2%	100%	11%	46%	54%
2020	19%	70%	11%	1%	100%	6%	64%	36%
2021	17%	68%	15%	1%	100%	6%	58%	42%
2022	18%	62%	18%	2%	100%	11%	31%	69%

Source: Inside Mortgage Finance



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Mortgage Marketplace

Mortgage Lender Trends

MORTGAGE LENDER TRENDS				
Year	Top 100			Market Total
	Depositories	Nonbank	Total	
2021	1,095	2,581	3,676	4,440
2022	650	1,220	1,870	2,325

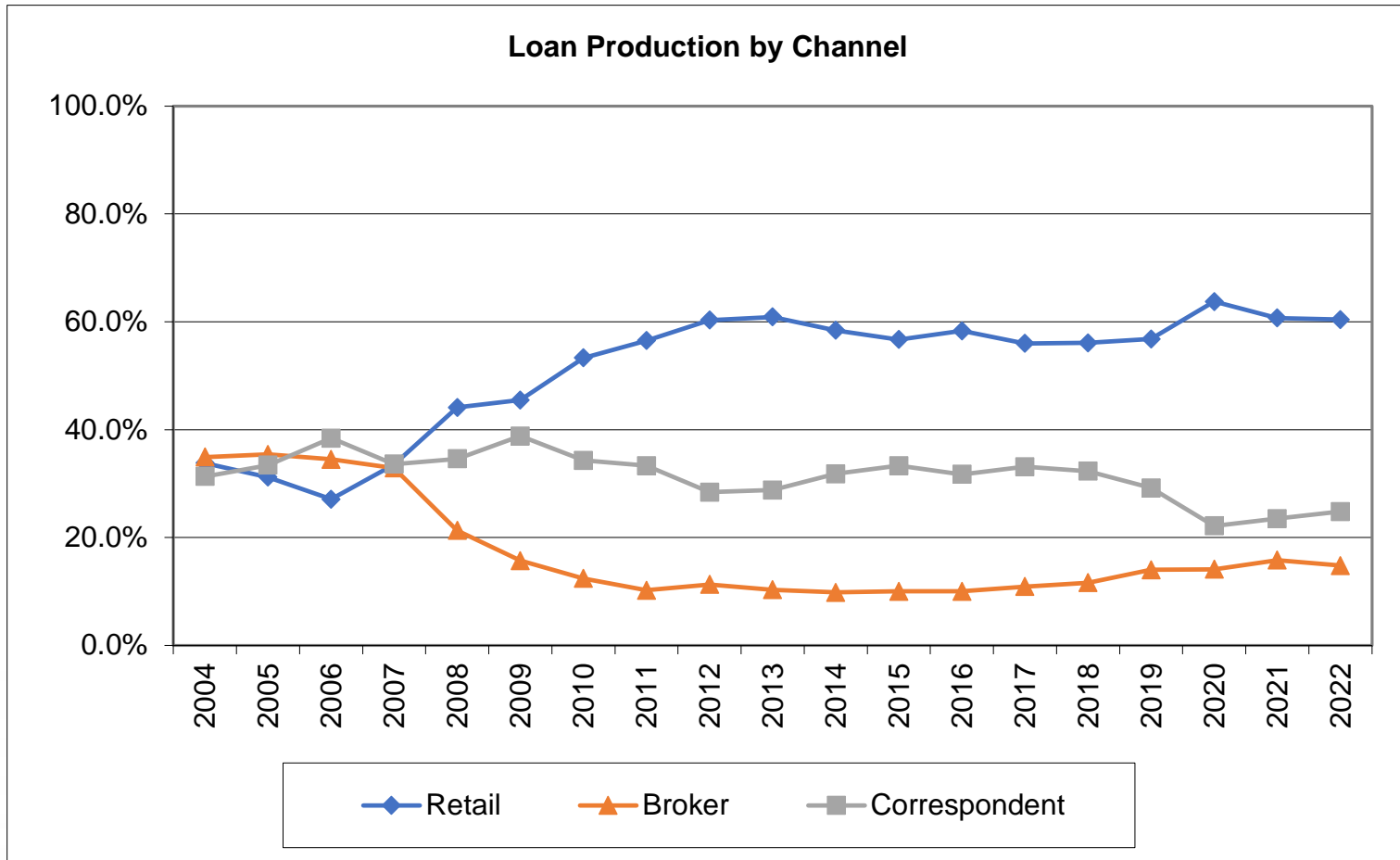
Year	Top 100			Top 100 - % of Market Total
	Depositories	Nonbank	Total	
2021	29.8%	70.2%	100.0%	82.8%
2022	34.8%	65.2%	100.0%	80.4%

Source: Inside Mortgage Finance



Mortgage Marketplace

Loan Production by Channel



Source: Inside Mortgage Finance



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Mortgage Marketplace

Top 30 Lenders

RESIDENTIAL MORTGAGE LOAN VOLUME								
2022 Rank	Lender	2022		2021		Change 2022 vs. 2021		Type
		Total	Share	Total	Share	Total	Share	
1	Rocket Mortgage, MI	133.13	5.7%	355.34	7.4%	(222.21)	-1.6%	PNB
2	United Wholesale Mortgage, MI	127.29	5.5%	226.50	4.7%	(99.22)	0.8%	NB
3	PennyMac Financial, CA	108.93	4.7%	235.18	4.9%	(126.25)	-0.2%	PNB
4	Wells Fargo & Company, IA	108.08	4.6%	205.01	4.2%	(96.93)	0.4%	
5	Chase, NJ	81.80	3.5%	182.31	3.8%	(100.52)	-0.3%	
6	NewRez/Caliber, NY	67.61	2.9%	180.80	3.7%	(113.19)	-0.8%	PNB
7	U.S. Bank Home Mortgage, MN	56.56	2.4%	102.07	2.1%	(45.51)	0.3%	
8	loanDepot.com, CA	53.77	2.3%	137.02	2.8%	(83.25)	-0.5%	NB
9	Guaranteed Rate Inc., IL	53.37	2.3%	114.54	2.4%	(61.17)	-0.1%	NB
10	AmeriHome Mortgage, CA	47.23	2.0%	80.50	1.7%	(33.26)	0.4%	NB
11	Bank of America Home Loans, NC	44.76	1.9%	79.69	1.7%	(34.93)	0.3%	
12	Fairway Independent Mortgage Corp., WI	41.93	1.8%	72.43	1.5%	(30.51)	0.3%	NB
13	Truist, NC	39.35	1.7%	57.69	1.2%	(18.33)	0.5%	NB
14	CrossCountry Mortgage, LA	35.52	1.5%	36.40	0.8%	(0.88)	0.8%	NB
15	First Republic Bank, CA	31.79	1.4%	29.45	0.6%	2.34	0.8%	
16	Citi, MO	29.78	1.3%	31.18	0.6%	(1.39)	0.6%	
17	Mr. Cooper Group, TX	28.25	1.2%	86.80	1.8%	(58.55)	-0.6%	NB
18	Home Point Financial, MI	27.68	1.2%	96.04	2.0%	(68.36)	-0.8%	PNB
19	Lakeview Loan Servicing, FL	27.41	1.2%	48.85	1.0%	(21.44)	0.2%	NB
20	Freedom Mortgage Corp., NJ	27.26	1.2%	114.57	2.4%	(87.31)	-1.2%	NB
21	Flagstar Bank, MI	26.96	1.2%	49.82	1.0%	(22.85)	0.1%	
22	Planet Home Lending, CT	26.38	1.1%	27.96	0.6%	(1.58)	0.6%	NB
23	Veterans United/Mortgage Research, MO	23.85	1.0%	28.31	0.6%	(4.46)	0.4%	NB
24	Movement Mortgage, SC	23.11	1.0%	33.15	0.7%	(10.04)	0.3%	NB
25	Citizens Bank, RI	21.03	0.9%	42.64	0.9%	(21.61)	0.0%	
26	DHI Mortgage, TX	20.20	0.9%	15.00	0.3%	5.20	0.6%	NB
27	Guild Mortgage Co., CA	19.12	0.8%	37.54	0.8%	(18.42)	0.0%	PNB
28	CMG Mortgage, CA	17.90	0.8%	27.24	0.6%	(9.34)	0.2%	NB
29	Ocwen Financial/PHH Mortgage, FL	16.80	0.7%	19.53	0.4%	(2.73)	0.3%	PNB
30	Navy Federal Credit Union, VA	16.46	0.7%	24.86	0.5%	(8.40)	0.2%	

Type*
 PNB = Publicly Traded Non-Bank
 NB = Non-Bank
 Blank = Bank or Credit Union

Source: Inside Mortgage Finance



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Mortgage Marketplace

Loan Originations by State

TOP 10 LOAN ORIGINATIONS BY STATE

2022 Rank	Lender	Loan Type				Total	Market		Loan Purpose		
		Conf. Conv.	Govt.	Jumbo	Share		Purchase	Refi	%	Refi %	
1	CALIFORNIA	196,901	43,577	128,440	368,918	16.4%	219,706	149,212	59.6%	40.4%	
2	FLORIDA	109,032	40,664	40,376	190,072	8.5%	132,370	57,701	69.6%	30.4%	
3	TEXAS	119,992	38,686	26,310	184,988	8.2%	140,620	44,368	76.0%	24.0%	
4	NEW YORK	65,097	9,409	33,099	107,605	4.8%	72,164	35,441	67.1%	32.9%	
5	WASHINGTON	49,128	13,046	17,834	80,008	3.6%	55,638	24,369	69.5%	30.5%	
6	NORTH CAROLINA	52,227	16,194	10,283	78,704	3.5%	56,148	22,556	71.3%	28.7%	
7	GEORGIA	45,265	20,546	7,988	73,799	3.3%	51,237	22,562	69.4%	30.6%	
8	COLORADO	41,411	14,008	16,001	71,420	3.2%	48,771	22,648	68.3%	31.7%	
9	ARIZONA	44,074	14,913	9,595	68,582	3.1%	44,116	24,466	64.3%	35.7%	
10	VIRGINIA	39,800	21,311	6,920	68,031	3.0%	49,300	18,731	72.5%	27.5%	

Source: Inside Mortgage Finance



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Mortgage Marketplace

GSE Loan Limits & Average Home Prices

GSE LOAN LIMITS				
Year	Conf. Conv.	Conf. Conv. - High Cost Area	Average Home Price	
			New	Existing
2004	333,700	500,550	284,300	244,000
2005	359,650	539,475	286,500	267,000
2006	417,000	625,500	305,900	268,200
2007	417,000	625,500	313,600	266,000
2008	417,000	625,500	292,600	242,700
2009	417,000	625,500	270,900	216,900
2010	417,000	625,500	272,900	220,600
2011	417,000	625,500	267,900	214,300
2012	417,000	625,500	292,200	225,400
2013	417,000	625,500	324,500	245,500
2014	417,000	625,500	347,700	255,300
2015	417,000	625,500	352,700	266,400
2016	417,000	625,500	360,900	276,900
2017	424,100	636,150	384,900	290,200
2018	453,100	679,650	385,000	299,400
2019	484,350	726,525	383,900	310,200
2020	510,400	765,600	391,900	334,500
2021	548,250	822,375	464,200	372,800
2022	647,200	970,800	536,700	383,950
2023	726,200	1,089,300		

Source: FHFA & Inside Mortgage Finance

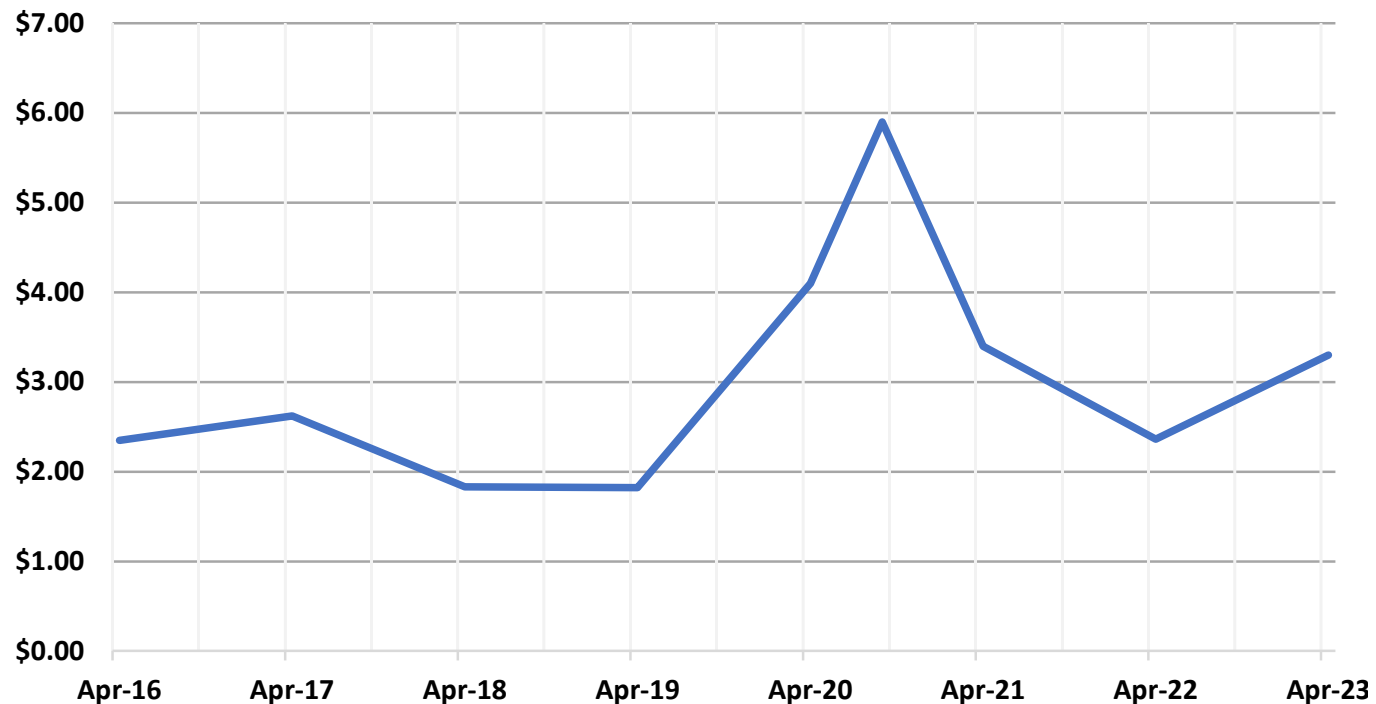


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Mortgage Marketplace

Mortgage Profitability

Mortgage Origination Profitability \$ per \$1,000 Originated



	Apr-16	Apr-17	Apr-18	Apr-19	Apr-20	Sep-20	Apr-21	Apr-22	Apr-23
— Profitability	\$2.35	\$2.62	\$1.83	\$1.82	\$4.10	\$5.90	\$3.40	\$2.36	\$3.30

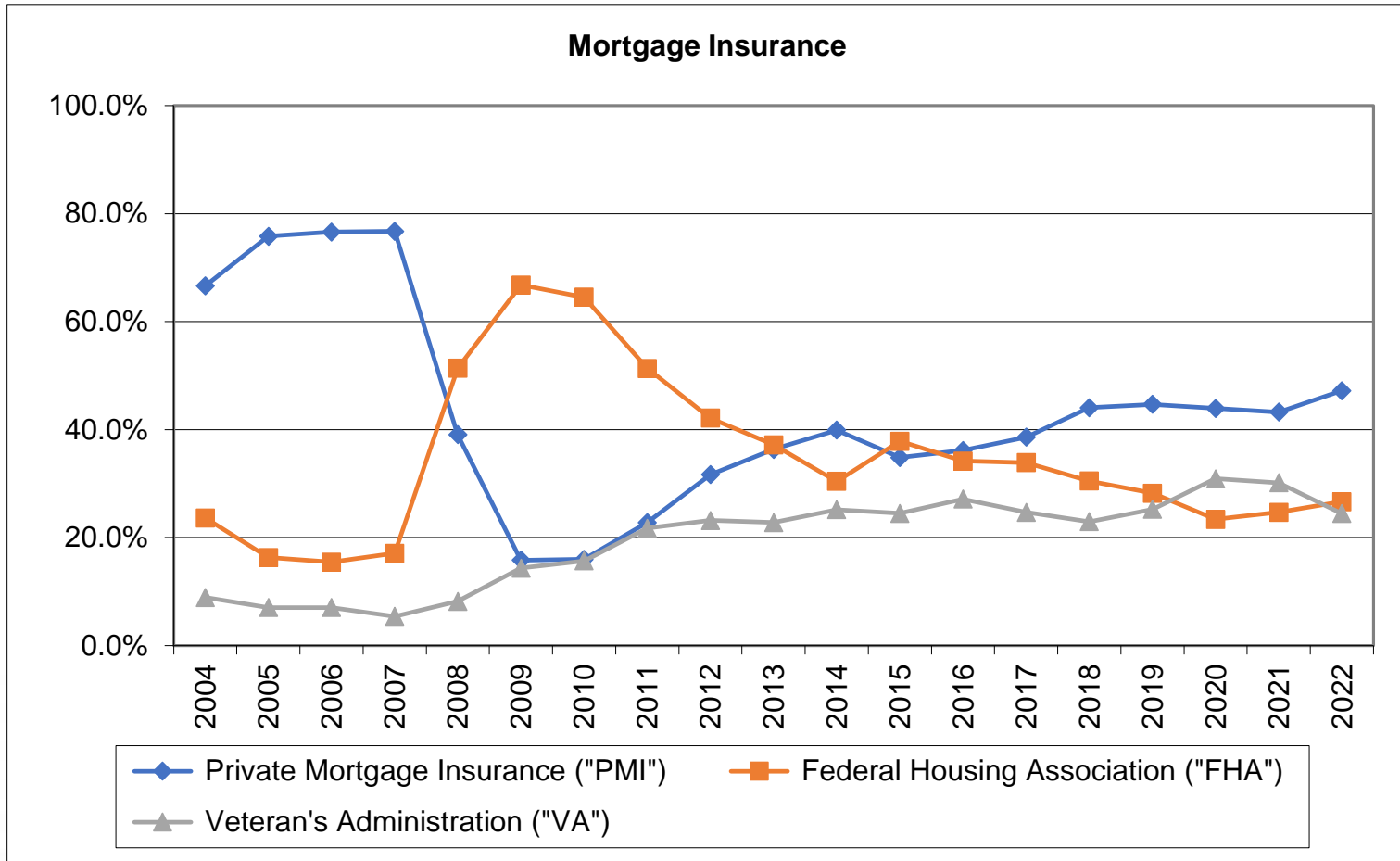
Source: Urban Institute



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Mortgage Marketplace

Mortgage Insurance



Source: Inside Mortgage Finance



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Mortgage Marketplace

Mortgage Insurance Statistics

MORTGAGE INSURANCE STATISTICS												
Year	GSE Purchase with MI				FHA Purchases				GSE Purchase without MI			
	Volume	LTV	FICO	DTI	Volume	LTV	FICO	DTI	Volume	LTV	FICO	DTI
2013	114,745.30	93.0%	751	33.9%	120,689.60	94.9%	693	39.7%	216,010.10	73.5%	760	32.6%
2014	126,718.40	92.8%	744	34.5%	107,817.70	94.8%	681	40.7%	198,701.80	73.1%	757	33.3%
2015	154,781.10	92.8%	744	34.5%	152,348.70	95.3%	682	40.4%	209,022.80	72.7%	758	33.2%
2016	192,128.40	92.9%	743	34.9%	176,446.20	95.3%	681	40.9%	238,125.00	72.5%	756	33.4%
2017	214,034.10	93.0%	742	35.8%	174,407.90	96.2%	678	42.2%	258,730.30	72.4%	755	34.1%
2018	243,542.90	93.2%	741	37.5%	158,689.20	96.8%	671	43.3%	261,002.20	72.0%	755	35.3%
2019	276,719.90	93.2%	743	37.0%	168,910.90	96.7%	669	43.4%	280,162.10	72.0%	758	34.7%
2020	366,771.10	93.1%	748	35.9%	194,092.20	96.8%	676	43.0%	356,904.20	72.1%	761	34.0%
2021	438,579.80	93.0%	746	35.9%	205,630.00	96.5%	673	43.2%	449,319.00	71.8%	760	34.1%
2022	355,697.30	93.0%	746	37.7%	175,789.00	96.1%	671	44.5%	364,074.30	70.3%	757	35.8%

GSE – Government Sponsored Entity

MI – Mortgage Insurance

LTV – Loan to Value

FICO – Credit Score

DTI – Debt to Income

Source: Inside Mortgage Finance



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Mortgage Marketplace

MBA Origination Forecast

RESIDENTIAL MORTGAGE LOAN VOLUME						
	2020	2021	2022	2023	2024	2025
Total one-to-four						
Purchase	1,483	1,646	1,578	1,374	1,614	1,783
Refinance	2,625	2,345	667	432	635	685
Total	4,108	3,991	2,245	1,806	2,249	2,468
Refinance %	46	60	30	24	28	28
Percent change	NA	-2.8%	-43.7%	-19.6%	24.5%	9.7%
FHA originations	255	342	158	123	137	139

Source: Mortgage Bankers Association



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Mortgage Marketplace

Housing Affordability

HOUSING AFFORDABILITY					
	Q4 2022	Q4 2021	1 Yr. % Change	Q4 2017	5 Yr. % Change
Median Sales Price	436,800	433,100	0.9%	331,800	31.6%
Median Income *	70,784	70,784	0.0%	67,571	4.8%
Average FHLMC Rate	6.665%	3.079%	116.4%	3.922%	69.9%
P&I Payment (20% Down)	2,466	1,443	70.9%	1,278	92.9%
P&I as Percent of Income	41.8%	24.5%	70.9%	22.7%	84.2%
US Fixed Housing Affordability Index	101.4	148.1	-31.5%	160.6	-36.9%

* 2022 Median Income has not been released, using the amount from 2021

Sources: FRED, FHLMC, & HUD



Mortgage Marketplace

MORTGAGES HELD ON BANK BALANCE SHEETS

	2017	2018	2019	2020	2021	2022	Q1 2023
Total Bank Assets	17,424.5	17,953.9	18,656.6	21,880.7	23,733.8	23,615.2	23,722.9
Total 1-4 Family	2,474.7	2,495.0	2,543.8	2,511.2	2,524.1	2,752.5	2,774.7
Total MBS	2,142.0	2,209.7	2,377.9	2,992.4	3,560.8	3,322.6	3,178.8
Total Mortgages	4,616.6	4,704.7	4,921.7	5,503.6	6,085.0	6,075.0	5,953.5
Mortgages as % of Assets	26.5%	26.2%	26.4%	25.2%	25.6%	25.7%	25.1%
Unrealized Losses	(41.0)	(68.4)	(21.0)	39.3	(31.1)	(326.1)	(283.2)

Source: S&P Capital IQ



Mortgage Marketplace

MBS Owned by Financial Institutions

MBS OWNED BY FINANCIAL INSTITUTIONS				
	2022			2021
	Agency	Non-Agency	Total	Total
U.S. Depository Institutions				
Commercial Banks	2,381.89	57.97	2,439.86	2,606.86
Savings Institutions	281.94	8.70	290.64	390.68
BHC Trading Accounts	273.93	13.29	287.22	242.55
Credit Unions	192.95	7.26	200.21	227.33
Total Depositories	3,130.71	87.22	3,217.93	3,467.42
Federal Reserve System	2,632.91	-	2,632.91	2,606.26
Foreign Investors	1,239.00	251.75	1,490.75	1,433.17
Mutual & Money Market Funds	590.00	15.80	605.80	363.72
Public/Private Pension Funds	188.35	4.30	192.65	136.34
Mortgage REITs	140.71	6.05	146.76	160.66
State/Local Government	125.76	1.95	127.71	140.32
Securities Broker/dealers	109.40	6.52	115.92	22.77
Life Insurance Companies	106.91	5.25	112.16	115.13
Fannie Mae/Freddie Mac	49.08	1.26	50.34	88.04
Property/Casualty Insurers	43.04	1.40	44.44	44.36
FHLBanks	30.00	1.75	31.75	26.85
Total Outstanding	8,385.87	383.25	8,769.12	8,605.04

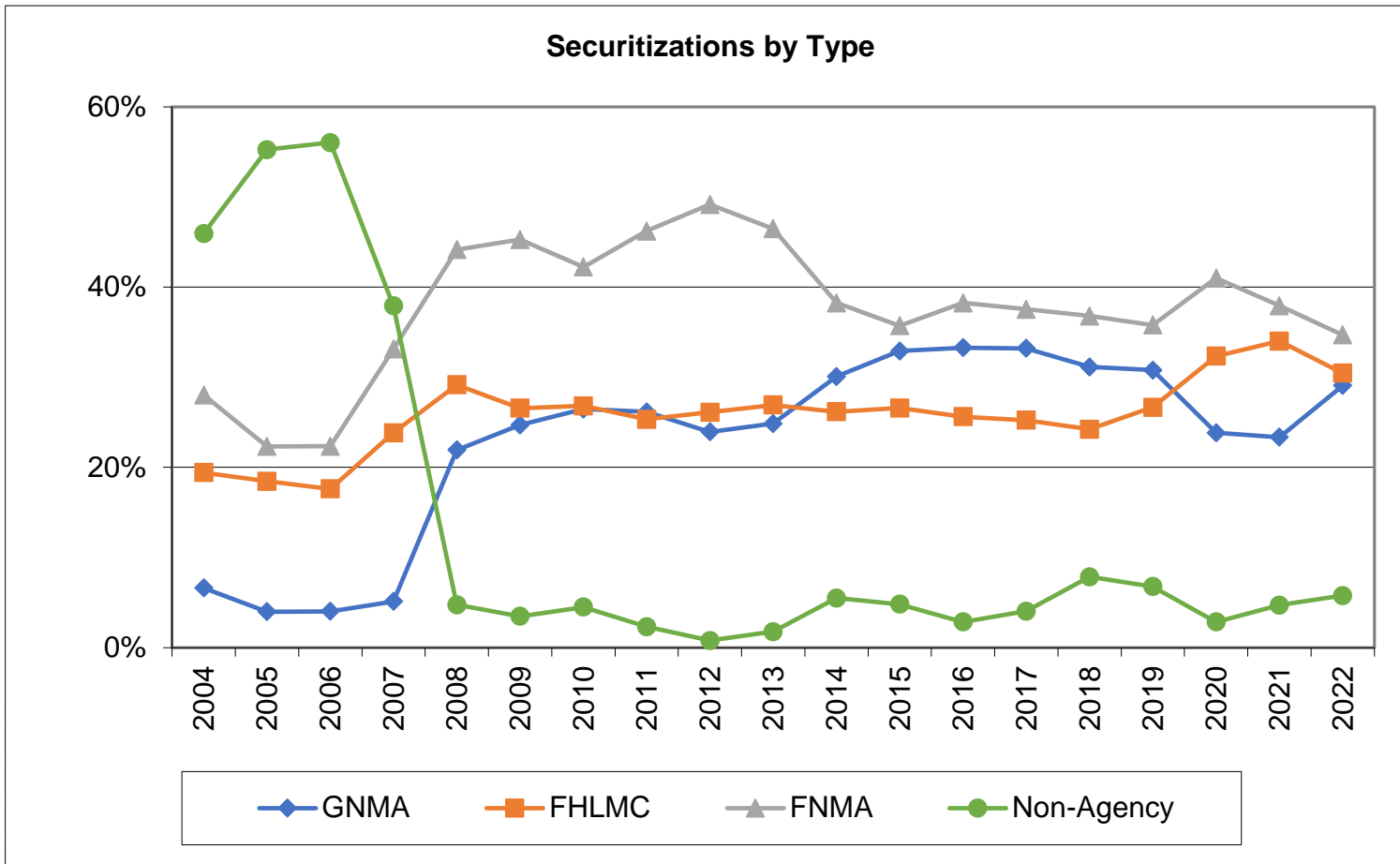
Source: Inside Mortgage Finance



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Mortgage Marketplace

Securitizedizations



Source: Inside Mortgage Finance



Mortgage Marketplace

Non-Agency MBS by Type

NON-AGENCY MBS BY TYPE

Year	Prime	Sub-Prime	Alt A	S & D	Re-MBS	Other	Total
2004	27%	42%	18%	4%	2%	6%	100%
2005	24%	39%	28%	3%	1%	6%	100%
2006	19%	39%	32%	1%	1%	7%	100%
2007	26%	29%	35%	1%	4%	6%	100%
2008	12%	4%	3%	1%	34%	46%	100%
2009	9%	1%	0%	1%	83%	5%	100%
2010	1%	0%	1%	1%	92%	6%	100%
2011	2%	2%	0%	1%	51%	44%	100%
2012	15%	11%	0%	35%	23%	15%	100%
2013	34%	5%	0%	39%	10%	11%	100%
2014	18%	2%	3%	43%	29%	5%	100%
2015	19%	1%	2%	44%	31%	3%	100%
2016	22%	1%	4%	57%	7%	9%	100%
2017	16%	3%	3%	68%	8%	2%	100%
2018	16%	4%	8%	63%	3%	6%	100%
2019	15%	8%	19%	48%	2%	8%	100%
2020	21%	11%	12%	42%	0%	14%	100%
2021	46%	4%	14%	26%	0%	11%	100%
2022	31%	21%	18%	20%	0%	10%	100%

Prime – Greater than 660 credit score

Sub-Prime – Less than 620 credit score

Alt A – Credit score of 620 – 660, however other factors may push a prime borrower into the Alt A category

S & D – Scratch & Dent loans were originally meant to conform to agency standards, however, were subsequently discovered to not meet the agency criteria

Re-MBS – Re-securitization of now performing loans that were purchased out of an original securitization

Other – 2nd Lien, MSR Receivables and other assets

Source: Inside Mortgage Finance & Investopedia



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MORTGAGE MARKETPLACE: Credit Enhancement

Private Label Securitization Example

CSMC 2022-ATH3 Collateral Description – Non-QM / Investor Loans

The ATR Rules apply to all of the Mortgage Loans that are subject to TILA and such Mortgage Loans represent approximately 27.13% of the Mortgage Loans (by aggregate Stated Principal Balance as of the Cut-off Date) and consist of Non-QM Loans representing approximately 27.13% of the Mortgage Loans (by aggregate Stated Principal Balance as of the Cut-off Date), for which the Originator and its assignees (including the Issuer) are not expected to have the benefit of a conclusive or rebuttable presumption of compliance with the ATR Rules. None of the Mortgage Loans are Rebuttable Presumption QM Loans or Safe Harbor QM Loans.

Approximately 72.87% of the Mortgage Loans (by aggregate Stated Principal Balance as of the Cut-off Date) were originated under programs that are not subject to TILA because such Mortgage Loans were made to investors for business purposes (such Mortgage Loans, the “**Investor Loans**”). The Investor Loans are not subject to TILA and therefore the ATR Rules do not apply to the Investor Loans.

- CSMC – Credit Suisse
- ATR – Ability to repay
- TILA – Truth in Lending Act
- Non-QM – Non-Qualified Mortgage



Private Label Securitization Example

Senior/Subordinated Credit Enhancement – Non-QM / Investor Loans

Credit Suisse - CSMC 2022-ATH3 Trust - Structure Chart					
Tranche	Type	Coupon	Orig Ratings (S&P/KBRA)	Orig Supp (%)	Orig Balance
A1	SEN_FIX_CAP	4.9910	AAA/AAA	48.15	144,230,000
A2	SEN_FIX_CAP	5.8300	AA/AA+	39.45	24,201,000
A3	SEN_FIX_CAP	6.3920	A/A+	26.90	34,910,000
M1	MEZ_FIX_CAP	7.1000	BBB/BBB	19.00	21,975,000
B1	JUN_FIX_CAP	7.1000	BB/BB+	13.25	15,995,000
B2	JUN_FIX_CAP	7.1000	B-/B	6.65	18,359,000
B3	JUN_WAC	7.2445	NR/NR	0.00	18,499,044
AIOS	SEN_IO	0.0100	NR/NR		
XS	JUN_WAC_IO	1.4128	NR/NR		
R	NPR_NPR_NO	0.0000	NR/NR		





MORTGAGE
MARKETPLACE:
Servicing Market

Mortgage Marketplace

Servicers by Type

Agency Servicers by Type		
	2022	2021
Depositories		
Mega banks	18.2%	20.5%
Large banks	12.7%	11.3%
Mid-sized banks	4.3%	5.9%
Community banks	5.5%	5.2%
Credit unions	3.0%	3.4%
Depositories total	43.7%	46.3%
Non-banks		
Housing finance agencies	0.7%	0.8%
Large Ind Mrtg Bankers	35.7%	34.3%
Small/Midsize Ind Mrtg Bankers	19.9%	18.6%
Nonbanks	56.3%	53.7%
Total	100.0%	100.0%
Concentration		
Top five	32.6%	32.9%
Ranked 6-25	39.4%	34.5%
Top 50	82.0%	78.1%
Top 100	88.1%	85.3%
Beyond 100	11.9%	14.7%

Mega Banks = >\$1T in total assets

Large Banks = \$100B – \$1T in total assets

Mid-Sized Banks = \$10B - \$100B in total assets

Community Banks = <\$10B in total assets

Source: Inside Mortgage Finance



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Mortgage Marketplace

Servicing Totals

SERVICING TOTALS						
Year	Total	FHLMC /		Non-Agency		Total
		GNMA	FNMA	RMBS	Loans	
2004	8,293	5.3%	38.9%	12.7%	43.1%	100.0%
2005	9,450	4.3%	35.7%	17.3%	42.7%	100.0%
2006	10,532	3.9%	34.9%	20.4%	40.8%	100.0%
2007	11,253	4.0%	40.0%	19.6%	36.4%	100.0%
2008	11,152	5.4%	42.1%	17.2%	35.4%	100.0%
2009	10,962	7.2%	43.6%	14.5%	34.7%	100.0%
2010	10,525	9.9%	42.7%	12.5%	34.9%	100.0%
2011	10,283	11.5%	43.1%	10.9%	34.5%	100.0%
2012	10,048	12.9%	43.5%	9.3%	34.2%	100.0%
2013	9,957	14.0%	44.3%	8.0%	33.7%	100.0%
2014	9,936	14.6%	44.3%	7.0%	34.0%	100.0%
2015	10,076	15.4%	44.0%	6.0%	34.6%	100.0%
2016	10,279	16.2%	44.2%	5.0%	34.5%	100.0%
2017	10,596	17.0%	43.9%	4.5%	34.6%	100.0%
2018	10,898	17.7%	44.6%	4.3%	33.4%	100.0%
2019	11,180	17.8%	45.1%	4.0%	33.1%	100.0%
2020	11,652	17.0%	48.7%	3.5%	30.8%	100.0%
2021	12,543	16.0%	50.6%	3.2%	30.1%	100.0%
2022	13,365	16.4%	49.7%	3.1%	30.7%	100.0%

Source: Inside Mortgage Finance



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Mortgage Marketplace

Top Servicers

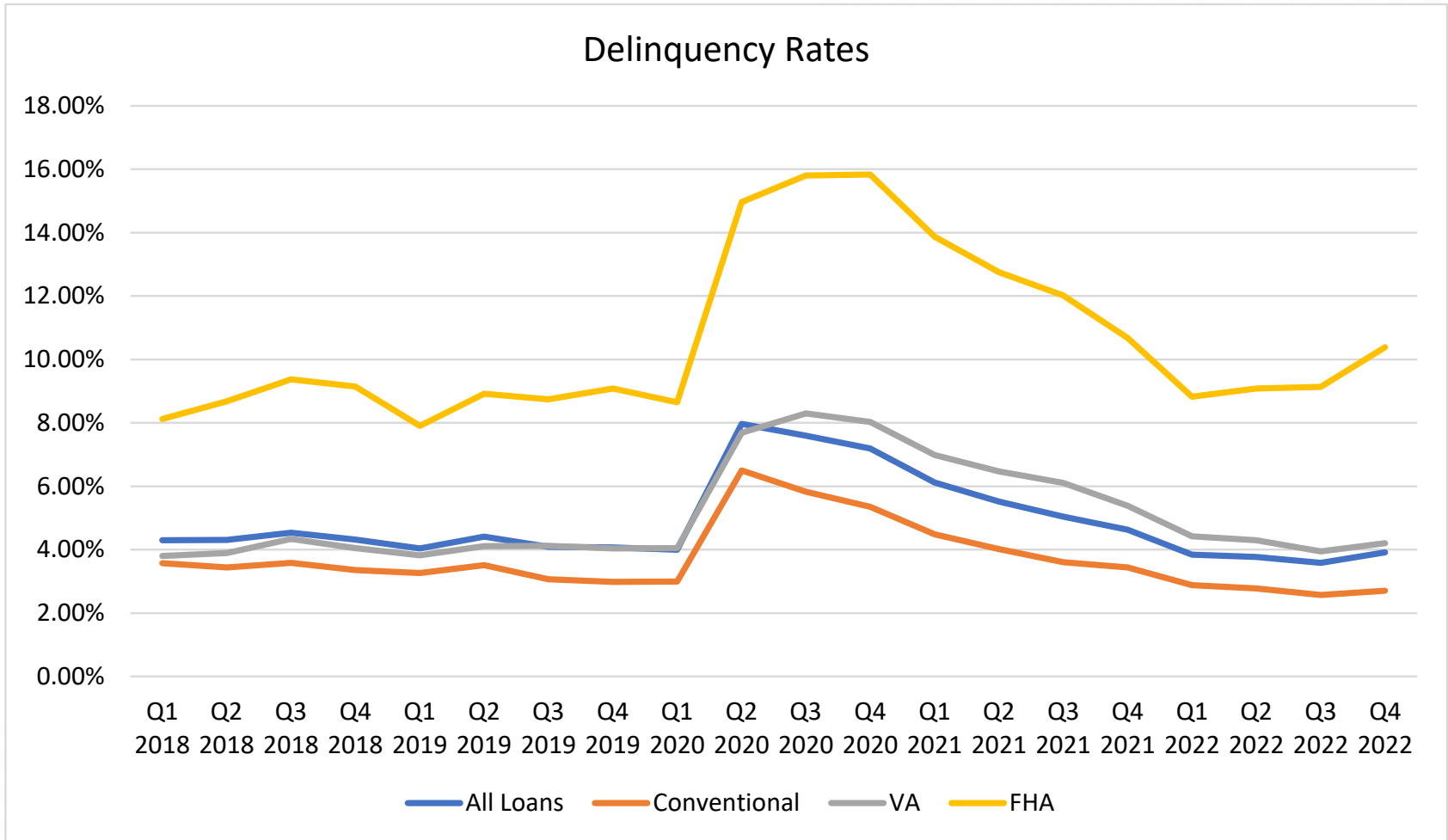
TOP SERVICERS							
2022		2022		2021		Change 2022 vs. 2021	
Rank	Lender	Total	Share	Total	Share	Total	Share
1	Wells Fargo & Company, IA	952.17	7.1%	991.48	7.9%	(39.31)	-0.8%
2	Chase, NJ	826.19	6.2%	759.98	6.1%	66.21	0.1%
3	PennyMac Loan Services, CA	551.67	4.1%	509.71	4.1%	41.96	0.1%
4	NewRez/Caliber, NY	548.60	4.1%	562.71	4.5%	(14.11)	-0.4%
5	Rocket Mortgage, MI	486.54	3.6%	485.09	3.9%	1.45	-0.2%
6	Lakeview Loan Servicing, FL	467.68	3.5%	351.23	2.8%	116.45	0.7%
7	Freedom Mortgage Corp., NJ	452.40	3.4%	354.53	2.8%	97.87	0.6%
8	Mr. Cooper Group, TX	411.38	3.1%	339.21	2.7%	72.17	0.4%
9	Bank of America, NC	338.06	2.5%	345.19	2.8%	(7.13)	-0.2%
10	US Bank Home Mortgage, MN	323.03	2.4%	304.71	2.4%	18.32	0.0%
11	United Wholesale Mortgage, MI	312.45	2.3%	319.81	2.5%	(7.36)	-0.2%
12	Truist, NC	274.03	2.1%	247.49	2.0%	26.54	0.1%
13	PNC Mortgage, OH	236.31	1.8%	173.41	1.4%	62.90	0.4%
14	Matrix Financial Services Corp., AZ	202.29	1.5%	191.09	1.5%	11.20	0.0%
15	Citi, MO	143.99	1.1%	129.06	1.0%	14.93	0.0%
16	loanDepot.com, CA	141.17	1.1%	162.11	1.3%	(20.94)	-0.2%
17	Carrington Mortgage Services, CA	136.18	1.0%	68.91	0.5%	67.27	0.5%
18	Ocwen Financial/PHH Mortgage, FL	134.40	1.0%	135.90	1.1%	(1.50)	-0.1%
19	Citizens Bank, RI	125.59	0.9%	113.40	0.9%	12.19	0.0%
20	Fifth Third Bank, OH	121.46	0.9%	109.91	0.9%	11.55	0.0%
21	Onslow Bay Financial/Annaly, NY	116.33	0.9%	40.23	0.3%	76.10	0.5%
22	First Republic Bank, CA	104.24	0.8%	83.40	0.7%	20.84	0.1%
23	Home Point Financial, MI	88.67	0.7%	128.36	1.0%	(39.69)	-0.4%
24	Navy Federal Credit Union, VA	84.35	0.6%	79.25	0.6%	5.10	0.0%

Source: Inside Mortgage Finance



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Mortgage Marketplace



Source: Mortgage Bankers Association



WILARY WINN LLC



MORTGAGE SERVICING RIGHTS (MSRs)

MSR – Valuation Considerations

Retained Mortgage Servicing Rights

- MSRs are a modified interest-only strip
- Many types of underlying loans
- Value varies significantly by type of MSR



MSR Valuation

Interagency Advisory on MSRs

- Requires comprehensive documentation of valuation process
- Valuation must be based on reasonable and supportable assumptions and major changes to assumptions must be approved
- Compare assumptions to actual results
- Use appropriate amortization and recognize impairment timely

MSR – Valuation Considerations

Valuation Inputs

- Loan amount
- Servicing fee percentage – varies by investor and type of loan
- Ancillary income
- Expected loan life – prepayment and loan term
- Discount rate
- Costs to service – market costs
- Float Income on P&I payments and escrow payments
- Delinquency rate and foreclosure losses – recourse versus non-recourse

MSR Valuation Inputs

Input Considerations

- Servicing fees are earned monthly based on remaining principal balance
- Servicing costs should be calculated in dollars per loan not in basis points
- Ancillary income includes late fees, insurance income and other fees earned
- Float and escrows (impounds) add value

MSR Valuation Inputs

Range of Valuation Inputs

Ancillary Income	Low	High	Average	Median
FNMA / FHLMC				
Fixed	7.72	41.18	25.07	25.50
ARM	8.86	42.96	25.57	26.00
GNMA				
Fixed	9.17	55.00	34.56	36.54
ARM		Data Not Received		
Discount Rate				
FNMA / FHLMC				
Fixed	8.60%	10.79%	9.49%	9.38%
ARM	8.60%	13.50%	10.47%	9.80%
GNMA				
Fixed	10.00%	13.18%	10.87%	10.52%
ARM		Data Not Received		
Servicing Costs				
FNMA / FHLMC				
Fixed	36.75	137.41	66.68	64.45
ARM	30.26	137.48	68.64	65.92
GNMA				
Fixed	49.89	137.47	78.51	75.00
ARM		Data Not Received		

Source: Big 4 accounting firm MSR Assumptions Survey as of November 30, 2022



WILARY WINN LLC

MSR Valuation

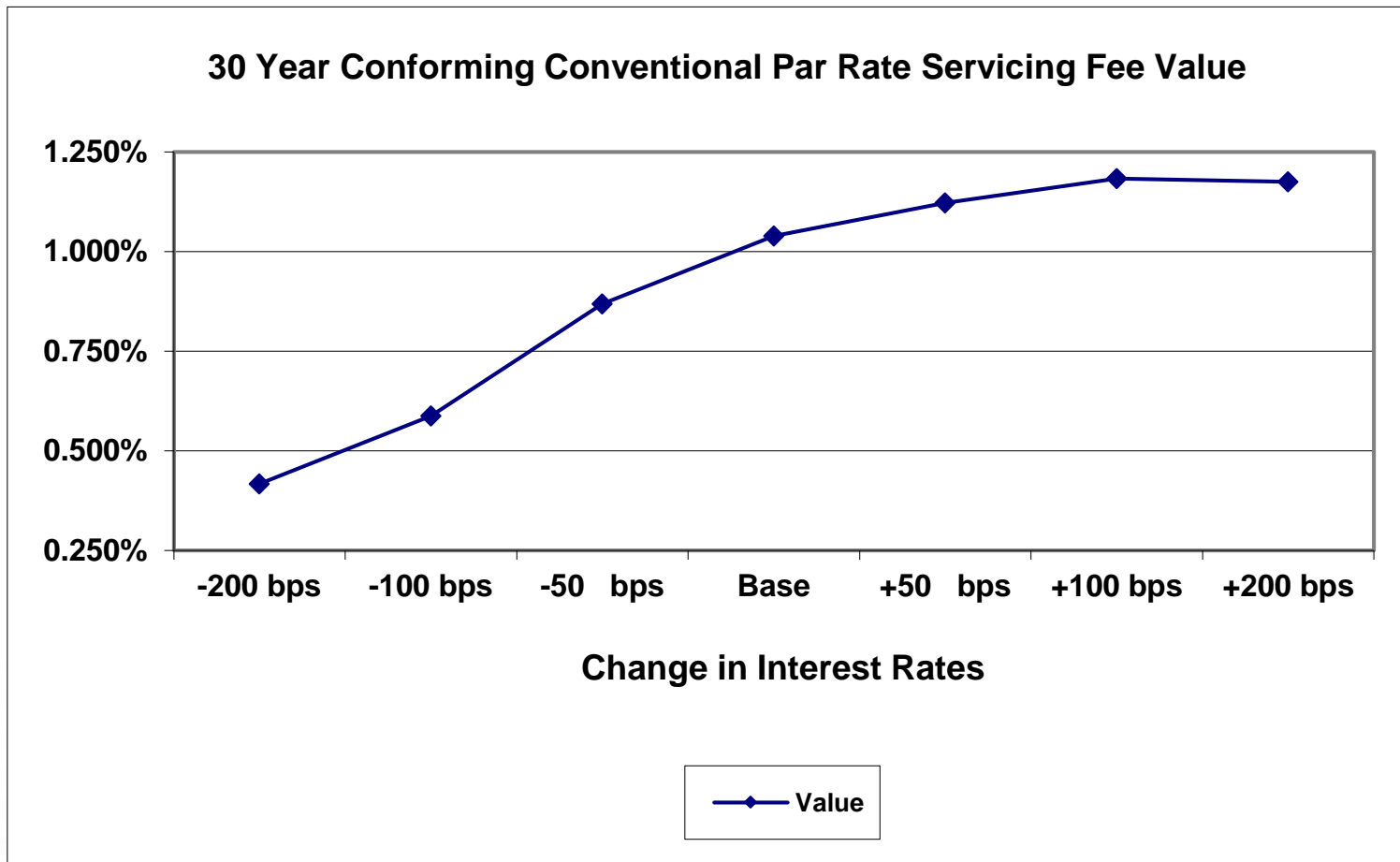
Input Sensitivity

	<u>Value</u>	<u>Change</u>	<u>% Change</u>
Base	1.039%		
Prepayments increase 30%	0.917%	-0.122%	-11.702%
Servicing costs increase 30%	0.995%	-0.044%	-4.230%
Delinquencies increase 30%	1.037%	-0.002%	-0.202%
Discount rate increases 30%	0.942%	-0.097%	-9.317%

Source: Wilary Winn, April 30, 2023

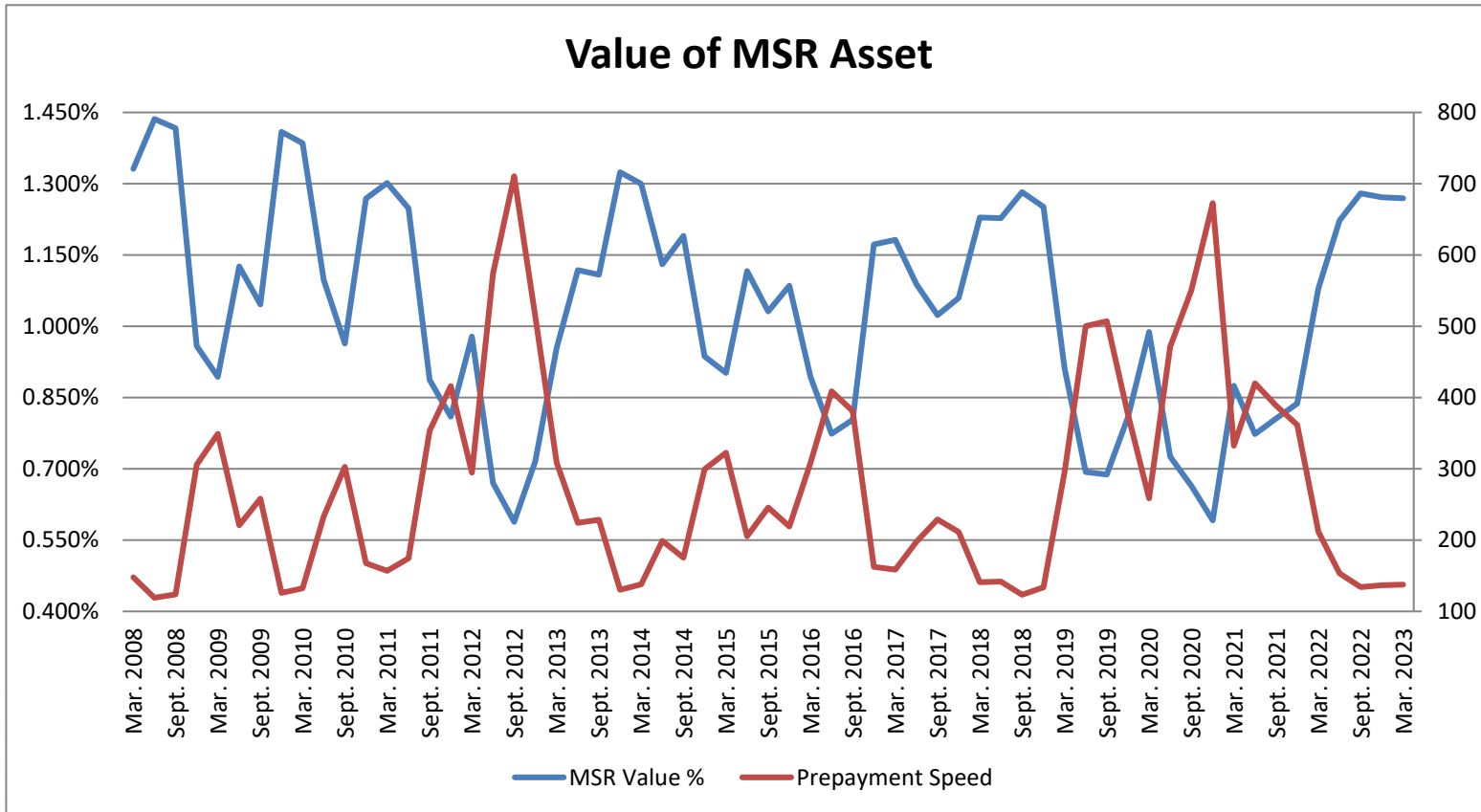
MSR Valuation

MSR Yield Curve and Convexity

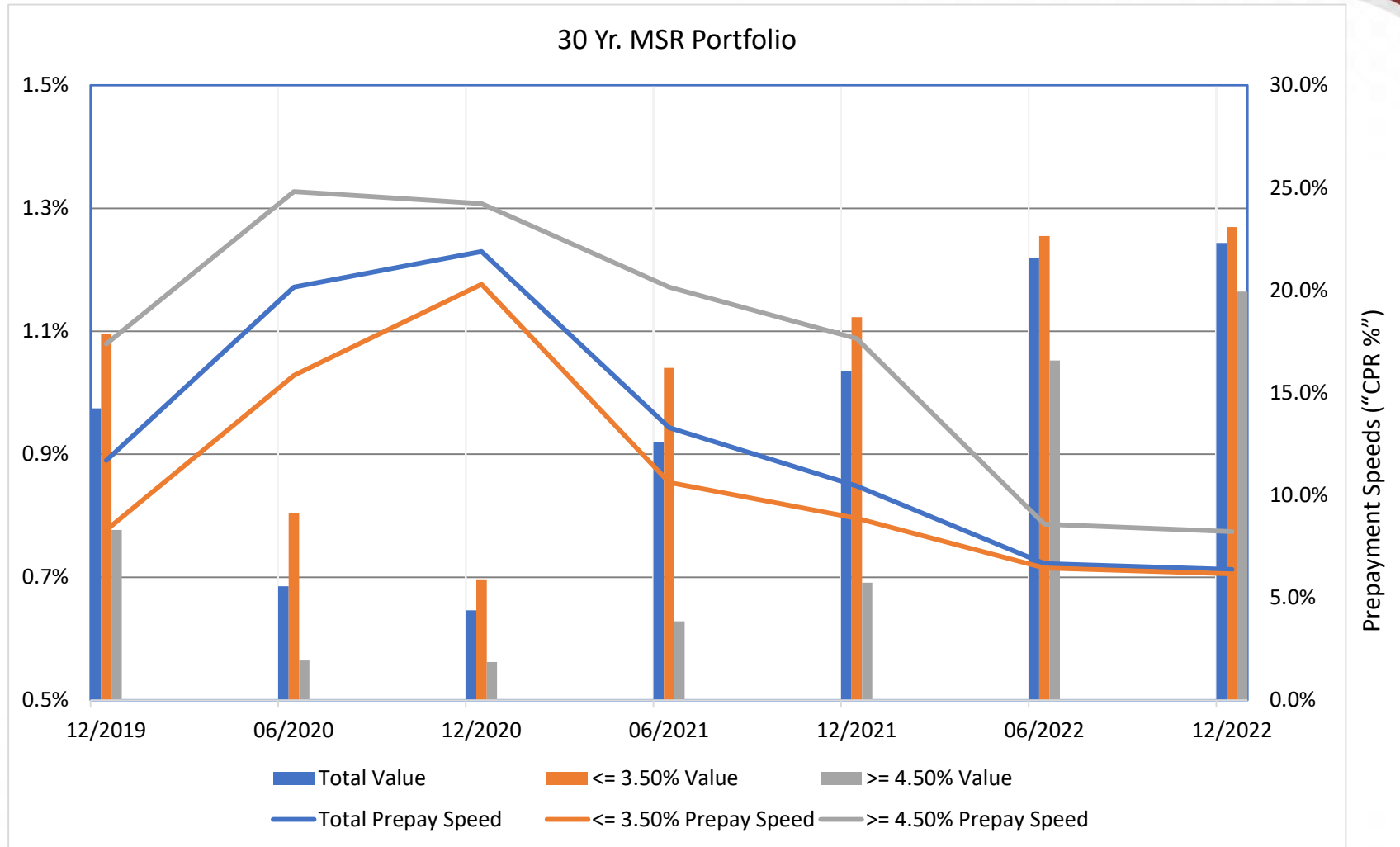


MSR Valuation

MSR Values and Prepayment Input



MSR Valuation



MSR Accounting

Fair Value Method

- The fair value is determined at each reporting period
- The asset is adjusted to equal its fair value
- The difference is taken into income or expense for that reporting period
- Institutions that hedge their servicing rights portfolios can benefit from the fair value method because the accounting is less complex than under FAS ASC Topic 815 – Derivatives and Hedging. Institutions that do not hedge their portfolios and that elect the fair value method could experience earnings volatility.



MSR Accounting

Amortization Method

Amortize the MSR in proportion and over the period of estimated net servicing income (level yield method) and **assess servicing assets for impairment** based on fair value at each reporting date.

MSR Impairment

Impairment Considerations

- Impairment is best measured at the loan level and is reported at the predominant risk characteristic stratum
- There is a difference between temporary impairment, which is accounted for through an allowance and permanent impairment, which requires a direct write-off

MSR Impairment

ABC Bank Servicing Portfolio as of March 31, 2023

		Principal Balance	# of Loans	Avg. Loan Size	WAC	WAM	Age	Avg Life	Service Fee	T&I Total	Prepayment PSA	Lifetime CRR%	Servicing Multiple	Fair Value %	Fair Value \$	Book Value \$	Fair Value - Book Value	Bal. Sheet Impact
40, 30, & 25 year	less than 4.000%	261,301,272	1,105	236,472	3.211%	326	34	8.16	0.250%	427,590	125	7.461%	5.0	1.256%	3,283,060	2,090,614	1,192,446	-
	4.000% - 6.000%	78,433,747	398	197,070	4.649%	312	49	7.40	0.250%	135,442	154	8.883%	4.7	1.177%	923,054	607,548	315,506	-
	greater than 6.000%	7,453,634	24	310,568	6.740%	356	4	4.30	0.250%	8,168	460	20.700%	3.2	0.812%	60,503	77,971	(17,468)	(17,468)
	Total 40, 30, & 25 year	347,188,652	1,527	227,367	3.612%	324	37	7.90	0.250%	571,200	139	8.066%	4.9	1.229%	4,266,617	2,776,133	1,490,484	(17,468)
20 year	less than 3.625%	26,995,013	138	195,616	2.957%	208	32	6.15	0.250%	48,457	123	7.361%	4.3	1.068%	288,242	164,193	124,049	-
	3.625% - 5.625%	5,628,937	38	148,130	3.848%	185	55	5.58	0.250%	14,092	127	7.591%	4.1	1.015%	57,131	23,175	33,956	-
	greater than 5.625%	361,776	2	180,888	6.323%	234	6	5.09	0.250%	397	282	13.659%	3.6	0.900%	3,256	2,764	492	-
	Total 20 year	32,985,727	178	185,313	3.146%	205	35	6.04	0.250%	62,947	126	7.469%	4.2	1.057%	348,629	190,132	158,498	-
15 year	less than 3.125%	49,313,412	302	163,289	2.603%	147	33	4.62	0.250%	105,012	129	7.636%	3.5	0.882%	434,963	287,878	147,085	-
	3.125% - 5.125%	12,667,763	123	102,990	3.491%	125	55	3.92	0.250%	37,289	148	8.672%	3.0	0.761%	96,383	46,168	50,215	-
	greater than 5.125%	472,125	3	157,375	5.917%	175	5	4.51	0.250%	615	271	13.519%	3.3	0.819%	3,866	3,023	843	-
	Total 15 year	62,453,299	428	145,919	2.808%	143	37	4.48	0.250%	142,915	134	7.891%	3.4	0.857%	535,213	337,069	198,143	-
10 year & Balloons	less than 3.000%	1,121,317	12	93,443	2.472%	89	31	2.93	0.250%	4,154	127	7.547%	2.5	0.617%	6,914	3,759	3,155	-
	3.000% - 5.000%	372,929	5	74,586	3.106%	62	58	2.31	0.250%	1,641	137	8.190%	2.2	0.545%	2,032	304	1,727	-
	greater than 5.000%	-	-	-	0.000%	-	-	-	0.000%	-	0	0.000%	0.0	0.000%	-	-	-	-
	Total 10 year	1,494,247	17	87,897	2.630%	83	37	2.77	0.250%	5,795	129	7.708%	2.4	0.599%	8,946	4,064	4,883	-
Grand Total	444,121,925	2,150	206,568	3.461%	289	37	7.27	0.250%	782,857	137	7.996%	4.6	1.162%	5,159,405	3,307,398	1,852,008	(17,468)	

Existing Impairment Reserve (7,336)

(Additional) / Excess Impairment (10,132)



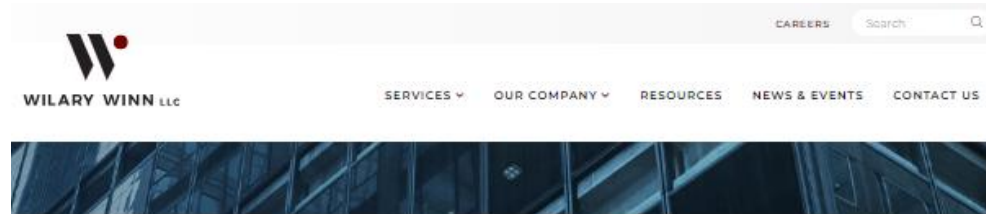
MSR Impairment

Managing Runoff Risk

- The operational / macro hedge
- Hedge with positive convexity instruments
- Utilize appropriate amortization methodology

Mortgage Banking

Resources



Resources

Financial accounting and regulatory reporting continue to grow increasingly complex. Find jargon-free answers to your questions here.

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Wilary Winn Services

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A blue-tinted photograph of two men in business suits. The man on the left is leaning over the man on the right, who is seated and looking at a document. Both are smiling. The background is a pattern of overlapping circles.

Thank You

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