

Mission Index Framework

Single-Family Capital Markets

February 2024





Evolution of the Mission Index



Overview

- Fannie Mae is enhancing our Social Index disclosures – including a name change to the Mission Index¹ – in Feb 2024. The evolution reflects market feedback.
- We are refreshing the name of the Social Index to the Mission Index to highlight the Enterprise-specific focus of the disclosure and to tie it more closely to our mission-oriented lending activities in support of U.S. housing.
- Most of the criteria underlying the Mission Index will remain the same. The area median income (AMI) caps applicable to certain criteria have been revised pursuant to market feedback.
- In aggregate, the re-formulation of the Mission Index has the effect of modestly reducing the qualifying population.
- Like the Social Index, the Mission Index will form the basis of our Single-Family MBS pool-level disclosures, which will be renamed to the Mission Criteria Share (MCS) and Mission Density Score (MDS). Outstanding pools will not be rescored with the re-formulation and will retain their original scores.
- The Mission Index design is adaptable and allows the underlying criteria to be adjusted over time as the types of borrowers that need support in obtaining housing finance evolve. We will provide the market with advance notice prior to making any potential future updates.

Background

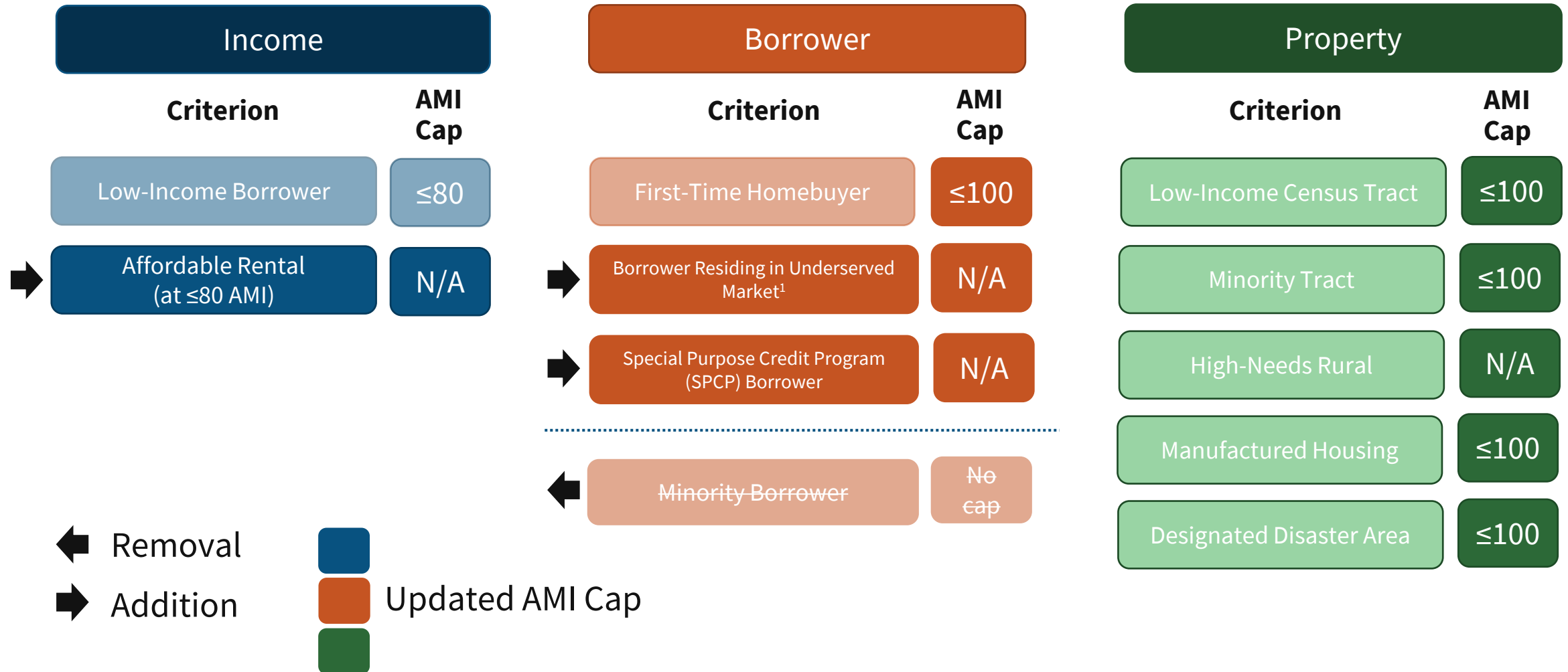
We introduced the Social Index in August 2022 in response to investor interest in allocating capital in support of affordable housing and to provide access to credit for underserved borrowers and markets.

The Index was developed to support this interest while balancing several factors, including the efficient functioning of the MBS market and protecting borrower privacy.

1. In this presentation, we will refer to the original Social Index formulation as Mission Index v1 and the re-formulated Mission Index as Mission Index v1.1.



Mission Score Formulation Adjustments



¹ Borrower Residing in Underserved Markets would initially comprise applicants from High Poverty Area census tracts, defined as: any census tract with a poverty rate of at least 20% as measured by the five-year data series available from the American Community Survey. Additional areas may be added to this criterion, as necessary.



Mission Index Criteria

The ten criteria identified below reflect GSE Mission-focused activities that investors have expressed interest in supporting.

Low-Income Borrower

High housing costs, in part driven by difficulties obtaining affordable financing, continue to create financial hardship for many lower income families.

Affordable Rental

Financing for properties that contain at least one rental unit that is affordable to renters earning ≤ 80 Area Median Income (AMI) help increase the supply of affordable housing.

First-Time Homebuyer

Supporting First-Time Homebuyers helps expand sustainable access to homeownership.

Borrower Residing in Underserved Market

Borrowers residing in a High Poverty Area census tract at the time of loan application face additional access to credit challenges, and supporting such borrowers aligns with our mission to assist underserved areas.

Special Purpose Credit Program (SPCP) Borrower

As authorized in the Equal Credit Opportunity Act and outlined in our Equitable Housing Finance Plan, Special Purpose Credit Programs (SPCPs) are a tool designed to overcome inequities in the US housing market.

Low-Income Census Tract

Some census tracts are disadvantaged and have a median income that is low relative to the surrounding county. Supporting these areas can facilitate sustainable homeownership for entire communities.

Minority Tract

Historic redlining excluded many minority areas from equitable access to the housing finance system, worsening racial inequality.

High-Needs Rural

A targeted subset of rural regions as designated by FHFA that are characterized by a high concentration of poverty and substandard housing conditions. A disproportionate number of families in these rural areas struggle to own a home.

Designated Disaster Area

Families located in disaster areas designated by FEMA often require temporary support to continue to afford quality affordable housing.

Manufactured Housing

Manufactured housing provides an affordable alternative to site-built homes, allowing for the expansion of homeownership in a supply constrained market.



Criteria-Specific Inclusion Rationale

Dimension	Criterion	Income Limit	Mission Element	Description/Rationale
Income	Low-Income Borrower	80% of AMI	Liquidity, Affordability	Our Charter directs us to facilitate the financing of residential mortgages for low-income borrowers , with a special focus in Housing Goals.
Income	Affordable Rental	N/A	Liquidity, Affordability	Our Mission obligates us to facilitate equitable and sustainable access to quality, affordable rental housing , with a special focus in Housing Goals.
Borrower	First-Time Homebuyer	100% of AMI	Liquidity, Affordability	Our Charter directs us to promote access to credit, with a special focus on first-time homebuyers in the GSE Act.
Borrower	Residing in Underserved Market	N/A	Liquidity, Affordability	Our Charter directs us to promote access to credit throughout the Nation, with a special focus on underserved areas .
Borrower	Special Purpose Credit Program (SPCP) Loan	N/A	Liquidity, Affordability	Our Equitable Housing Finance Plan commits us to supporting the expansion of homeownership through Special Purpose Credit Programs.
Property	Low-Income Census Tract	100% of AMI	Liquidity, Affordability	Our Mission obligates us to facilitate equitable and sustainable access to homeownership, with a special focus in Housing Goals .
Property	Minority Tract	100% of AMI	Liquidity, Affordability	Our Mission obligates us to facilitate equitable and sustainable access to homeownership, with a special focus in Housing Goals .
Property	High-Needs Rural Area	N/A	Liquidity, Affordability	Our Mission obligates us to facilitate equitable and sustainable access to homeownership, with a special focus in Duty to Serve .
Property	Manufactured Housing	100% of AMI	Liquidity, Affordability	Our Mission obligates us to facilitate equitable and sustainable access to homeownership, with a special focus in Duty to Serve .
Property	Designated Disaster Area	100% of AMI	Liquidity, Stability	Our Charter directs us to provide liquidity and stability in the secondary market for residential mortgages, with a special focus in Housing Goals .



Hypothetical Sample Pool

Mission Index Methodology:

- For each loan in the pool, determine if the loan meets *any* of the ten mission criteria. If it meets one or more criteria, the loan is mission-oriented for purposes of this disclosure.
 - Mission Criteria Share (SCS):** 90% of the loans in this sample pool are mission oriented in this construct.
- The ten mission criteria are further segmented into three dimensions (note color-coding). Determine which mission dimension each loan meets based on the criteria mappings (binary result – either 1 or 0). The loan-level score is the count of the dimensions it satisfies.
 - Mission Density Score (MDS):** the simple average of the loan-level score for this pool is 1.5. Note, the maximum reported MDS is capped at 2.5 to protect borrower privacy.

Table 1: Methodology Illustration for a Hypothetical Pool of 10 Loans

	Loan:	1	2	3	4	5	6	7	8	9	10	
Mission Criteria	Low-Income Borrower	1	1	1	0	1	1	0	1	0	1	
	Affordable Rental	1	0	1	1	0	0	0	0	0	0	
	First-Time Homebuyer	0	1	0	0	1	1	0	0	0	1	
	Borrower in Underserved Market	1	0	0	1	1	1	1	0	0	0	
	Special Purpose Credit Program (SPCP) Borrower	0	0	0	0	0	0	1	1	0	1	
	Designated Disaster Area	1	1	0	1	0	0	1	1	0	1	
	Low-Income Census Tract	1	1	0	1	1	0	0	0	0	0	
	Manufactured Housing	1	0	1	0	1	1	0	1	0	0	
	High-Needs Rural	1	1	0	0	1	0	0	1	0	1	
	Minority Tract	0	0	1	1	1	0	0	1	0	0	
	Criteria Met Indicator¹	1	1	1	1	1	1	1	1	0	1	90% MCS
Mission Dimensions	Income	1	1	1	1	1	1	0	1	0	1	
	Borrower	1	1	0	1	1	1	1	1	0	1	
	Property	1	1	1	1	1	1	1	1	0	1	
	Loan-level Score²	3	3	2	3	3	3	2	3	0	3	2.5 MDS

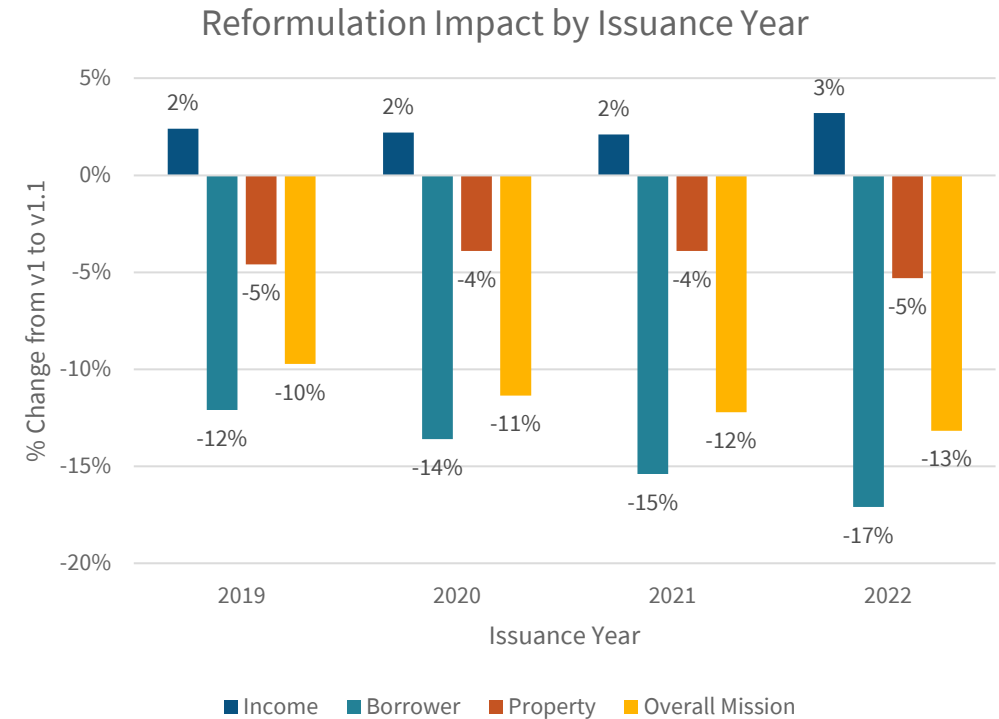
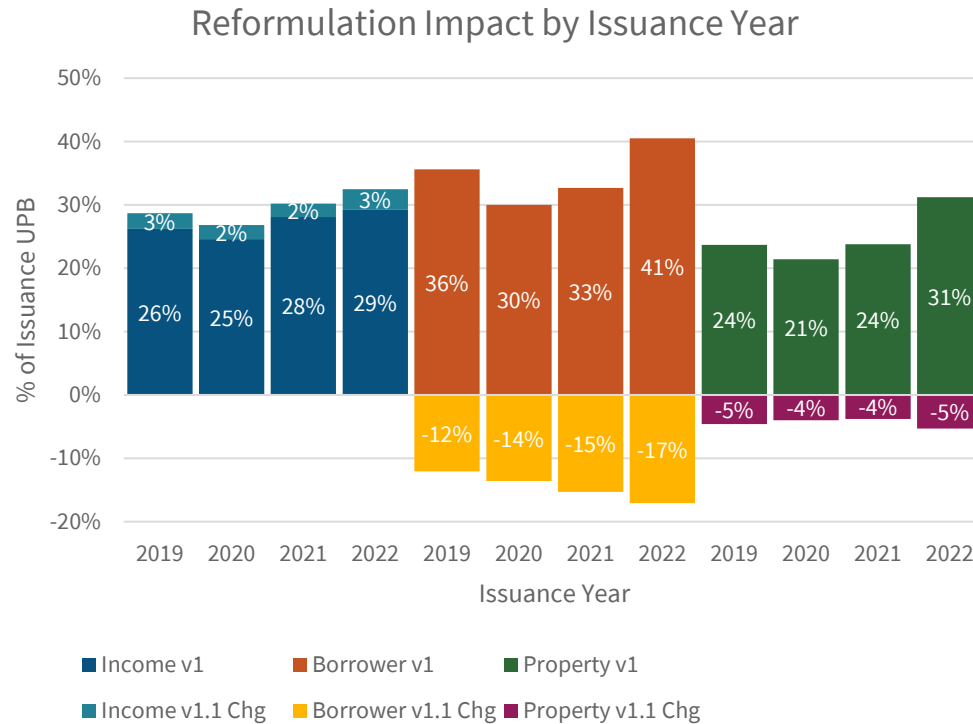
¹ Indicates a loan met any of the criteria

² Loan-Level Score is the sum of the three mission dimension scores.



Loan-level Mission Index Re-Formulation Impact¹

- The largest impact of the re-formulation is on the Borrower dimension, with qualifying loan populations declining 12-17% (yellow bars in left-hand chart).
- The impact of the re-formulation on the Income dimension is very modestly additive (aquamarine bars in left-hand chart), while the impact on the Property dimension is very modestly reductive (purple bars in left-hand chart).
- In aggregate, the Mission-eligible loan population – the population of borrowers that satisfies *at least one* Mission dimension – declines by 10-13% (yellow bars in right-hand chart).



1. Includes loans issued in MBS pools with CL prefix only.



2022 Loan-Level Mission Index Re-Formulation Impact¹

Income		Borrower		Property	
Mission Score v1					
Low-Income Borrower	29.3%	Minority Borrower	27.6%	Low-Income Census Tract	13.1%
Income Dimension²	29.3%	First-Time Home Buyer	19.7%	High Needs Rural	1.1%
		Borrower Dimension²	40.5%	Manufactured Housing	0.7%
				Minority Tract	17.7%
				Designated Disaster Area	15.7%
				Property Dimension²	31.2%
Mission Score v1.1					
Low-Income Borrower	29.3%	First-Time Home Buyer	15.5%	Low-Income Census Tract	11.1%
Affordable Rental	4.0%	Borrower Residing in	10.5%	High Needs Rural	2.1%
Income Dimension²	32.5%	Underserved Market		Manufactured Housing	0.6%
		SPCP Borrower ³	0.0%	Minority Tract	14.5%
		Borrower Dimension²	23.4%	Designated Disaster Area	11.8%
				Property Dimension²	25.9%
Income Change²	3.2%	Borrower Change²	-17.1%	Property Change²	-5.3%

1. Includes loans issued in 2022 MBS pools with CL prefix only.

2. Percentages are not additive due to overlap between populations (i.e., a single loan may have both a low-income borrower and an affordable rental unit but would only count toward the Income dimension once).

3. Fannie Mae launched its special purpose credit program (SPCP) in October 2022.



Loan-Level Mission Score Transitions by Vintage

2022 Vintage

		Mission Score v1				% of Total ¹	% Chg ³
		3	2	1	0		
Mission Score v1.1	3	70%	3%	0%	0%	5%	-23%
	2	30%	60%	2%	0%	13%	-23%
	1	0%	18%	38%	7%	18%	-41%
	0	0%	19%	60%	92%	64%	38%
	% of Total ²	7%	17%	30%	46%	100%	

2021 Vintage

		Mission Score v1				% of Total ¹	% Chg ³
		3	2	1	0		
Mission Score v1.1	3	52%	4%	0%	0%	3%	-35%
	2	48%	57%	2%	0%	10%	-21%
	1	0%	24%	41%	5%	18%	-40%
	0	0%	15%	57%	95%	69%	31%
	% of Total ²	5%	13%	30%	53%	100%	

2020 Vintage

		Mission Score v1				% of Total ¹	% Chg ³
		3	2	1	0		
Mission Score v1.1	3	52%	5%	0%	0%	2%	-32%
	2	48%	54%	2%	0%	8%	-24%
	1	0%	25%	40%	5%	17%	-40%
	0	0%	16%	58%	95%	73%	25%
	% of Total ²	3%	10%	28%	58%	100%	

2019 Vintage

		Mission Score v1				% of Total ¹	% Chg ³
		3	2	1	0		
Mission Score v1.1	3	68%	4%	0%	0%	3%	-20%
	2	31%	58%	2%	0%	8%	-25%
	1	0%	20%	39%	6%	16%	-39%
	0	0%	17%	59%	93%	72%	24%
	% of Total ²	4%	11%	27%	58%	100%	

Note: Population of loans that collateralizes CL Prefix non-specified pools.

1. % of Total column represents the share of loans by Mission Score v1.1.
2. % of Total row represents the share of loans by Mission Score v1.
3. % Chg represents the change in the loan count in a given Mission Score v1.1.



Pool-Level MDS Re-Formulation Impact

2022 Fannie Mae CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	97%	1%	0%	-	-	-	-	-	-	-	-	-	-	
	2.75	2%	80%	1%	0%	-	-	-	-	-	-	-	-	-	
	2.50	1%	16%	82%	2%	-	-	-	-	-	-	-	-	-	
	2.25	-	3%	13%	69%	2%	0%	-	0%	-	-	-	-	-	
	2.00	0%	-	4%	22%	58%	8%	0%	-	0%	-	-	-	0%	
	1.75	-	-	0%	5%	22%	39%	6%	0%	0%	-	-	-	-	
	1.50	-	-	1%	2%	10%	40%	44%	9%	1%	0%	0%	-	0%	
	1.25	-	-	-	-	3%	10%	35%	42%	8%	1%	0%	0%	-	
	1.00	-	-	-	0%	2%	3%	11%	37%	40%	8%	3%	2%	1%	
	0.75	-	-	-	-	0%	1%	2%	7%	29%	20%	5%	3%	1%	
0.50	-	-	-	-	0%	0%	1%	3%	16%	44%	27%	15%	6%		
0.25	-	-	-	-	-	0%	0%	1%	3%	23%	48%	36%	11%		
0.00	-	-	-	-	2%	-	0%	0%	2%	4%	16%	44%	80%		
Avg Chg in Density		-0.01	-0.04	-0.05	-0.10	-0.18	-0.14	-0.15	-0.14	-0.17	-0.22	-0.19	-0.07	0.07	-0.15

2022 Fannie Mae Non-spec CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	93%	1%	-	-	-	-	-	-	-	-	-	-	-	
	2.75	2%	74%	2%	-	-	-	-	-	-	-	-	-	-	
	2.50	4%	21%	77%	2%	-	-	-	-	-	-	-	-	-	
	2.25	-	4%	18%	67%	5%	-	-	-	-	-	-	-	-	
	2.00	-	-	4%	24%	53%	7%	-	-	-	-	-	-	-	
	1.75	-	-	-	6%	30%	39%	2%	-	-	-	-	-	-	
	1.50	-	-	-	1%	10%	38%	32%	3%	-	-	-	-	-	
	1.25	-	-	-	-	1%	11%	37%	27%	2%	0%	-	-	-	
	1.00	-	-	-	0%	0%	4%	23%	40%	16%	0%	1%	-	-	
	0.75	-	-	-	-	-	-	4%	20%	45%	12%	2%	1%	-	
0.50	-	-	-	-	-	1%	1%	9%	31%	68%	27%	9%	0%		
0.25	-	-	-	-	-	-	-	1%	4%	19%	61%	49%	5%		
0.00	-	-	-	-	1%	-	1%	-	2%	1%	10%	42%	95%		
Avg Chg in Density		-0.02	-0.05	-0.05	-0.09	-0.14	-0.17	-0.25	-0.25	-0.29	-0.26	-0.20	-0.12	0.01	-0.18

1. Shows the transition of pools from a given MDS v1 bucket across MDS v1.1 equivalent buckets. Percentages are the share of pools in a given MDS v1 bucket.



Pool-Level MDS Re-Formulation Impact

2021 Fannie Mae CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	95%	1%	0%	-	0%	-	-	-	-	-	-	-	-	
	2.75	1%	89%	1%	-	-	-	-	-	-	-	-	-	-	
	2.50	3%	7%	85%	2%	-	-	-	-	-	-	-	-	-	
	2.25	-	2%	10%	67%	3%	0%	-	-	-	-	-	-	-	
	2.00	2%	1%	4%	23%	54%	9%	0%	0%	0%	-	-	-	-	
	1.75	-	-	0%	5%	25%	34%	7%	0%	0%	0%	-	-	-	
	1.50	-	-	-	3%	13%	41%	49%	8%	1%	0%	0%	-	-	
	1.25	-	-	-	0%	3%	12%	32%	45%	7%	1%	0%	0%	0%	
	1.00	-	-	-	-	1%	3%	10%	38%	47%	9%	2%	1%	1%	
	0.75	-	-	-	-	-	1%	1%	6%	32%	32%	6%	3%	2%	
0.50	-	-	-	-	-	0%	1%	2%	10%	42%	26%	9%	7%		
0.25	-	-	-	-	-	-	0%	0%	2%	13%	54%	43%	15%		
0.00	-	-	-	-	1%	-	0%	0%	1%	2%	12%	44%	74%		
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
Avg Chg in Density		-0.03	-0.03	-0.04	-0.09	-0.16	-0.16	-0.13	-0.12	-0.12	-0.15	-0.17	-0.09	0.07	-0.13

2021 Fannie Mae Non-spec CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	63%	-	-	-	-	-	-	-	-	-	-	-	-	
	2.75	5%	85%	1%	-	-	-	-	-	-	-	-	-	-	
	2.50	21%	4%	74%	2%	-	-	-	-	-	-	-	-	-	
	2.25	-	4%	17%	62%	3%	-	-	-	-	-	-	-	-	
	2.00	11%	7%	8%	28%	45%	6%	-	-	-	-	-	-	-	
	1.75	-	-	1%	6%	30%	39%	4%	-	-	-	-	-	-	
	1.50	-	-	-	2%	18%	43%	52%	6%	1%	-	-	-	-	
	1.25	-	-	-	-	3%	9%	33%	34%	3%	0%	-	-	-	
	1.00	-	-	-	-	-	2%	8%	42%	27%	1%	0%	-	-	
	0.75	-	-	-	-	-	1%	3%	10%	37%	15%	1%	0%	-	
0.50	-	-	-	-	-	-	-	7%	28%	66%	19%	3%	4%		
0.25	-	-	-	-	-	-	-	-	3%	16%	74%	54%	11%		
0.00	-	-	-	-	-	-	-	-	1%	0%	1%	6%	43%	84%	
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
Avg Chg in Density		-0.18	-0.07	-0.08	-0.10	-0.17	-0.16	-0.14	-0.19	-0.22	-0.23	-0.20	-0.13	0.00	-0.17

1. Shows the transition of pools from a given MDS v1 bucket across MDS v1.1 equivalent buckets. Percentages are the share of pools in a given MDS v1 bucket.



Pool-Level MDS Re-Formulation Impact

2020 Fannie Mae CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	95%	1%	0%	-	0%	-	-	-	-	-	-	-	-	
	2.75	3%	86%	1%	0%	0%	-	-	-	-	-	-	-	-	
	2.50	2%	10%	87%	2%	0%	-	-	-	-	-	-	-	-	
	2.25	-	3%	9%	72%	2%	-	-	0%	-	-	-	-	-	
	2.00	1%	1%	2%	20%	64%	7%	1%	-	0%	-	-	-	0%	
	1.75	-	-	0%	3%	21%	42%	6%	1%	-	-	-	-	-	
	1.50	-	-	1%	1%	9%	37%	51%	10%	1%	0%	-	-	-	
	1.25	-	-	-	-	2%	10%	31%	50%	9%	1%	0%	0%	-	
	1.00	-	-	-	-	1%	3%	9%	32%	49%	8%	2%	1%	1%	
	0.75	-	-	-	-	-	1%	1%	5%	29%	34%	5%	2%	1%	
0.50	-	-	-	-	-	0%	1%	2%	8%	43%	28%	9%	4%		
0.25	-	-	-	-	-	-	0%	1%	2%	12%	54%	45%	15%		
0.00	-	-	-	-	1%	-	0%	0%	1%	2%	10%	44%	78%		
Avg Chg in Density		-0.02	-0.03	-0.04	-0.07	-0.14	-0.15	-0.11	-0.09	-0.10	-0.15	-0.16	-0.10	0.05	-0.11

2020 Fannie Mae Non-spec CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	73%	-	-	-	-	-	-	-	-	-	-	-	-	
	2.75	18%	81%	2%	1%	-	-	-	-	-	-	-	-	-	
	2.50	9%	15%	81%	3%	1%	-	-	-	-	-	-	-	-	
	2.25	-	-	10%	63%	2%	-	-	1%	-	-	-	-	-	
	2.00	-	4%	4%	27%	52%	6%	2%	-	-	-	-	-	-	
	1.75	-	-	1%	5%	33%	47%	4%	-	-	-	-	-	-	
	1.50	-	-	1%	2%	11%	37%	57%	7%	-	-	-	-	-	
	1.25	-	-	-	-	1%	9%	29%	45%	7%	-	-	-	-	
	1.00	-	-	-	-	1%	1%	9%	36%	36%	4%	0%	-	-	
	0.75	-	-	-	-	-	-	1%	8%	36%	16%	1%	1%	1%	
0.50	-	-	-	-	-	-	-	2%	18%	59%	18%	4%	2%		
0.25	-	-	-	-	-	-	-	-	3%	21%	74%	52%	11%		
0.00	-	-	-	-	-	-	-	1%	-	6%	43%	86%	-		
Avg Chg in Density		-0.08	-0.05	-0.06	-0.09	-0.14	-0.14	-0.10	-0.14	-0.18	-0.22	-0.19	-0.13	0.01	-0.15

1. Shows the transition of pools from a given MDS v1 bucket across MDS v1.1 equivalent buckets. Percentages are the share of pools in a given MDS v1 bucket.



Pool-Level MDS Re-Formulation Impact

2019 Fannie Mae CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	95%	2%	-	-	0%	-	-	-	-	-	-	-	-	
	2.75	3%	70%	1%	-	-	-	-	-	-	-	-	-	-	
	2.50	1%	22%	78%	2%	-	-	-	-	-	-	-	-	-	
	2.25	1%	5%	16%	64%	2%	-	-	-	-	-	-	-	-	
	2.00	1%	1%	5%	27%	68%	5%	1%	0%	0%	-	-	-	-	
	1.75	-	-	0%	5%	18%	51%	7%	0%	0%	-	0%	-	-	
	1.50	-	-	1%	2%	8%	33%	51%	11%	2%	0%	-	-	-	
	1.25	-	-	-	0%	2%	8%	30%	46%	11%	2%	0%	0%	-	
	1.00	-	-	-	0%	1%	2%	10%	34%	48%	11%	3%	1%	2%	
	0.75	-	-	-	-	0%	1%	1%	6%	28%	36%	8%	3%	0%	
0.50	-	-	-	-	0%	0%	1%	2%	9%	40%	31%	11%	3%		
0.25	-	-	-	-	-	0%	-	0%	2%	10%	50%	55%	10%		
0.00	-	-	-	-	0%	-	0%	0%	1%	1%	6%	29%	85%		
Avg Chg in Density		-0.02	-0.07	-0.07	-0.10	-0.11	-0.12	-0.11	-0.10	-0.10	-0.12	-0.12	-0.05	0.04	-0.10

2019 Fannie Mae Non-spec CL Pools¹

		MDS v1 SCORE													
		3.00	2.75	2.50	2.25	2.00	1.75	1.50	1.25	1.00	0.75	0.50	0.25	0.00	
MDS v1.1 EQUIVALENT	3.00	50%	6%	-	-	-	-	-	-	-	-	-	-	-	
	2.75	17%	50%	-	-	-	-	-	-	-	-	-	-	-	
	2.50	17%	31%	65%	1%	-	-	-	-	-	-	-	-	-	
	2.25	17%	13%	22%	59%	4%	-	-	-	-	-	-	-	-	
	2.00	-	-	12%	34%	67%	4%	-	-	-	-	-	-	-	
	1.75	-	-	1%	4%	21%	60%	9%	-	-	-	-	-	-	
	1.50	-	-	-	1%	6%	31%	50%	8%	2%	-	-	-	-	
	1.25	-	-	-	-	1%	5%	29%	36%	2%	-	-	-	-	
	1.00	-	-	-	-	0%	-	11%	39%	38%	4%	1%	-	-	
	0.75	-	-	-	-	-	-	0%	11%	28%	19%	2%	1%	-	
0.50	-	-	-	-	-	-	0%	5%	21%	57%	24%	5%	2%		
0.25	-	-	-	-	-	-	-	-	7%	19%	68%	65%	13%		
0.00	-	-	-	-	-	-	-	-	2%	1%	6%	29%	86%		
Avg Chg in Density		-0.23	-0.11	-0.11	-0.10	-0.08	-0.09	-0.12	-0.17	-0.22	-0.22	-0.18	-0.10	0.02	-0.14

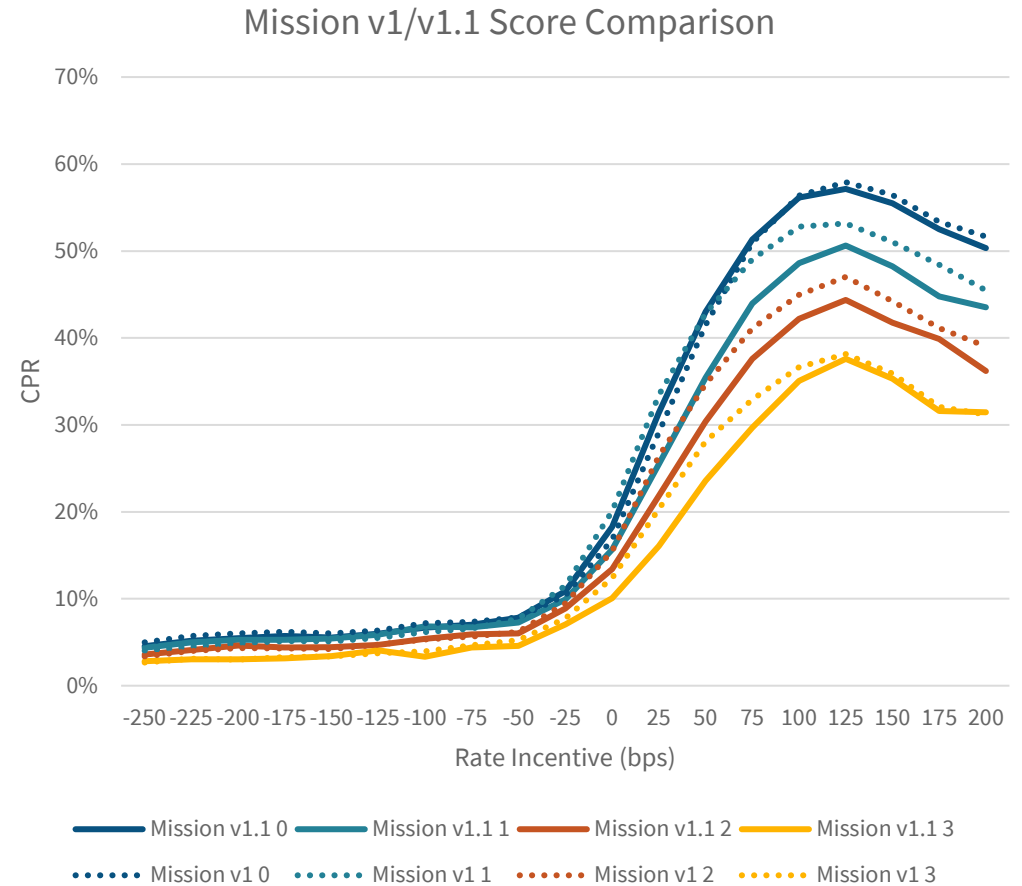
1. Shows the transition of pools from a given MDS v1 bucket across MDS v1.1 equivalent buckets. Percentages are the share of pools in a given MDS v1 bucket.



Loan-Level Mission Score v1.1 Prepays Incrementally Slower

Re-formulated Mission Index criteria result in slightly slower in-the-money prepays for v1.1 Mission Scores 1-3.

- Comparing the loan-level v1 Mission Score s-curve to the loan-level v1.1 Mission Score s-curve, we observe slightly slower in-the-money prepays for v1.1 Mission Scores 1-3.
- The CPR differential is most significant for v1.1 Mission Score 1 loans relative to v1 Mission Score 1 loans.



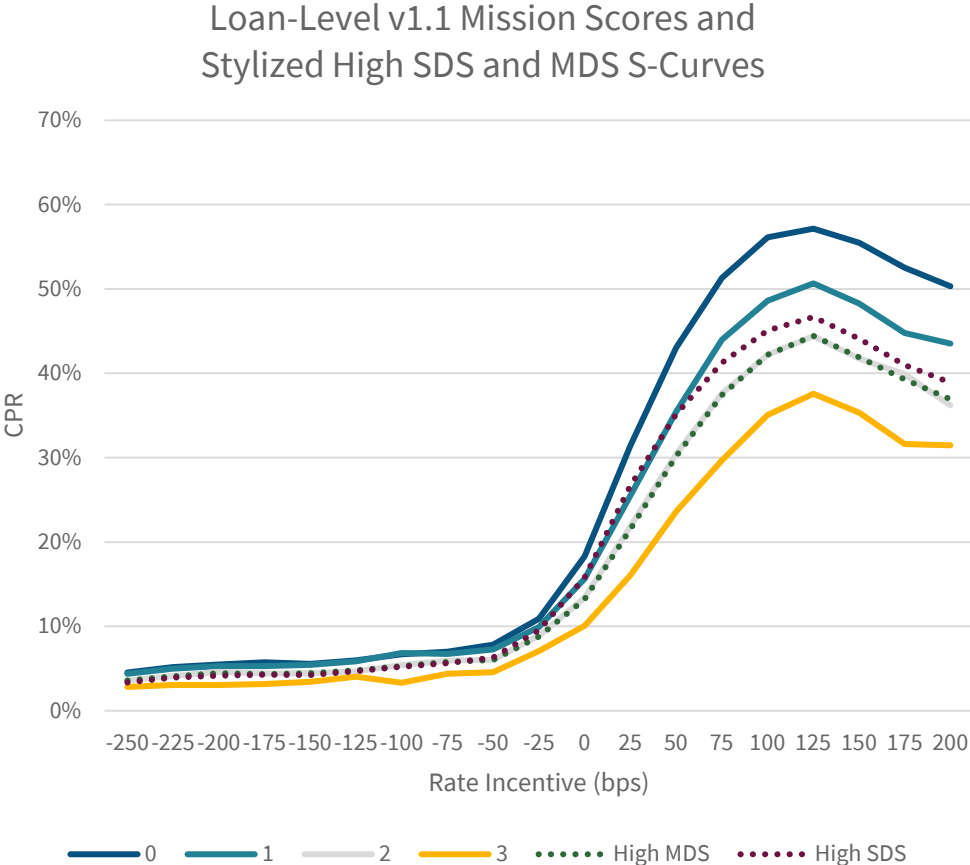
Note: S-curves are calculated using loan-level prepayments. Population consists of loans collateralizing generic, non-specified pools issued Jan-2019 through Jun-2023; WALA 6-18; observation period Jan-2019 through Nov-2023.



Social MBS Optimized to Mission Index v1.1 Provide Additional Call Protection

Stylized High MDS (v1.1) pools are likely to prepay more slowly than High SDS (v1) pools.

- Optimizing Social MBS to the Mission Index v1.1 can be achieved by pooling an equal amount of Mission Score 1 and Mission Score 3 loans, in addition to any available Mission Score 2 loans.
- Given that v1.1 Mission Score loans prepay more slowly in the money than comparable v1 Mission Score loans, we can expect that a stylized Social MBS based on Mission Index v1.1 would similarly prepay more slowly than High SDS pools based on Mission Index v1.



Note: S-curves are calculated using loan-level prepayments. Population consists of loans collateralizing generic, non-specified pools issued Jan-2019 through Jun-2023; WALA 6-18; observation period Jan-2019 through Nov-2023.

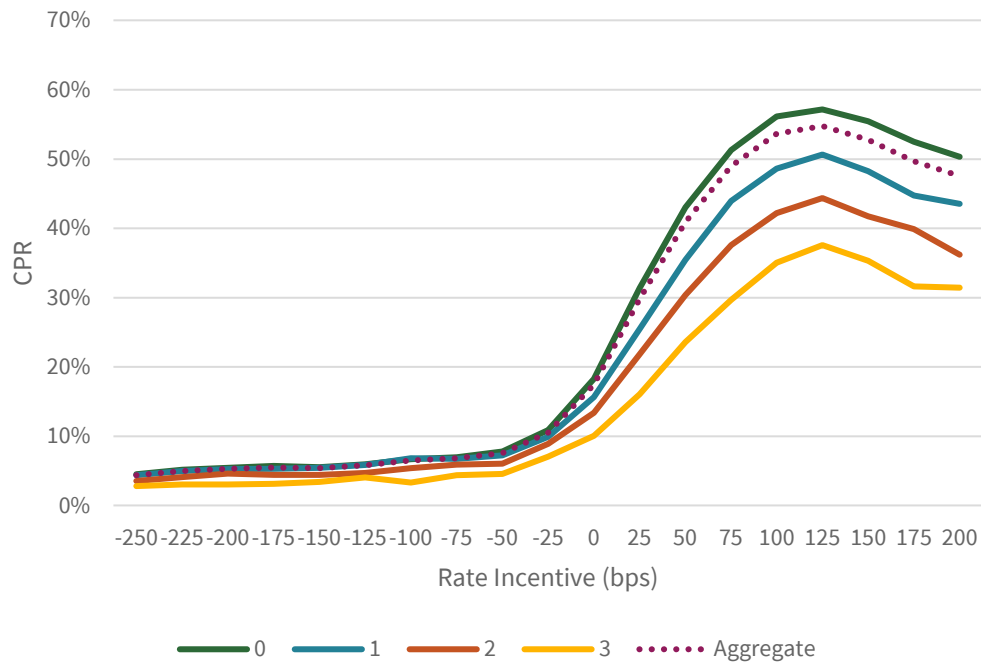


Mission Score Loans Exhibit Significant Call Protection

This result is not surprising given that the characteristics of Mission Score loans generally correlate with better convexity.

- The profile of Mission Score v1.1 loans within the generic non-spec population features lower average loan sizes, credit scores, and Value Acceptance share and higher LTV and DTI ratios and purchase share.
- Social MBS collateralized by Mission Score loans from the generic non-spec population provide an opportunity to access collateral attributes that are not generally stipped for.

30yr Non-spec S-curves by Mission Score v1.1



Profile of 30yr Non-spec loans by Mission Score v1.1

Mission Score v1.1	Avg OLS	Avg WAC	Avg FICO	Avg LTV	Avg DTI	% Purch	% Value Accept
0	382,791	3.61%	758	74%	34%	42%	34%
1	318,264	3.60%	756	74%	39%	41%	34%
2	289,888	3.60%	754	75%	41%	51%	30%
3	269,418	3.79%	750	83%	42%	76%	17%

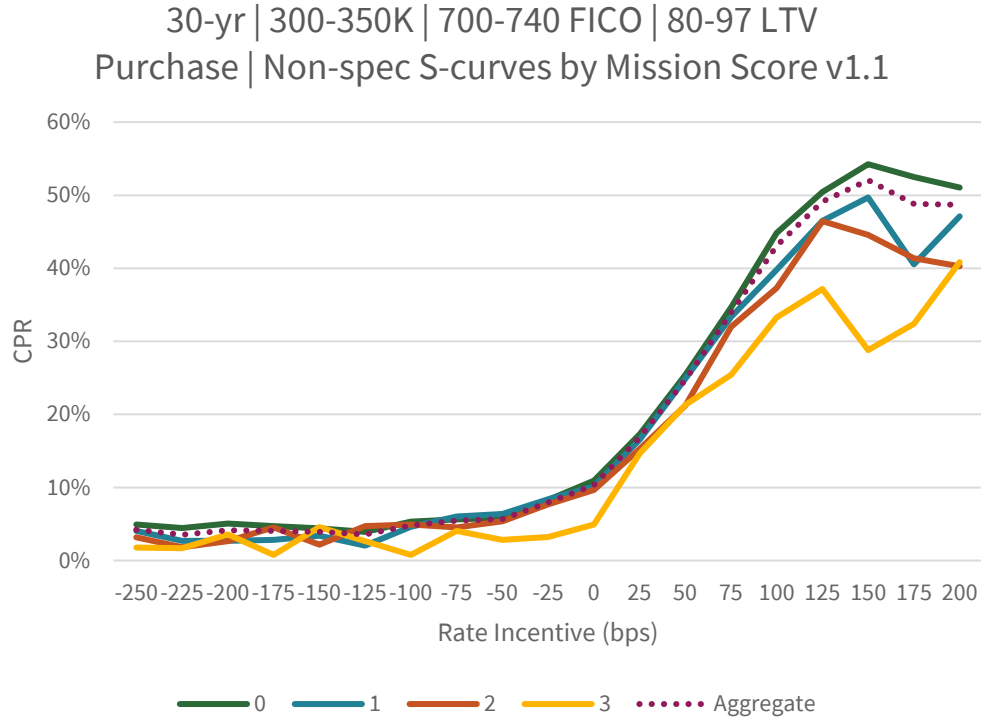
Note: Value Acceptance is formerly known as appraisal waivers. Population consists of loans collateralizing generic, non-specified pools issued Jan-2019 through Jun-2023; WALA 6-18; observation period Jan-2019 through Nov-2023.



Adjusted for Attributes, Mission Score S-curves Still Flatter

Controlling for loan attributes results in some speed compression – but >10 CPR advantage still exists at 100 bps.

A significant gap in in-the-money prepayment speeds still exists even after we control for key disclosed loan attributes. This suggests that higher Mission Scores capture incremental access to credit challenges for the underlying populations of borrowers.



Profile of 30yr 300-350K 700-740 FICO 80-97 LTV Purchase Non-spec loans by Mission Score v1.1

Mission Score v1.1	Avg OLS	Avg WAC	Avg FICO	Avg LTV	Avg DTI	% Purch	% Value Accept
0	324,299	4.01%	721	88%	37%	100%	4%
1	323,410	3.99%	721	89%	40%	100%	4%
2	322,422	3.92%	722	90%	43%	100%	3%
3	322,269	4.01%	722	91%	44%	100%	2%

Note: Value Acceptance is formerly known as appraisal waivers. Population consists of loans collateralizing generic, non-specified pools issued Jan-2019 through Jun-2023; WALA 6-18; observation period Jan-2019 through Nov-2023.

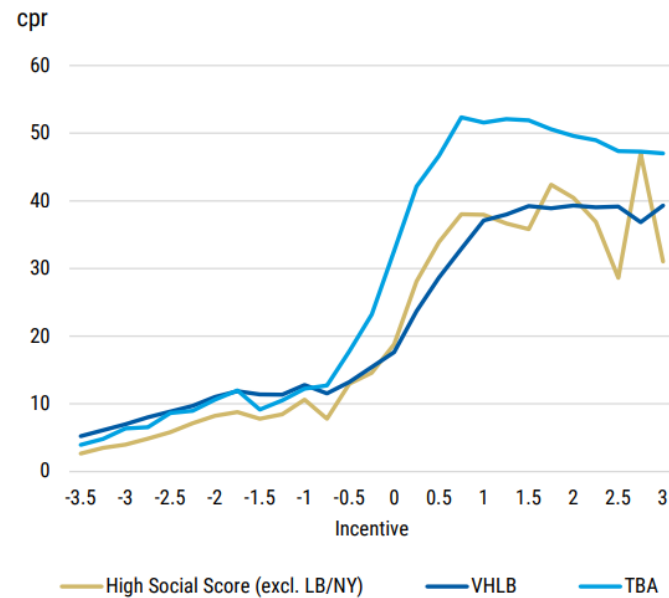


Social Index Disclosures Have Unlocked Convexity Value

High SDS pools have prepaid more slowly than generic non-spec pools in the money.

- Following the launch of Social Index disclosures for MBS, researchers have highlighted the convexity benefit of High SDS pools when in the money. As observed in the bottom left-hand chart, the prepayment profile of High SDS pools is roughly in line with the VHLB (175K max) loan balance story when in the money.
- As observed in the bottom right-hand chart, High SDS/HomeReady pools auctioned by Fannie Mae since Dec-2022 have higher factors today than comparable majors, indicating slower speeds as discounts, as well.

Historical s-curves show high social scores pools with call protection akin to VHLB specs



Source: Morgan Stanley Research, Note: Using 2021-2023 Data, High Social Score pool defined as > 2 SDS, ≥ 95 SCS, excluding loan balance and spec stores; TBA defined as > 275K, ex-NY, < 2 SDS, >95 SCS pools;

FNMA CL Major, 175K Max, and High SDS/HomeReady Factors by Issue Mo/Coupon

Issue Month and Story	3.00	3.50	4.00	4.50	5.00	5.50	6.00	6.50	7.00
Dec-22 Major	0.98	0.95	0.95	0.96	0.94	0.91	0.88	0.86	0.80
Dec-22 175k	-	0.87	0.95	0.93	0.94	0.94	0.91	0.87	0.89
Dec-22 High SDS*	-	-	-	-	0.97	0.92	0.95	-	-
Dec-22 HomeReady*	-	-	-	-	0.97	0.96	0.98	-	-
Jan-23 Major	0.96	0.96	0.95	0.96	0.94	0.92	0.88	0.84	0.78
Jan-23 175k	-	-	-	0.95	0.91	0.93	0.92	0.90	0.82
Jan-23 High SDS*	-	-	-	-	0.94	0.93	0.93	-	-
Jan-23 HomeReady*	-	-	-	-	0.96	0.96	0.94	-	-
Feb-23 Major	0.98	0.95	0.97	0.96	0.94	0.92	0.89	0.85	0.84
Feb-23 175k	-	0.98	0.98	0.94	0.95	0.93	0.92	0.91	0.99
Feb-23 High SDS*	-	-	-	-	0.96	0.95	0.93	0.91	-
Feb-23 HomeReady*	-	-	-	-	0.96	0.97	0.93	-	-
Mar-23 Major	0.96	0.98	0.97	0.97	0.95	0.93	0.92	0.89	0.73
Mar-23 175k	-	-	0.89	0.95	0.95	0.95	0.94	0.93	-
Mar-23 High SDS*	-	-	-	0.97	0.97	0.97	0.94	-	-
Mar-23 HomeReady*	-	-	-	-	-	0.97	-	-	-
Apr-23 Major	0.98	0.96	0.97	0.96	0.96	0.94	0.93	0.90	0.79
Apr-23 175k	-	-	0.95	0.93	0.95	0.95	0.94	0.92	0.75
Apr-23 High SDS*	-	-	-	-	-	-	0.96	-	-
Apr-23 HomeReady*	-	-	-	-	0.98	0.97	-	-	-
May-23 Major	0.93	0.97	0.97	0.97	0.96	0.95	0.93	0.91	0.82
May-23 175k	-	-	0.93	0.97	0.96	0.96	0.95	0.93	0.93
May-23 High SDS*	-	-	-	-	0.99	0.97	-	-	-
May-23 HomeReady*	-	-	-	-	0.98	0.99	0.98	-	-
Jun-23 Major	0.99	0.96	0.97	0.97	0.97	0.95	0.94	0.93	0.85
Jun-23 175k	-	0.99	0.93	0.96	0.97	0.96	0.96	0.95	0.94
Jun-23 High SDS*	-	-	-	-	0.98	0.98	0.96	-	-
Jun-23 HomeReady*	-	-	-	0.98	0.99	0.98	0.97	0.99	-

* FNMA Conduit Auctions only





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