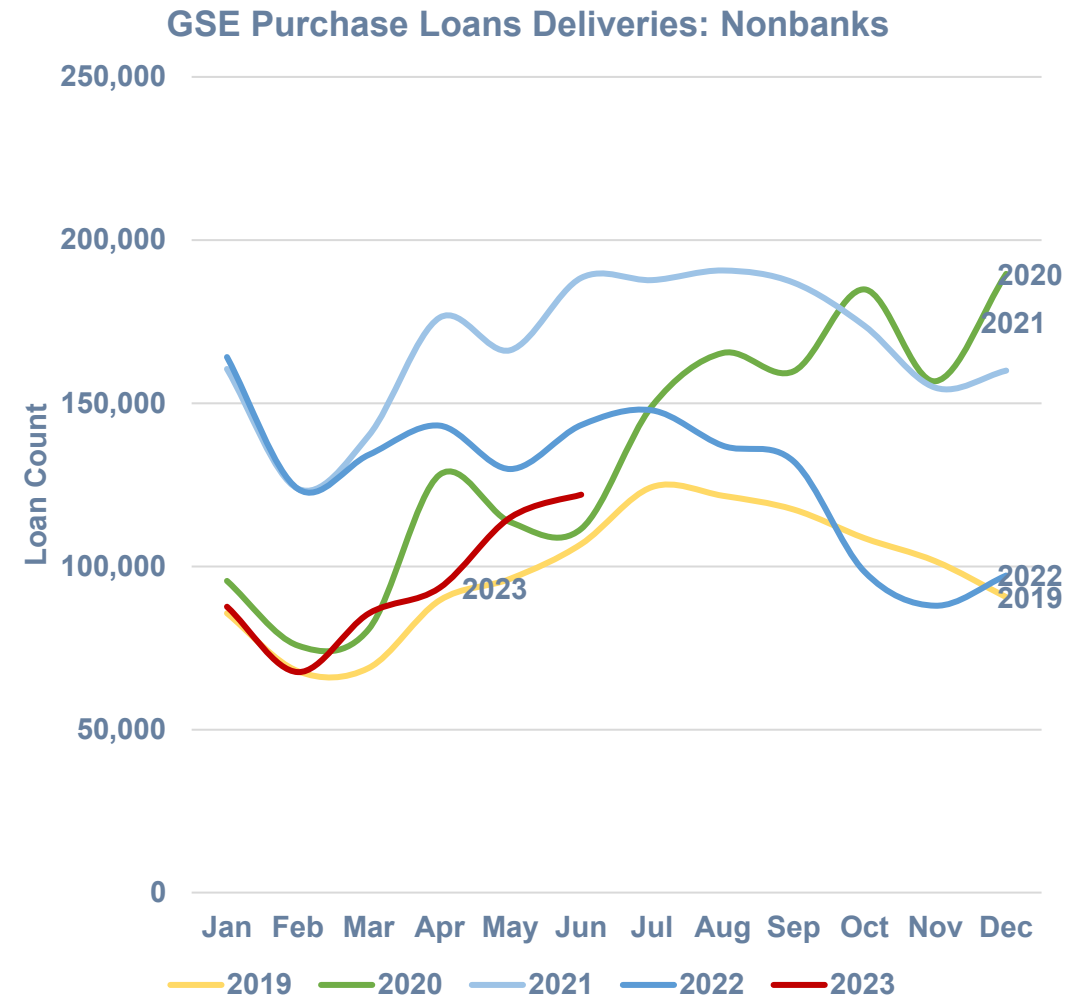
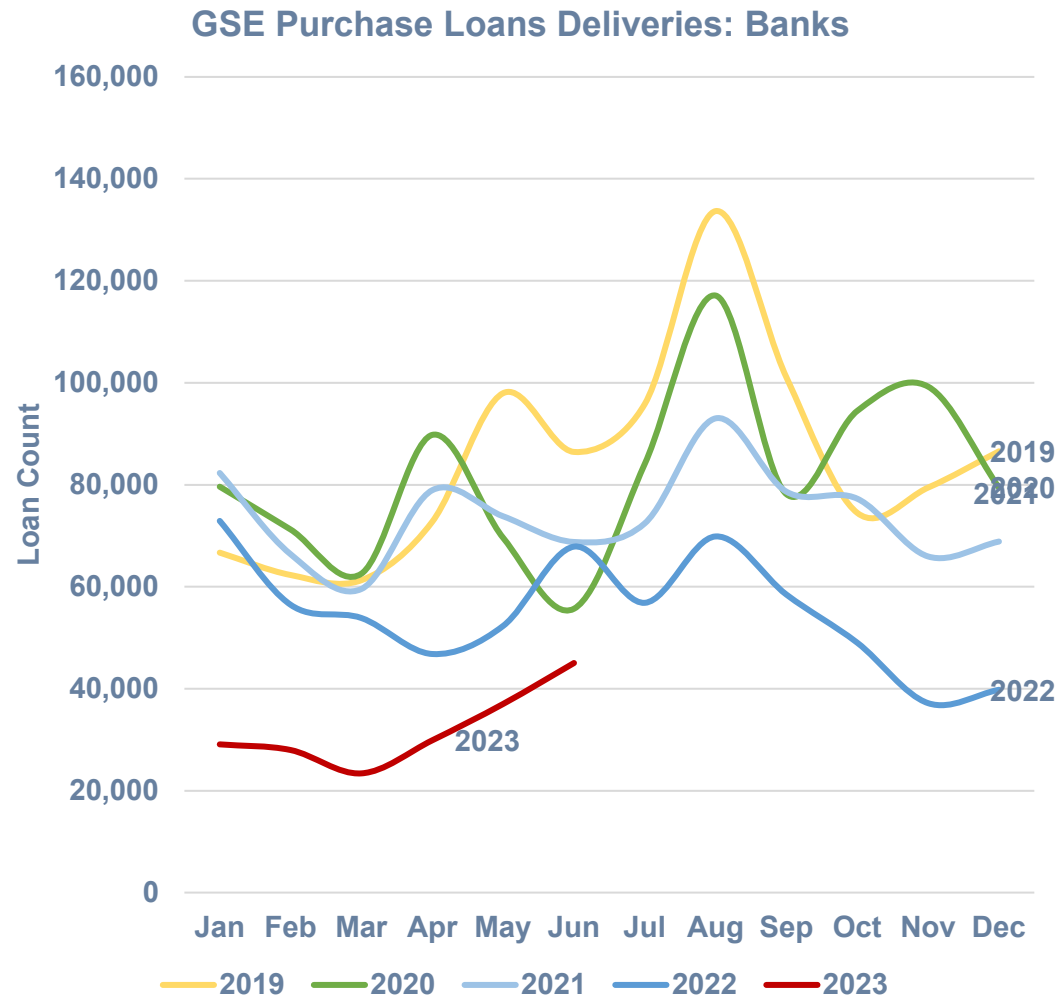


Recursion Macro Housing Analytics

July 2023

RECURSION

Bank purchase mortgage deliveries to the GSEs recover after the Q1 shock, but trail the prior four year's levels, while nonbank activity is more “normal”

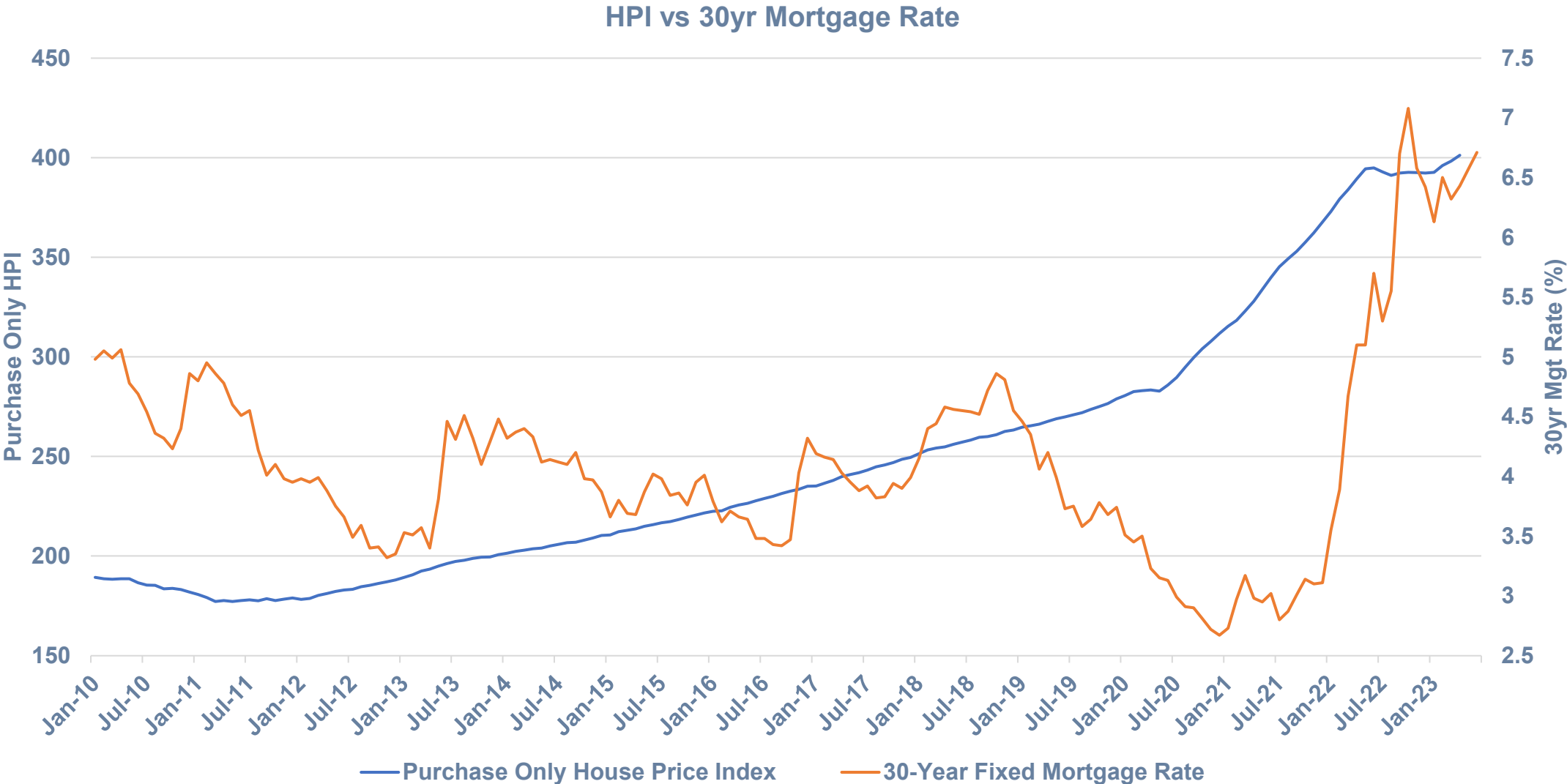


Source: Fannie Mae, Freddie Mac, Recursion Co.

Q2 Recursion Macro Report

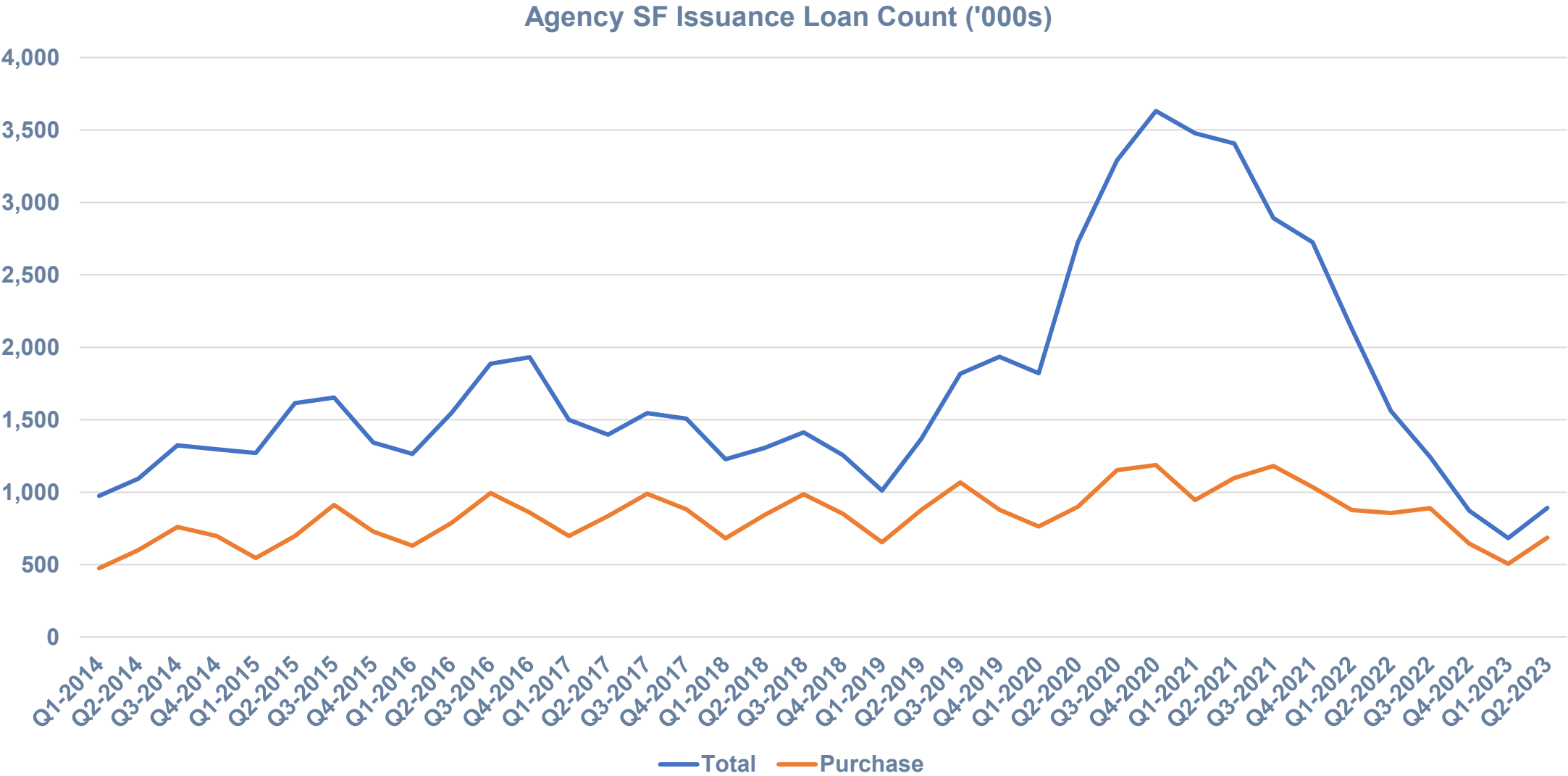
- Overall mortgage deliveries remained subdued in Q2, particularly for refinance loans
- Purchase mortgage deliveries posted modest increases, boosted by seasonal factors and Agency fee cuts
- Deliveries are weighed down by the combination of elevated HPI and high borrowing costs near 7%
- A significant “thaw” in mortgage winter is unlikely until rates return close to 5%
- The Federal Reserve paused in its latest interest rate setting meeting following 10 consecutive hikes
- Dallas Fed President Logan indicated that the Fed would continue its “QT” policy of reducing its balance sheet even if the central bank commences a program of rate hikes
- Lending standards for conventional and Government loans can be characterized as “cautious”
- Evidence of borrower distress has faded
- A nearly simultaneous but highly differentiated pattern of fee changes demonstrates that borrowers have a preference for conventional over FHA loans when these are financially within reach

The Covid shock and fiscal impulse continues to keep rates and HPI elevated



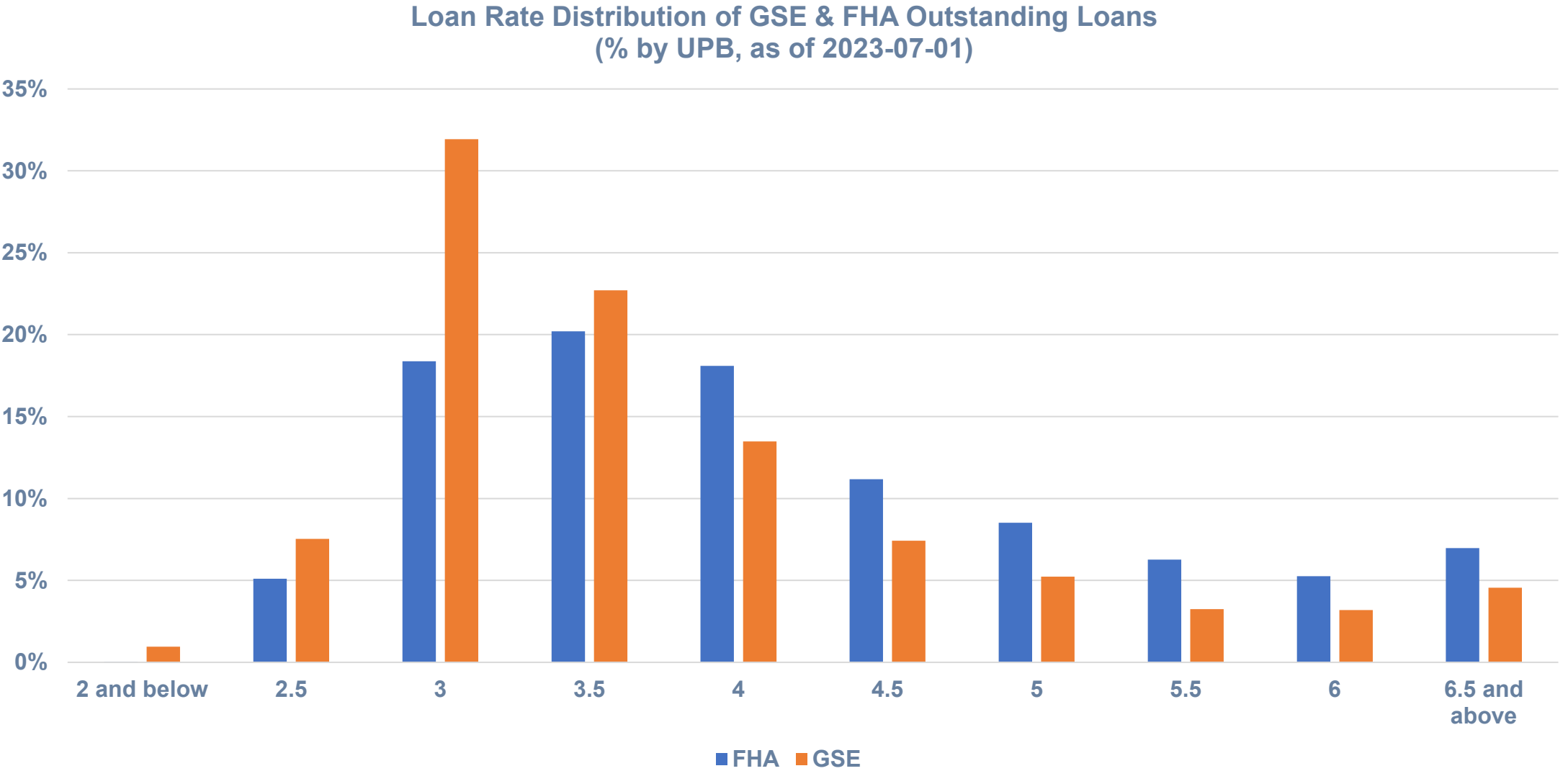
Source: FHFA, Freddie Mac, Recursion Co.

Agency issuance rose in Q2 2023 after 9 consecutive quarterly declines. Too soon to call for a thaw in “Mortgage Winter”.



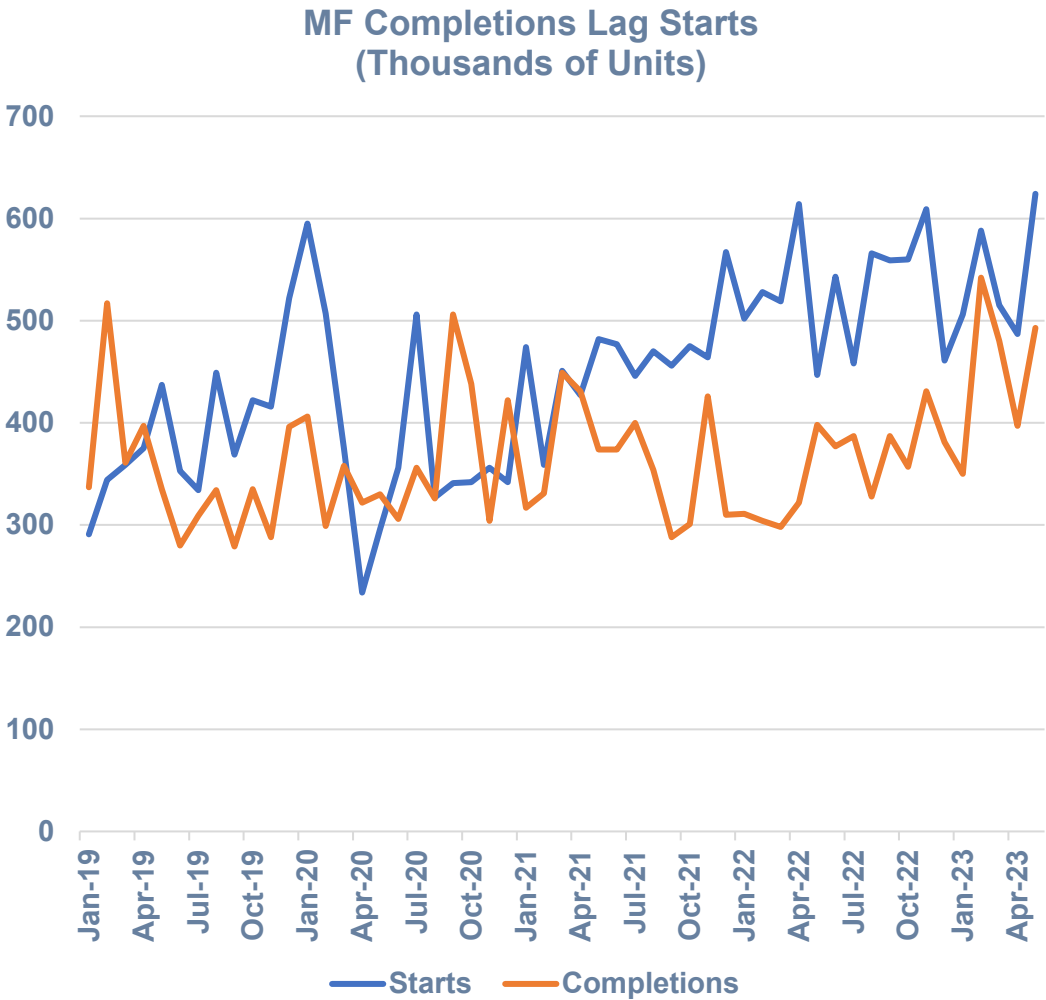
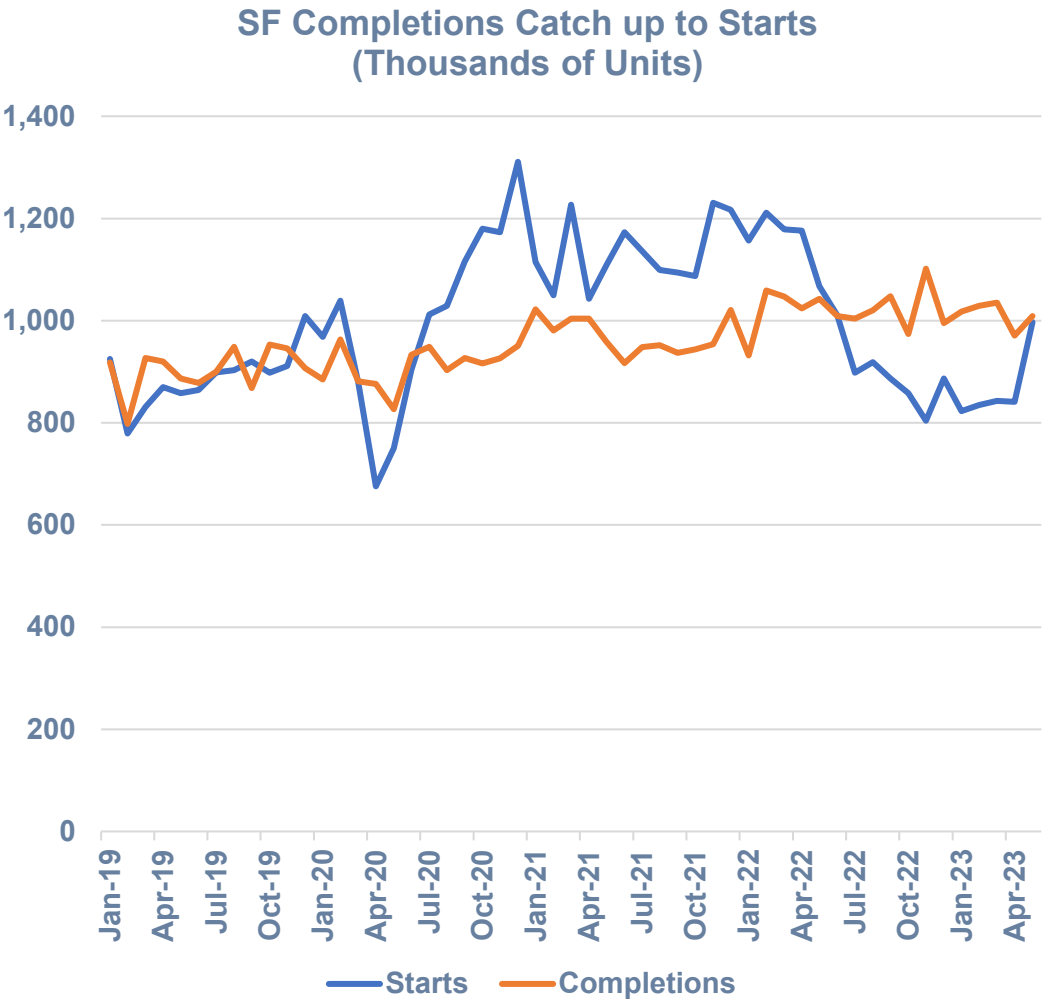
Source: Fannie Mae, Freddie Mac, Ginnie Mae, Recursion Co.

A significant thaw requires mortgage rates at 5% or lower.



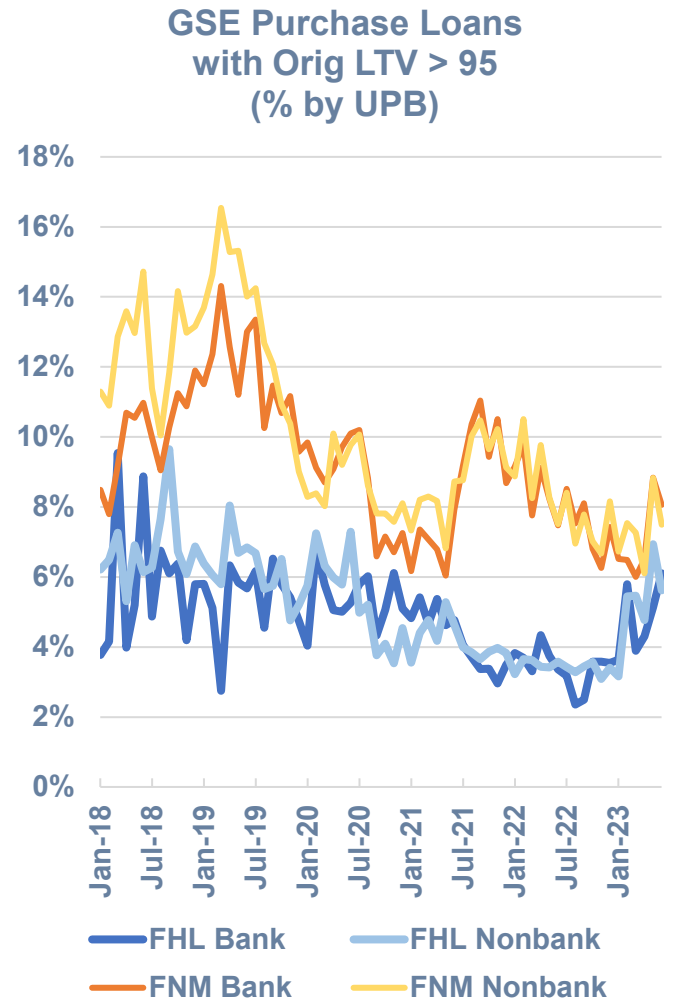
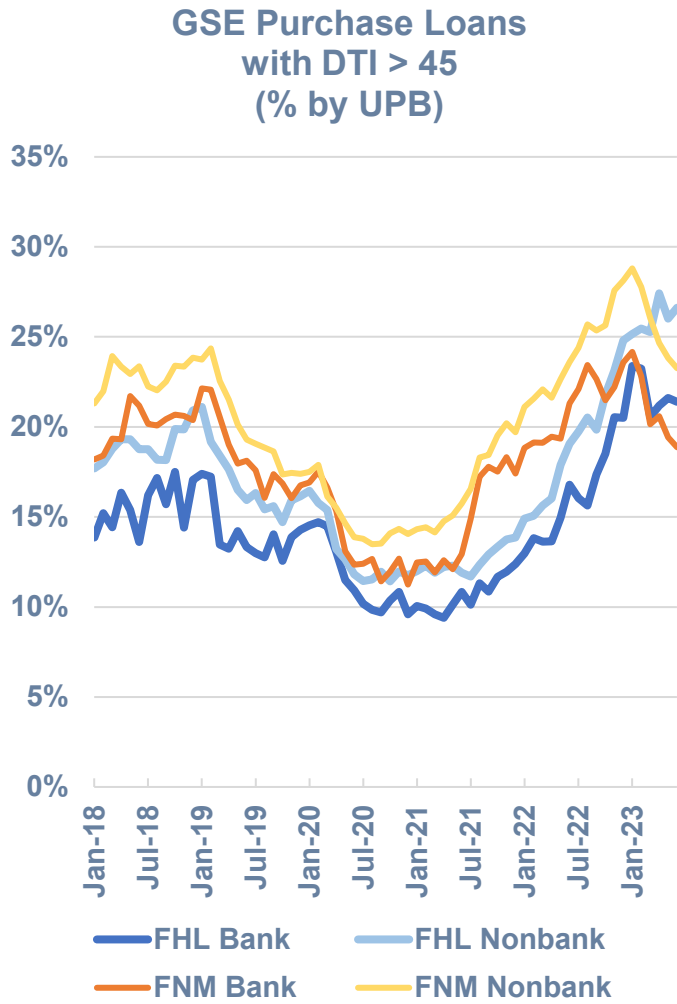
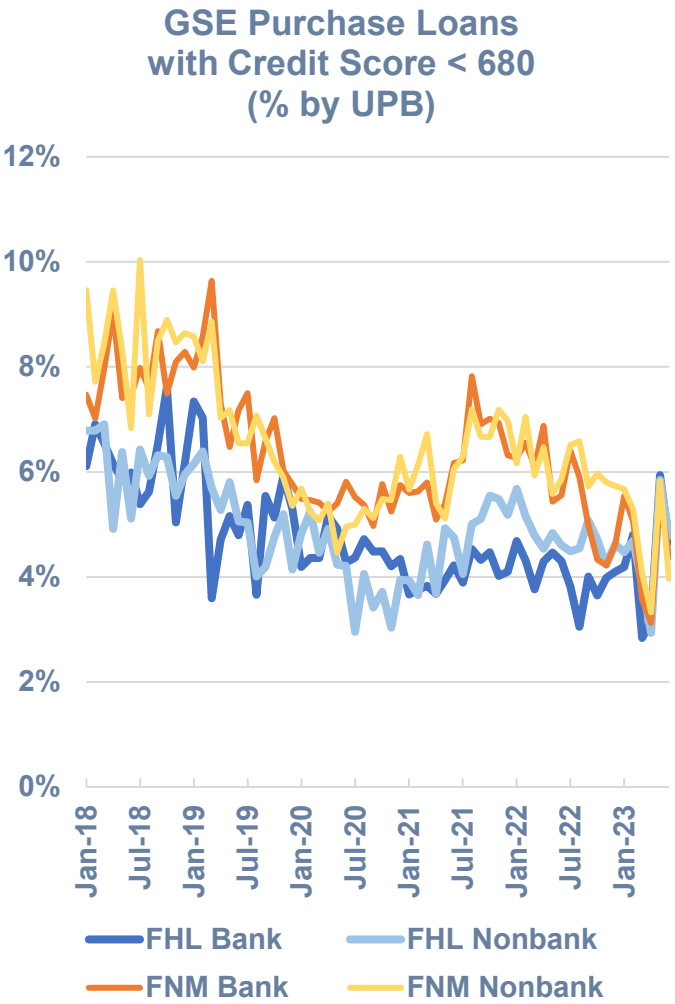
Source: Fannie Mae, Freddie Mac, Ginnie Mae, Recursion Co.

Single family starts are in balance with completions while multifamily starts lag



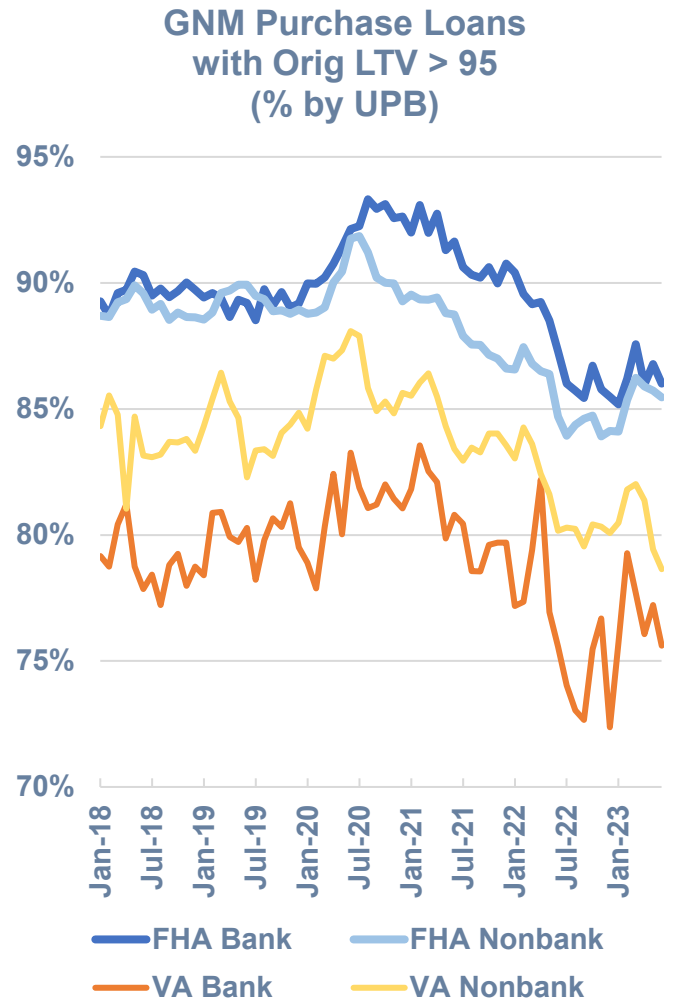
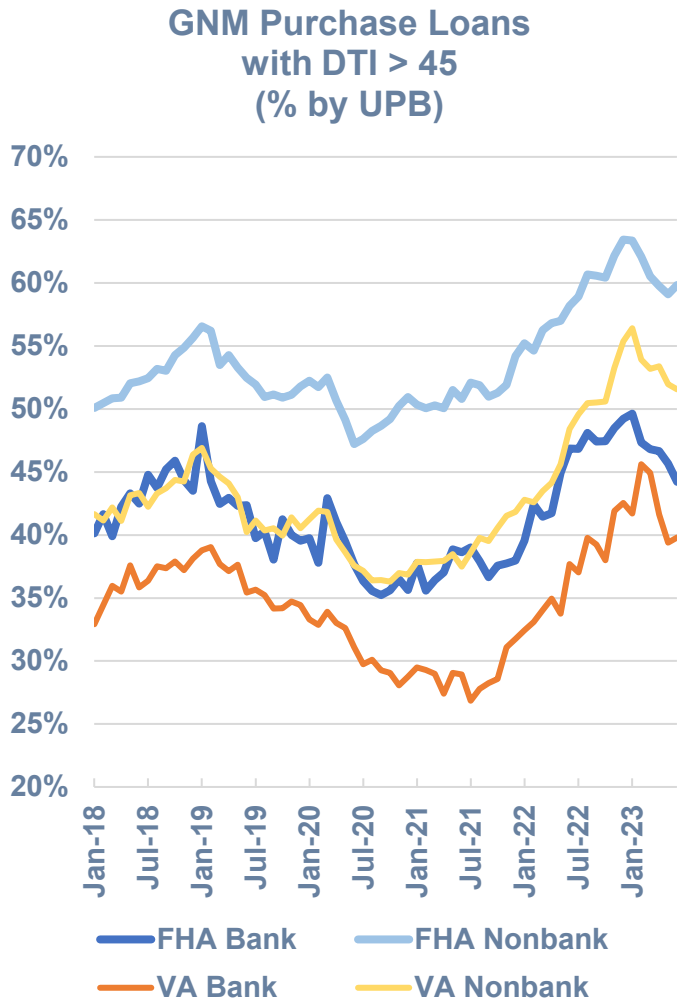
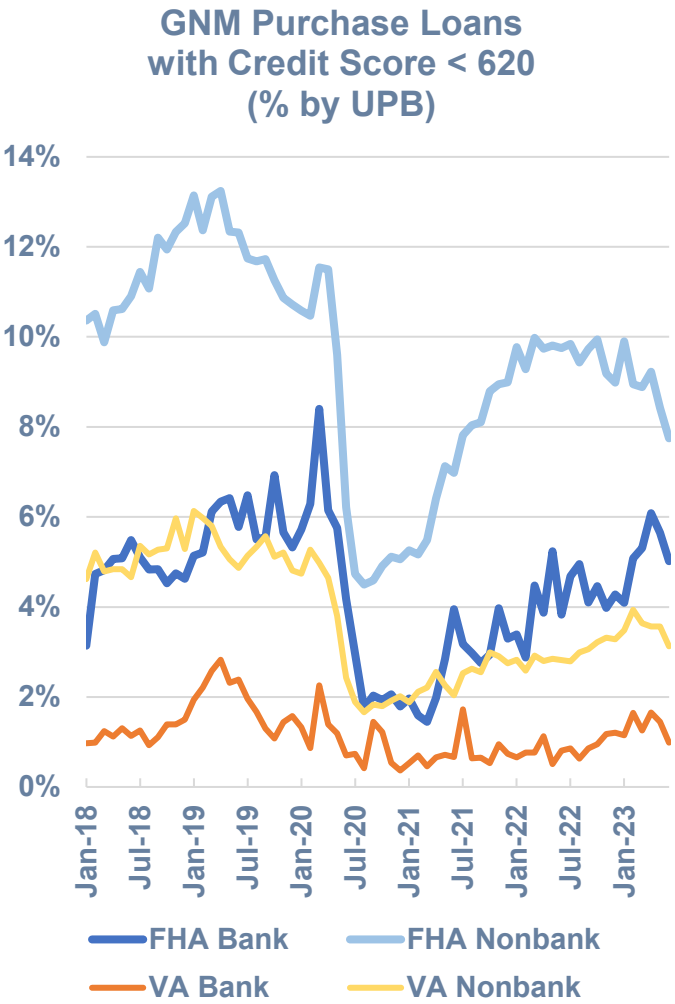
Source: Census Bureau, HUD, Recursion Co.

Signs of caution in underwriting standards for GSE loans by banks and nonbanks, although a significant share of loans is going to highly indebted borrowers



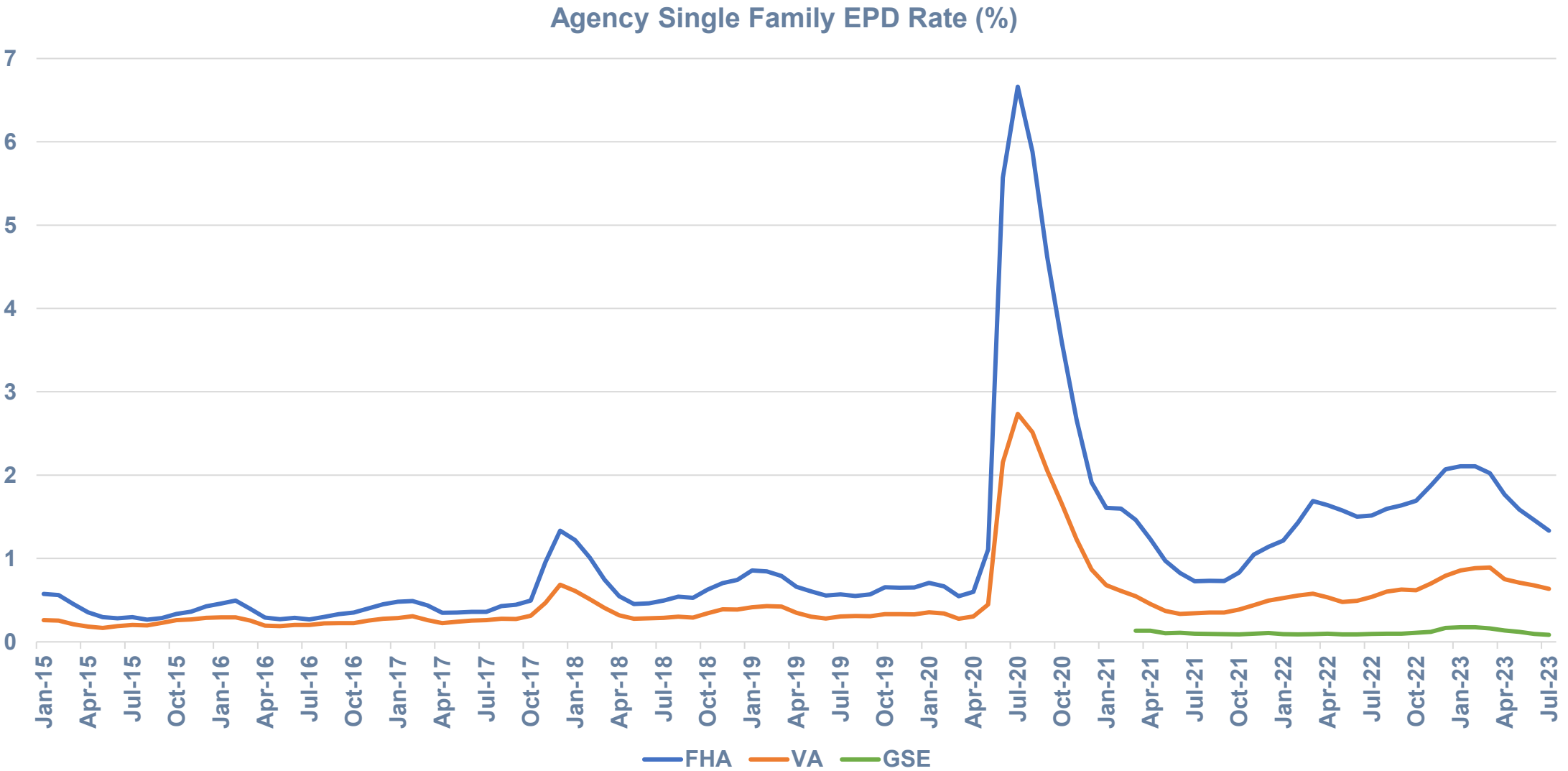
Source: Fannie Mae, Freddie Mac, Recursion Co.

In comparison, caution is more pronounced in FHA/VA lending standards



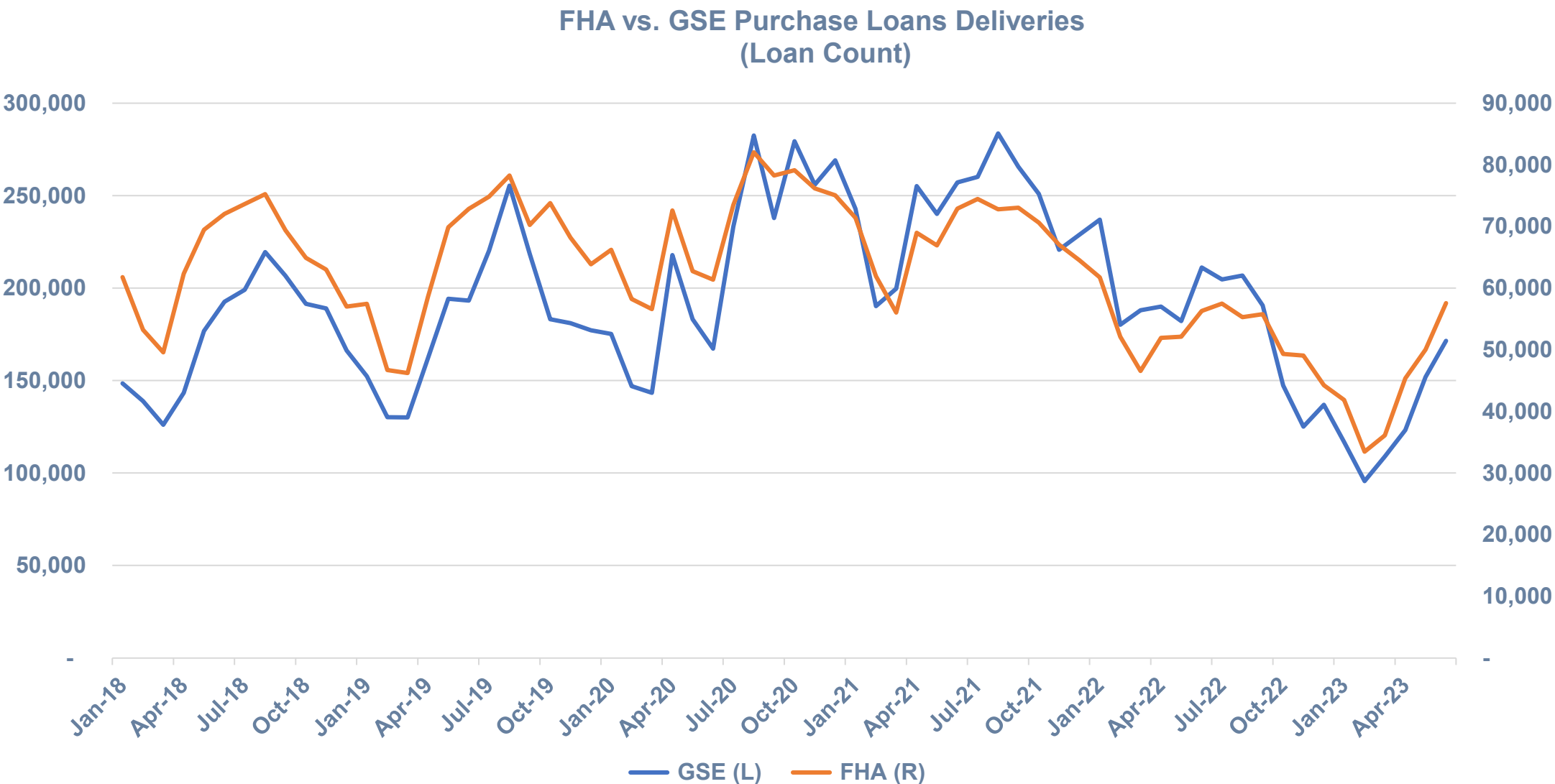
Source: Ginnie Mae, Recursion Co.

Early Payment Defaults declined across Agencies



Source: Fannie Mae, Freddie Mac, Ginnie Mae, Recursion Co.

Purchase loan deliveries have rebounded this year, boosted in part by fee reductions



Source: Fannie Mae, Freddie Mac, Ginnie Mae, Recursion Co.

FHA cut its MIP by 30 bps in March, while the GSE's implemented complex changes in the structure of its upfront fees

Changes in GSE LLPAs Matrix
(Applicable for purchase loans with terms greater than 15 years)

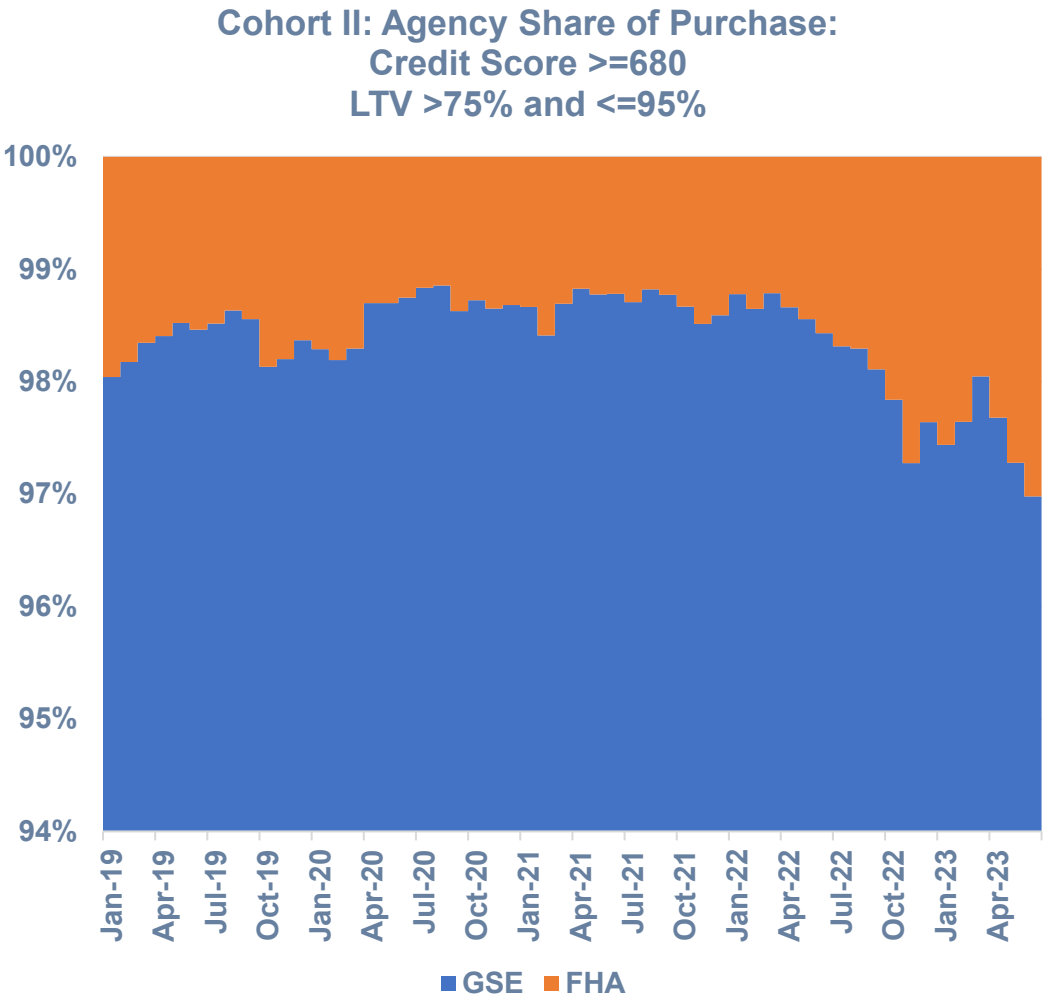
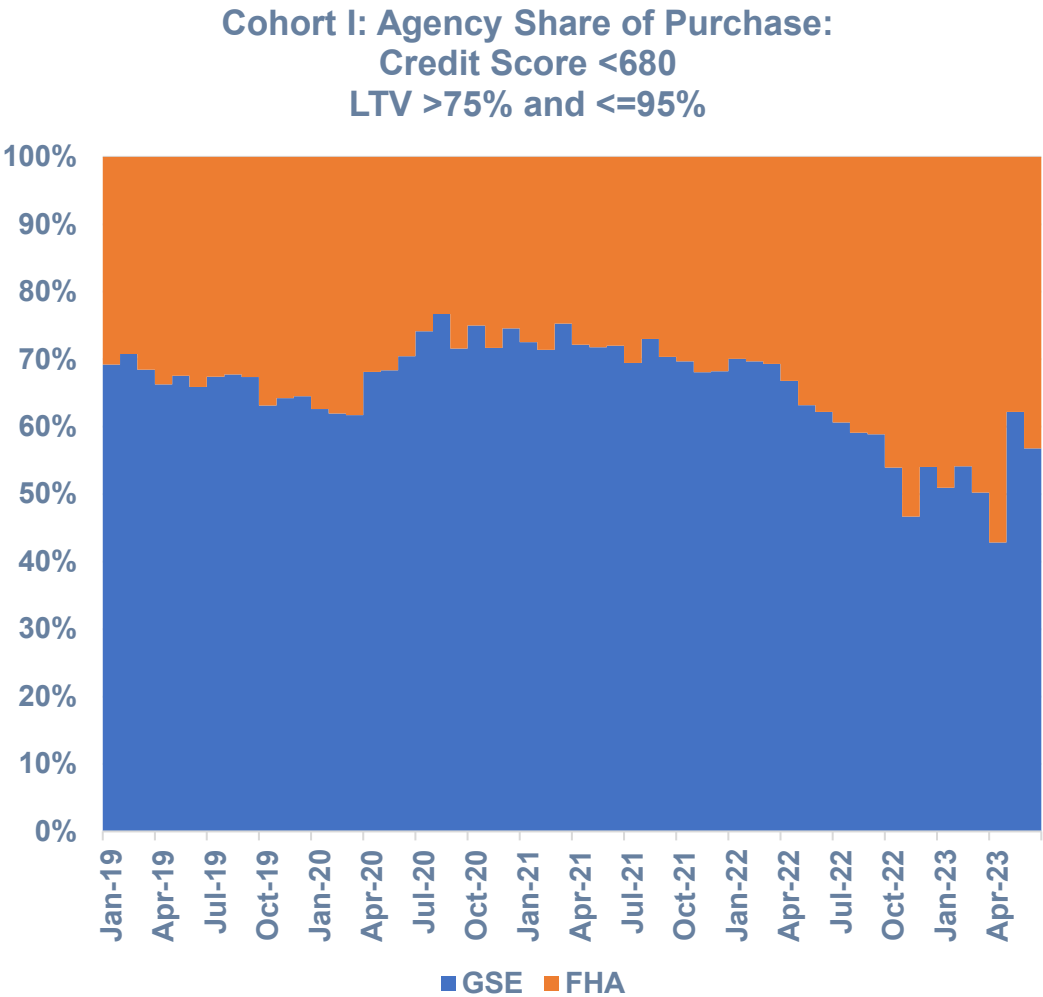
	LTV Range								
Credit Score	≤ 30.00%	30.01 – 60.00%	60.01 – 70.00%	70.01 – 75.00%	75.01 – 80.00%	80.01 – 85.00%	85.01 – 90.00%	90.01 – 95.00%	>95.00%
≥ = 780	0.000%	0.000%	-0.250%	-0.250%	-0.125%	0.125%	0.000%	0.000%	-0.625%
760 – 779	0.000%	0.000%	-0.250%	0.000%	0.125%	0.375%	0.250%	0.250%	-0.500%
740 – 759	0.000%	0.000%	-0.125%	0.125%	0.375%	0.750%	0.500%	0.375%	-0.250%
720 – 739	0.000%	0.000%	0.000%	0.250%	0.500%	0.750%	0.500%	0.375%	-0.250%
700 – 719	0.000%	0.000%	-0.125%	-0.125%	0.125%	0.500%	0.250%	0.125%	-0.625%
680 – 699	0.000%	0.000%	0.125%	-0.125%	0.000%	0.375%	0.250%	0.125%	-0.375%
660 – 679	0.000%	0.000%	-0.250%	-0.875%	-0.875%	-0.625%	-0.500%	-0.625%	-1.000%
640 - 659	-0.500%	-0.500%	-0.125%	-1.250%	-0.750%	-0.750%	-0.750%	-0.875%	-1.250%
≤ 639	-0.500%	-0.375%	0.000%	-0.875%	-0.375%	-0.375%	-0.625%	-1.000%	-1.750%

Cohort II

Cohort I

Source: Fannie Mae, Recursion Co.

FHA gained market share in the cohort where the GSEs raised fees, but lost share otherwise



Source: Fannie Mae, Freddie Mac, Ginnie Mae, Recursion Co.



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