

DSCR Guidance Job Aid - Table of Contents

	Lender Underwritten DSCR per Guide Requirements: Guidance and Examples
Page 2 -4	Definitions and detailed explanation of calculation methodologies
Page 4 – 7	Scenarios and calculation examples
	Actual DSCR and DSCR at Maximum Payment
	Fields Retired/Disabled for Mortgage Loan deliveries on or after October 2022
Page 8	Definitions and detailed explanation of calculation methodologies
Page 8 – 13	Scenarios and calculation examples
	Target State DSCR Fields
Page 14	UW NCF DSCR, UW NCF DSCR IO, UW NCF DSCR at Cap and UW NCF DSCR All In (new fields) - Definitions
Page 15 – 17	Scenarios and calculation examples for Fixed Rate Mortgage Loans
Page 18 – 21	Scenarios and calculation examples for ARM Loans
Page 23 – 28	Scenarios and calculation examples for SARM Loans
Page 29	Review of Credit Facilities - UW NCF DSCR at Facility Level and UW NCF DSCR IO at Facility Level (new fields) - Definitions
Page 30	Deal 1: Scenario and calculation example for UW NCF DSCR at Facility Level
Page 31	Deal 1: Scenario and calculation example for UW NCF DSCR IO at Facility Level
Page 32	Deal 2: Scenario and calculation example for UW NCF DSCR at Facility Level
Page 33	UW NCF DSCR, UW NCF DSCR IO, UW NCF DSCR at Cap and UW NCF DSCR All In, UW NCF DSCR at Facility Level and UW NCF DSCR IO at Facility Level - Summary and Conclusions



Job Aid: Lender Underwritten DSCR per Guide Requirements: Guidance and Examples

Information Effective: October 24, 2022

This purpose of this document is strictly for guidance and examples only. This document is not a replacement for the Multifamily Selling and Servicing Guide (the "Guide"). This guidance and examples are effective as of October 6, 2017 and are subject to change. Refer to the most recent Guide and Underwriting Standards (Form 4660) for complete details on the Lender Underwritten DSCR per Guide Requirements field.

Lender Underwritten DSCR per Guide Requirements

The ratio of underwritten Net Cash Flow ("NCF") and the underwritten annualized debt service (see below for more guidance on how to calculate this debt service).

Underwritten Net Cash Flow (Underwritten NCF) = Underwritten Effective Gross Income less underwritten Property operating expenses including Capital Expenditures (Replacement Reserves) as required in the Multifamily Selling and Servicing Guide (the "Guide").

However, for Cooperative Properties, Lender must calculate: (i) Cooperative Market Rental Basis ("Underwritten NCF"), and (ii) Actual Cooperative Property Basis ("Actual Cooperative Property NCF"), as follows:

- <u>Cooperative Market Rental Basis Net Cash Flow ("Underwritten NCF"</u>): Underwritten NCF calculated as described above, however, based on a Market Rental Basis as reflected in the Appraisal. The Cooperative Market Rental Basis NCF must include minimum economic vacancy and Capital Expenditures (Replacement Reserves) per unit, if any, as set forth in the Underwritten NCF calculation detailed in Part IIIA, Chapter 3 or Part IIIB, as required in the Guide; and
- <u>Actual Cooperative Property Basis Net Cash Flow ("Actual Cooperative Property NCF")</u>: calculated on actual Cooperative Property operations as required in the Guide.

Underwritten Annualized Debt Service = the following calculations for full and partial interest only Mortgage Loans:

• <u>For Fixed Rate Mortgage Loans</u>:

The annual debt service must be based on a level debt service payment with an Amortization term pursuant to the Multifamily Underwriting Standards, or other Amortization term approved by Fannie Mae, and the higher of:

- the Gross Note Rate; or
- the required Underwriting Interest Rate Floor (as identified in the "Underwriting Standards (Form 4660)".



- For Adjustable Rate Mortgage Loans (ARM Loans)¹:
 - Structured ARM Loans ("SARM Loans"): Based on the underwritten annualized monthly payment calculation using the overall Variable Underwriting Rate (as defined in Part IIIC Chapter 6 Section 605) of the "Guide").
 - ARM 5-5 and ARM 7-6 Loans (i.e. "Embedded Cap ARM Loans"): Based on the annualized monthly payment calculated using the Maximum Lifetime Interest Rate (as defined in Part IIIC Chapter 5 of the "Guide").
 - <u>For Cooperative Property Mortgage Loans</u>: the underwritten annual debt service must be calculated as stated above, with the following caveat: <u>Cooperative Market Rental Basis</u>: Debt service must be based on a level debt service payment with an Amortization term pursuant to the Multifamily Underwriting Standards, or other Amortization term approved by Fannie Mae, and the higher of:
 - the Gross Note Rate; or
 - the required Underwriting Interest Rate Floor; and
 - If Fannie Mae pre-approves subordinate debt as provided in the Guide, the annual debt service must also include principal and interest to cover the maximum principal amount of the subordinate debt outstanding.
 - <u>Actual Cooperative Property Basis</u>: Debt service must be based on a level debt service payment at the actual Gross Note Rate with an Amortization term pursuant to the Multifamily Underwriting Standards, or other Amortization term approved by Fannie Mae. If Fannie Mae pre-approves subordinate debt as provided in the Guide, the annual debt service must also include principal and interest to cover the actual loan balance of such subordinate debt outstanding at the time of underwriting. Interest-only payments may only be used for a full term interest-only Mortgage Loan.
- For Supplemental Mortgage Loans:

Based on the combined annual debt service amount of all Pre-Existing Mortgage Loans and the Supplemental Mortgage Loan based on the following:

	Pre-Existing Mortgage	e Loans
Interest Rate Type	Amortization Type	Debt Service Amount
Fixed Rate	Fully-amortizing Partial-term Interest-Only Full Term Interest-Only	Amortizing debt service amount based on the Gross Note Rate Interest-Only debt service amount based on the Gross Note Rate
Adjustable Rate ¹	Fully-amortizing Partial-term Interest-Only	Amortizing debt service amount based on the origination loan amount, amortization term, and variable underwriting rate

¹ In addition to meeting the Lender Underwritten DSCR per Guide requirements described above, in no event shall the Mortgage Loan amount exceed the amount calculated in Part IIIA of the Guide for a fixed rate Mortgage Loan with equivalent term and Tier and using the Lender delegated pricing published in the DUS Pricing Memo or, if applicable, the Fannie Mae approved fixed rate pricing for the Mortgage Loan in effect at the time of Rate Lock

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



Pre-Existing Mortgage Loans						
	Full Term Interest-Only	Interest-Only debt service amount based on the origination loan amount, amortization term, and variable underwriting rate				

	Supplemental Mortgage	e Loan**
Interest Rate Type	Amortization Type	Underwritten Annualized Debt Service Amount
Fixed Rate / Adjustable Rate ²	All Amortization Types	 Amortizing debt service amount based on the greater of the Gross Note Rate or: for fixed rate Supplemental Mortgage Loans, the applicable Underwriting Interest Rate Floor in the applicable Multifamily Underwriting Standards; or for adjustable rate Supplemental Mortgage Loans, the variable underwriting rate determined in accordance with Part IIIC

**Please note, Supplemental Mortgage Loans must comply with New Loan Test in the Guide, which may further restrict proceeds. Please refer to Part IIIC – Chapter 2 for complete details on Supplemental Mortgage Loans and sizing requirements.

Sample Calculations

Example 1: \$10,000,000 Fixed Rate Mortgage Loan (Fully Amortizing)

Conventional Mortgage Loan

Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 0 months Amortization: 360 months Underwritten NCF: \$1,000,000 Underwritten Debt Service (Amortizing @ 5.00% UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized)

Lender Underwritten DSCR per Guide Requirements: 1.55 = \$1,000,000 / \$644,186 (@ UW Interest Rate Floor)

Cooperative Property Mortgage Loan

Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 0 months Amortization: 360 months

² In addition to meeting the Lender Underwritten DSCR per Guide requirements described above, in no event shall the Mortgage Loan amount exceed the amount calculated in Part IIIA of the Guide for a fixed rate Mortgage Loan with equivalent term and Tier and using the Lender delegated pricing published in the DUS Pricing Memo or, if applicable, the Fannie Mae approved fixed rate pricing for the Mortgage Loan in effect at the time of Rate Lock

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



Underwritten NCF (Market Rental Basis): \$1,000,000 Actual Cooperative Property NCF: \$573,000 Underwritten Debt Service (Amortizing @ 5.00% UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized) Debt Service (Amortizing @ 4.00%): \$47,742 (monthly), \$572,898 (annualized)

Lender Underwritten DSCR per Guide Requirements (Market Rental Basis): 1.55 = \$1,000,000 (Market Rental Basis NCF) / \$644,186 (@ UW Interest Rate Floor)

Actual Cooperative Property DSCR: 1.0 = \$573,000 (Actual Cooperative Property NCF) / \$572,898

Example 2: \$10,000,000 Fixed Rate Mortgage Loan (Partial Interest Only)

Conventional Mortgage Loan

Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 60 months Amortization: 360 months Underwritten NCF: \$1,000,000 Underwritten Debt Service (Amortizing @ 5.00% *UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized)

Lender Underwritten DSCR per Guide Requirements: 1.55 = \$1,000,000 / \$644,186 (@UW Interest Rate Floor)

Cooperative Property Mortgage Loan

Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 60 months Amortization: 360 months Underwritten NCF (Market Rental Basis): \$1,000,000 Actual Cooperative Property NCF: \$573,000 Underwritten Debt Service (Amortizing @ 5.00% UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized) Debt Service (Amortizing @ 4.00%): \$47,742 (monthly), \$572,898 (annualized)

Lender Underwritten DSCR per Guide Requirements (Market Rental Basis): 1.55 = \$1,000,000 (Market Rental Basis NCF) / \$644,186 (@UW Interest Rate Floor)

Actual Cooperative Property DSCR: 1.00 = \$573,000 (Actual Cooperative Property NCF) / \$572,898

Example 3: \$10,000,000 Fixed Rate Mortgage Loan (Full Interest Only)

Conventional Mortgage Loan Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 120 months Amortization: 360 months Underwritten NCF: \$1,000,000 Underwritten Debt Service (Amortizing @ 5.00% UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized)

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



Lender Underwritten DSCR per Guide Requirements: 1.55 = \$1,000,000 / \$644,186 (@UW Interest Rate Floor)

Cooperative Property Mortgage Loan

Gross Note Rate: 4.00 Underwriting Interest Rate Floor = 5.00 Loan Term: 120 months Interest Only Term: 120 months Amortization: 360 months Underwritten NCF (Market Rental Basis): \$1,000,000 Actual Cooperative Property NCF: \$573,000 Underwritten Debt Service (Amortizing @ 5.00% UW Interest Rate Floor): \$53,682 (monthly), \$644,186 (annualized) Debt Service (Interest Only @ 4.00%): \$33,333 (monthly), \$400,000 (annualized)

Lender Underwritten DSCR per Guide Requirements (Market Rental Basis): 1.55 = \$1,000,000 (Market Rental Basis NCF) / \$644,186 (@UW Interest Rate Floor)

Actual Cooperative Property DSCR: 1.43 = \$573,000 (Actual Cooperative Property NCF) / \$400,000

Example 4: \$10,000,000 ARM Loans3:

Please note, ARM Loan examples do not reflect Fixed Rate Test which further may impact proceeds and DSCR calculation, refer to Guide and Underwriting Standards (Form 4660) for further details.

ARM 7-6 Loan: ARM Loan with embedded interest rate caps

Initial Interest Rate: 2.00 (Guaranty Fee + Servicing Fee + 30 Day Average SOFR index) Lifetime Max Interest Rate: 8.00 (Initial Interest Rate + 6% embedded interest rate cap) Loan Term: 84 months Interest Only Term: 36 months Amortization: 360 Underwriting NCF: \$1,000,000 Debt Service using Lifetime Max Interest Rate: \$73,376 (monthly), \$880,517 (annualized)

Lender Underwritten DSCR per Guide Requirements:

1.14 = \$1,000,000 / \$880,517

STRUCTURED ARM Loan

Initial Interest Rate: 2.77 (ex. Margin (Guaranty Fee, Servicing Fee plus Investor spread) + 30 Day Average SOFR index) Variable Underwriting Rate (as defined in the Guide): 5.77 (Initial Interest Rate + Underwriting Spread (i.e., 3%) + Cap Cost Factor) Term: 120 months Interest Only: 36 months Amortization: 360 months Underwriting NCF: \$1,000,000 Underwritten Debt Service using Variable Underwriting Rate: \$58,484 (monthly), \$701,813 (annualized)

Lender Underwritten DSCR per Guide Requirements:

1.42 = \$1,000,000 / \$701,813

³ In addition to meeting the Lender Underwritten DSCR per Guide requirements described above, in no event shall the Mortgage Loan amount exceed the amount calculated in Part IIIA of the Guide for a fixed rate Mortgage Loan with equivalent term and Tier and using the Lender delegated pricing published in the DUS Pricing Memo or, if applicable, the Fannie Mae approved fixed rate pricing for the Mortgage Loan in effect at the time of Rate Lock

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



<u>Example 5: Hybrid ARM Loan:</u>

A 5-Year Hybrid ARM Loan for \$3,817,000.00 secured by a Property located in a Strong Market or Los Angeles-Long Beach-Anaheim, CA MSA:

Initial Fixed Interest Rate: 4.11 Underwriting Interest Rate Floor = Not Applicable for Hybrid ARM Loans Interest Only Term: 0 months Loan Term: 360 months Amortization: 360 months Underwritten NCF: \$277,000 Underwritten Debt Service (Amortizing @ 4.11%): \$18,466 (monthly), \$221,590 (annualized)

Lender Underwritten DSCR per Guide Requirements: 1.25 = \$277,000 / \$221,590 (@ Actual Interest Rate)

A 7-Year Hybrid ARM Loan for \$1,720,000.00 secured by a Property located in a Nationwide Market:

Initial Fixed Interest Rate: 4.18 Minimum 1.00 DSCR Stress Test: 6.68 (Initial Fixed Interest Rate of 4.18 plus 2.50) Underwriting Interest Rate Floor = Not Applicable for Hybrid ARM Loans Underwritten Value: \$2,150,000.00 Interest Only Term: 0 months Loan Term: 360 months Amortization: 360 months Underwritten NCF: \$142,140 Maximum Loan Amount per LTV at 80%: \$1,720,000.00 Maximum Loan Amount minimum 1.00 DSCR Stress Test @ 6.68: \$1,839,425 Underwritten Debt Service (Amortizing @ 4.18%) at maximum constrained loan proceeds \$1,720,000.00: \$8,391 (monthly), \$100,692 (annualized)

Lender Underwritten DSCR per Guide Requirements: 1.41 = \$142,140 / \$100,692 (@ Actual Interest Rate)

Example 6: Supplemental Mortgage Loan:

Please note, Supplemental Mortgage Loans must comply with New Loan Test in the Guide, which may further restrict proceeds. Please refer to Part IIIC – Chapter 2 for complete details on Supplemental Mortgage Loans and sizing requirements.

Underwriting NCF = \$1,400,000

	Loan Amount and Loan Term	Rate / Amortization / Interest Only	Annualized Debt Service
Pre-Existing	\$10,000,000 Origination UPB; 5	Gross Note Rate = 5.50%; Amortization	\$681,347
Mortgage Loan	years remaining	= 360 months; Interest Only = 0 months	
Supplemental	\$5,000,000; 5 years	Gross Note Rate = 5.00%; UW Interest	\$389,159 (@UW Interest
Mortgage Loan		Rate Floor = 6.75%; Interest Only = 0	Rate Floor)
		months	
		Total Combined Annualized Debt Service	\$1,070,506



Lender Underwritten DSCR per Guide Requirements: 1.31 = \$1,400,000 / \$1,070,506

¹ In addition to meeting the Lender Underwritten DSCR per Guide requirements described above, in no event shall the Mortgage Loan amount exceed the amount calculated in Part IIIA of the Guide for a fixed rate Mortgage Loan with equivalent term and Tier and using the Lender delegated pricing published in the DUS Pricing Memo or, if applicable, the Fannie Mae approved fixed rate pricing for the Mortgage Loan in effect at the time of Rate Lock



Job Aid: DSCR Training Aid for Currently Disclosed DSCR Fields

Fields Retired/Disabled for Mortgage Loan deliveries on or after October 2022

Actual DSCR

Actual DSCR is the ratio of underwritten Net Cash flow ("NCF") and the annualized debt service.

UW NCF = Underwritten Effective Gross Income less underwritten Total Expenses.

Annualized Debt Service = For full and partial interest only Mortgage Loans use Initial Interest Rate multiplied by Actual UPB at Acquisition. For amortizing 30/360 and Actual/360 Mortgage Loans use monthly payment as stated in the Loan Documents multiplied by 12.

Product Variations:

- **<u>Partial and Full Interest Only Mortgage Loans</u>:** this calculation will not include an amortization factor.
- **<u>ARM Loans/Hybrid ARM Loans</u>**: this calculation will be based on the initial interest rate.
- <u>**Cooperative Properties:**</u> Actual cooperative NCF effective gross income less underwritten Total Expenses.
- Supplemental Mortgage Loans and Mortgage Loans with Subordinate Debt or Additional Debt (Combined): The ratio of Underwritten Net Cash Flow (UW NCF) to the annualized combined monthly payments of all Pre-Existing Mortgage Loans. Combined monthly payments = the combined monthly payments for all supplemental, subordinate debt, and first liens (does not include soft debt). If the additional debt is partial IO and is still in its IO period, then the IO payment should be used. If the additional debt is partial IO and is in its amortization period, then the amortizing payment should be used.

DSCR at Maximum Payment:

DSCR at Maximum Payment is the ratio of underwritten Net Cash Flow ("NCF") and the debt service calculated as described below.

UW NCF = Underwritten Effective Gross Income less underwritten Total Expenses.

Partial Interest Only Mortgage Loans

DSCR = Underwritten NCF/ annualized partial interest only amortizing payment.

ARM Loans/Hybrid ARM Loans

DSCR = Underwritten NCF/ annualized monthly payment calculated using, the Lifetime Maximum Interest Rate, if applicable, for ARM Loans with an embedded cap or, the Variable Underwriting Rate for other ARM Loans (e.g., SARM Loans) with an amortization factor (except in the case of a full interest only Mortgage Loan – no amortization factor is used).

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



Product Variations:

- <u>Interest Only Mortgage Loans</u>: For Fixed and ARM Loans, Partial Interest Only Mortgage Loans, DSCR at Maximum Payment will be different than Actual DSCR. For Fixed Rate, Full Interest Only Mortgage Loans DSCR at Maximum Payment will be the same as Actual DSCR but will be different for ARM Loans.
- <u>Amortizing Mortgage Loans</u>: For Fixed Rate, Amortizing Mortgage Loans, DSCR at Maximum Payment will be the same as Actual DSCR unless the Mortgage Loan is a Cooperative Property.
- <u>Cooperative Properties:</u>
 - This calculation will use the UW NCF = Rental equivalent NCF Effective Gross Income less underwritten Total Expenses.
 - The DSCR at Maximum Payment field will not contain the same figure as Actual DSCR field due to different NCFs being used in the calculations.
- Supplemental Mortgage Loans and Mortgage Loans with Subordinate Debt or Additional Debt (Combined): The ratio of Underwritten Net Cash (UW NCF) to the annualized combined monthly payments of all Pre-Existing Mortgage Loans. Combined monthly payments = the combined monthly payments for all supplemental, subordinate debt, and first liens (does not include soft debt). If the additional debt is partial IO and is in or out of its IO period the amortizing payment should be used.

Sample Calculations

Example 1 Amortizing Mortgage Loan

Loan \$10,000,000

Interest Rate: 5.00 Fixed Rate Term: 120 Amortization: 360 Underwritten NCF: \$1,000,000 Debt Service: \$53,682, annualized \$644,186

Actual DSCR: 1.55 = \$1,000,000 / \$644,186

DSCR at Maximum Payment: 1.55

Cooperative Property:

Loan \$10,000,000 Interest Rate: 5.00 Fixed Rate Term: 120 Amortization: 360 Actual Cooperative NCF: \$750,000 Rental Equivalent NCF: \$1,000,000 Debt Service: \$53,682, annualized \$644,186

Actual DSCR:

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



1.16 = \$750,000 (Actual Cooperative NCF) / \$644,186

DSCR at Maximum Payment:

1.55 = \$1,000,000 (Rental Equivalent NCF) / \$644,186

Interest Only Mortgage Loan

Loan \$10,000,000 Interest Rate: 5.00 Fixed Rate Term: 120 Amortization: 0 Underwritten NCF: \$1,000,000 Debt Service: .0500 * \$10,000,000 = \$500,000

Actual DSCR: 2.00 = \$1,000,000 / \$500,000

DSCR at Maximum Payment: 2.00

Partial Interest Only Mortgage Loans:

Loan: \$10,000,000 Interest Rate: 5.00 Fixed Rate Term: 120 Actual 360 Partial IO: 12 months Original Amortization: 0 Amortization: 360 Underwritten NCF: \$1,000,000 Debt Service: .0500 * \$10,000,000 = \$500,000 Amortizing Debt Service: \$53,682, annualized \$644,186

Actual DSCR:

2.00 = \$1,000,000 / \$500,000

DSCR at Maximum Payment: 1.55 = \$1,000,000 / \$644,186

<u>Example 2 - ARM Loans</u>:

Amortizing

ARM 7-6 Loan: ARM Loan with embedded interest rate caps Loan \$10,000,000 Initial Interest Rate: 5.00 (Margin + 30 Day Average SOFR index) Amortization: 360 Lifetime Max Interest Rate/Ceiling: 8.00 Underwriting NCF: \$1,000,000 Debt Service using initial interest rate: \$53,682, annualized \$644,186 Debt Service using lifetime max interest rate: \$73,377, annualized \$880,518

Actual DSCR: 1.55 = \$1,000,000 / \$644,186

DSCR at Maximum Payment: 1.14 = \$1,000,000 / \$880,518

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.

Hybrid ARM Loans:

Amortizing Hybrid ARM Loan Loan \$3,817,000.00 Initial Fixed Interest Rate: 4.11 Underwriting Interest Rate Floor = Not Applicable for Hybrid ARM Loans Lifetime Max Interest Rate (Initial Fixed Interest Rate + 5%): 9.11 Interest Only Term: 0 months Loan Term: 360 months Amortization: 360 months Underwritten NCF: \$277,000 Debt Service using initial interest rate: \$18,466, annualized \$221,590 Debt Service using lifetime max interest rate: \$31,015, annualized \$372,180

Actual DSCR: 1.25 = \$277,000 / \$221,590

DSCR at maximum Payment: 0.74 = \$277,000 / \$372,180 (@ Maximum Lifetime Interest Rate)



Example 3 – Structured ARM Loans:

Loan: \$12,500,000

Initial Interest Rate: 2.770 (ex. Margin (G Fee, S Fee and Investor spread) + 30 Day Average SOFR index) Variable Underwriting Rate (As defined in the Guide): 5.77 (Initial Interest Rate + Underwriting Spread + Cap Cost) Applicable Fixed Rate for same term mortgage: 4.95 Term: 120 months Amortization: 360 months, using a straight line over loan term based on Applicable Fixed Rate Fixed Principal Payment: \$18,655 Lifetime Max Interest Rate/Ceiling: None Underwriting NCF: \$1,000,000

Debt Service using initial interest rate: Interest (\$12,500,000*.02770/12=\$28,854) plus Fixed Principal (\$18,655) equals \$47,510, annualized \$570,118

Debt Service using variable underwriting rate: Interest (12,500,000*.0577/12=\$60,104) plus Fixed Principal (\$18,655) equals \$78,760, annualized \$945,118

Actual DSCR: 1.75 = \$1,000,000 / \$570,118

DSCR at Maximum Payment: 1.06 * = \$1,000,000 / \$945,118

• It is possible for the DSCR at Maximum Payment to be less than 1.0 due to differences in interest rates used to calculate the principal payment and the interest due.

PARTIAL IO

Loan: \$12,500,000

Initial Interest Rate: 2.770 (ex. Margin (G Fee, S Fee and Investor spread) + 30 Day Average SOFR index) Variable Underwriting Rate (As defined in the Guide): 5.77 (Initial Interest Rate + Underwriting Spread + Cap Cost) Applicable Fixed Rate for same term mortgage: 4.95 Term: 120 months Amortization: 360 months, using a straight line over loan term based on Applicable Fixed Rate Fixed Principal Payment: \$18,655 Lifetime Max Interest Rate/Ceiling: None Underwriting NCF: \$1,000,000

Debt Service using initial interest rate: Interest \$12,500,000*.0277=\$346,250 Debt Service using variable underwriting rate: Interest (\$12,500,000*.0577/12=\$60,104) plus Fixed Principal (\$18,655) equals \$78,760, annualized \$945,118

Actual DSCR: 2.89=\$1,000,000 / \$346,250

DSCR at Maximum Payment: 1.06 * = \$1,000,000 / \$945,118

• It is possible for the DSCR at Maximum Payment to be less than 1.0 due to differences in interest rates used to calculate the principal payment and the interest due.



FULL IO

Loan: \$12,500,000 Initial Interest Rate: 2.770 (ex. Margin (G Fee, S Fee and Investor spread) + 30 Day Average SOFR index) Variable Underwriting Rate (As defined in the Guide): 5.77 (Initial Interest Rate + Underwriting Spread + Cap Cost) Applicable Fixed Rate for same term mortgage: 4.95 Term: 120 months Amortization: 360 months, using a straight line over loan term based on applicable Fixed Rate Fixed Principal Payment: None Lifetime Max Interest Rate/Ceiling: None Underwriting NCF: \$1,000,000

Debt Service using initial interest rate: Interest \$12,500,000*.0277=\$346,250 Debt Service using variable underwriting rate: Interest \$12,500,000*.0577=\$721,250

Actual DSCR: 2.89 = \$1,000,000 / \$346,250

DSCR at Maximum Payment: 1.39 = \$1,000,000 / \$721,250



Job Aid: DSCR Training for Target State DSCR Fields

Review of DUS and Bulk Deliveries Fields

Field	Definition
UW NCF DSCR	The ratio of (i) the annualized underwritten Net Cash Flow (NCF) of a mortgaged property to (ii) the annualized principal and interest payments (for Amortizing and Partial Interest Only include Principal & Interest payments or for Full Interest Only include Interest payments) due on the related mortgage loan and any debt service on pari passu debt, other Fannie Mae mortgage loan debt and subordinate third party debt, if applicable.
UW NCF DSCR IO	For a mortgage loan with interest only, the ratio of (i) the underwritten annualized Net Cash Flow (NCF) of a mortgaged property to (ii) the annualized interest payments due on the related mortgage loan (debt service) and any debt service on pari passu debt, other Fannie Mae mortgage loan debt and subordinate third party debt, if applicable. This field will be null for any loan that is not Interest Only.
UW NCF DSCR at Cap	For an Adjustable Rate Mortgage (ARM) loans, the ratio of (i) the underwritten annualized Net Cash Flow (NCF) of a mortgaged property to (ii) the annualized debt service of the ARM and any debt service on pari passu debt, other Fannie Mae mortgage loan debt and subordinate third party debt, if applicable. The Debt Service Coverage Ratio (DSCR) is calculated using the Loan Lifetime Cap Interest Rate for a capped ARM or the Strike Rate plus Mortgage Margin for a Structured ARM. This field will be null for any ARM loans without a cap or fixed rate loans.
UW NCF DSCR All In (includes Mezzanine/ Preferred Equity debt) *	The ratio of (i) the underwritten annualized Net Cash Flow (NCF) of a mortgaged property to (ii) the annualized principal and interest payments (for Amortizing and Partial Interest Only include Principal & Interest payments or for Full Interest Only include Interest payments) and payments on Mezzanine debt (inclusive of 3rd party Mezzanine debt) and any debt service on pari passu debt, other Fannie Mae mortgage loan debt, and subordinate third party debt, if applicable. This field will be null for any loan that does not have Mezzanine debt.

* Total Debt Service used in the calculation of UW NCF DSCR All In includes the annualized Mezzanine Payment. Since these scenarios are generally rare, they are not shown in the following scenario examples.

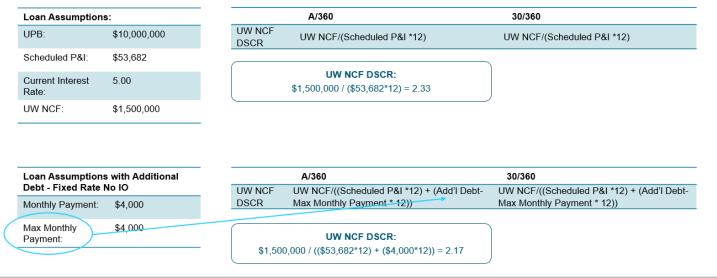
DSCR will be shown on a combined basis if subordinate/additional debt exists



Fixed Rate Mortgage Loan Scenarios

Scenario Review: Fixed Rate Amortizing Mortgage Loans

The calculation method is the same as Actual DSCR. Leverage Scheduled P&I x 12 and the systems will validate data entry.



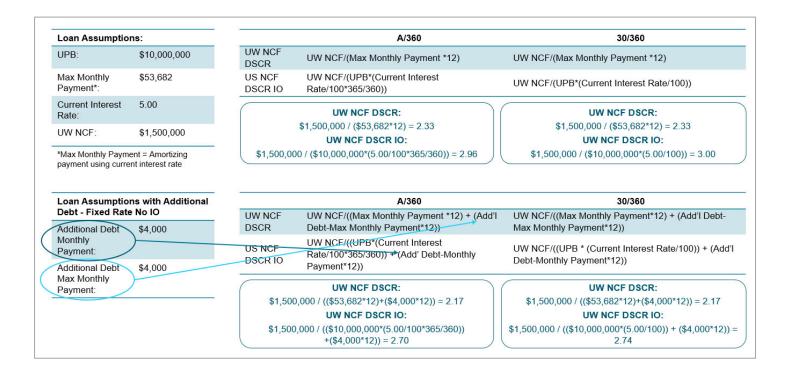


Scenario Review: Fixed Rate Interest Only Mortgage Loans

oan Assumption	is:		A/360	30/360	
UPB:	\$10,000,000	UW NCF DSCR	UW NCF/(UPB*(Current Interest Rate/100*365/360))	UW NCF/(UPB* (Current Interest Rate/100))	
Current Interest Rate:	5.00	UW NCF DSCR IO	UW NCF/(UPB*(Current Interest Rate/100*365/360))	UW NCF/(UPB* (Current Interest Rate/100))	
UW NCF: \$1,500,000			NCF DSCR & UW NCF DSCR IO: / (\$10,000,000*(5.00/100*365/360)) = 2.96	UW NCF DSCR & UW NCF DSCR IO: \$1,500,000 / (\$10,000,000*(5.00/100)) = 3	
)		
			A/360	30/360	
Debt - Fixed Rate		UW NCF DSCR	UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Max	30/360 UW NCF/((UPB* (Current Interest Rate/100))+(Add Debt-Max Monthly Payment*12))	
Debt - Fixed Rate Additional Debt	\$4,000		UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Max Monthly Payment*12))	UW NCF/((UPB* (Current Interest Rate/100))+(Add Debt-Max Monthly Payment*12))	
•	\$4,000	DSCR	UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Max	UW NCF/((UPB* (Current Interest Rate/100))+(Add	
Debt - Fixed Rate Additional Debt Monthly Payment: Additional Debt	\$4,000	DSCR UW NCF DSCR IO	UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Max Monthly Payment*12)) UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Monthly Payment*12))	UW NCF/((UPB* (Current Interest Rate/100))+(Add Debt-Max Monthly Payment*12)) UW NCF/((UPB* (Current Interest Rate/100))+(Add Debt-Monthly Payment*12))	
Debt - Fixed Rate Additional Debt Monthly Payment: Additional Debt Max Monthly	\$4,000	DSCR UW NCF DSCR IO	UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Max Monthly Payment*12)) UW NCF/((UPB*(Current Interest Rate/100*365/360))+(Add'I Debt-Monthly	UW NCF/((UPB* (Current Interest Rate/100))+(Add Debt-Max Monthly Payment*12)) UW NCF/((UPB* (Current Interest Rate/100))+(Add	



Scenario Review: Fixed Rate Partial Interest Only Mortgage Loans





ARM Loan Scenarios

Scenario Review: Amortizing ARM Loans

Loan Assumptions:			A/360	30/360
JPB:	\$10,000,000	UW NCF DSCR	UW NCF/(Scheduled P&I* 12)	UW NCF/(Scheduled P&I* 12)
Scheduled P&I Payment:	\$53,682	UW NCF DSCRIO	N/A	N/A
Current Interest Rate:	5.00	UW NCF DSCR at Cap Only applicable for ARM loans with Lifetime Max Interest Rate or Hedge Type is Cap	UW NCF/(Calculated Amortizing Payment using Lifetime Max Interest Rate * 12)	UW NCF/(Calculated Amortizing Payment using Lifetime Max Interest Rate * 12)
Lifetime Max Interest Rate:	8.00) & 30/360 :00,000/ (\$53,682 * 12) = 2.33
UWINCF:	\$1,500,000		UW NCF DSCR at Cap:	\$1,500,000/ (\$73,376*12) = 1.70
Loan Assumptions Additional Debt - C Partial 10 Still in its	apped ARM			
Additional Debt - C	apped ARM		1000	201000
Additional Debt - C Partial IO Still in its period: Additional Debt Monthly	apped ARM interest only	UW NCF DSCR	A/360 UW NCF /((Scheduled P&I * 12)+(Current	
Additional Debt - C Partial IO Still in its period:	apped ARM interest only	UW NCF DSCR UW NCF DSCR IO		
Additional Debt - C. Partial ID Still in its period: Additional Debt Monthly Payment: Additional Debt Max	apped ARM interest only \$3,500 \$5,000		UW NCF /((Scheduled P&I * 12)+(Current Amortizing Payment for Prior Elen * 12))	UW NCF /((Scheduled P&I* 12)+(Current Amortizing Payment for Prior Lien * 12))



Scenario Review: Full Interest Only ARM Loans

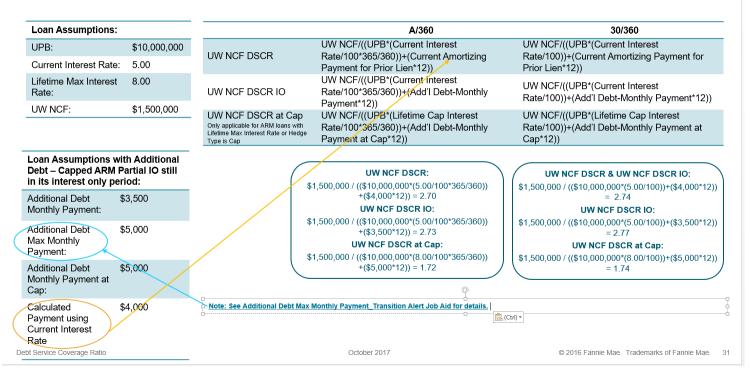
Loan Assumptions:			A/360	30/360
UPB:	\$10,000,000	UW NCF DSCR	UW NCF/(UPB*(Current Interest Rate/100*365/360))	UW NCF/(UPB * (Current Interest Rate/100))
Current Interest Rate: _ifetime Max Interest	5.00 8.00	UW NCF DSCR IO	UW NCF/(UPB*(Current Interest Rate/100*365/360))	UW NCF/(UPB * (Current Interest Rate/100))
Rate: UW NCF:	\$1,500,000	UW NCF DSCR at Cap Only applicable for ARM loans with Lifetime Max Interest Rate or Hedge	UW NCF/(UPB*(Lifetime Cap Interest Rate/100*365/360))	UW NCF/(UPB*(Lifetime Cap Interest Rate/100))
			UW NCF DSCR & UW NCF DSCR IO: 00,000 / (\$10,000,000*(5.00/100*365/360))= 2.96 UW NCF DSCR at Cap: 00,000 / (\$10,000,000*(8.00/100*365/360)) = 1.85	UW NCF DSCR & UW NCF DSCR IO: \$1,500,000 / (\$10,000,000*(5.00/100))= 3.00 UW NCF DSCR at Cap: \$1,500,000 / (\$10,000,000*(8.00/100))= 1.88

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



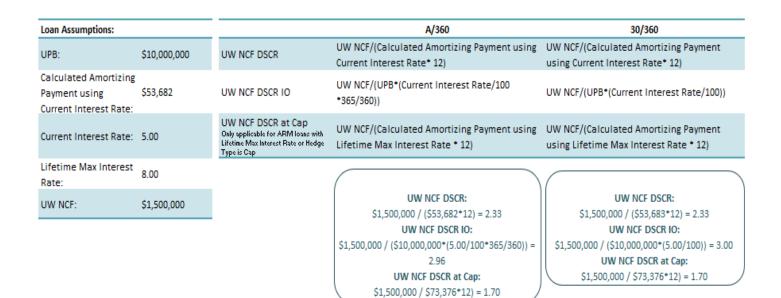
Scenario Review: Full Interest Only ARM Loans cont.

Scenario Review: ARM Full Interest Only Loans cont.



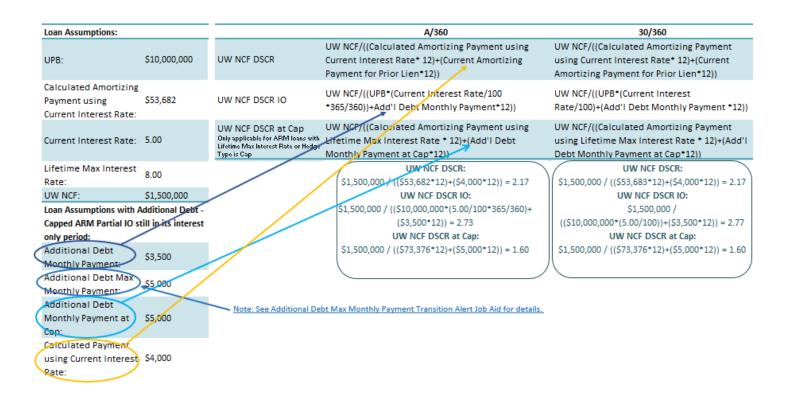


Scenario Review: Partial Interest Only ARM Loans





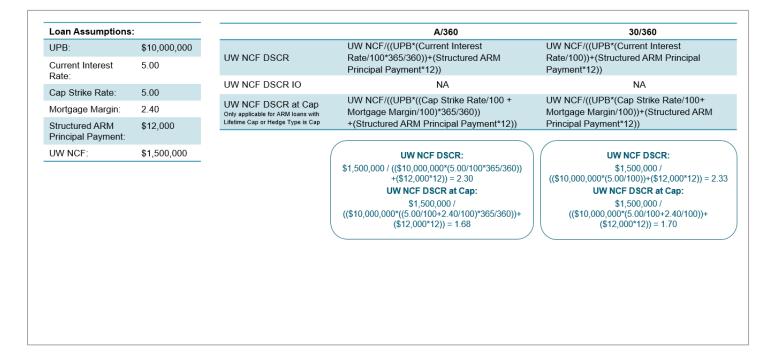
Scenario Review: Partial Interest Only ARM Loans cont.





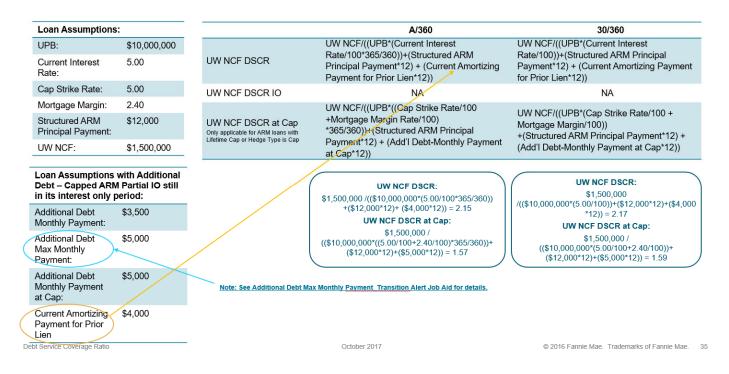
SARM Loan Scenarios

Scenario Review: Amortizing SARM Loans



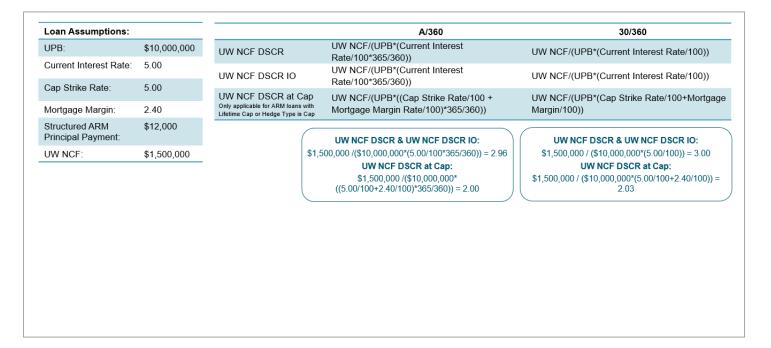


Scenario Review: Amortizing SARM Loans cont.



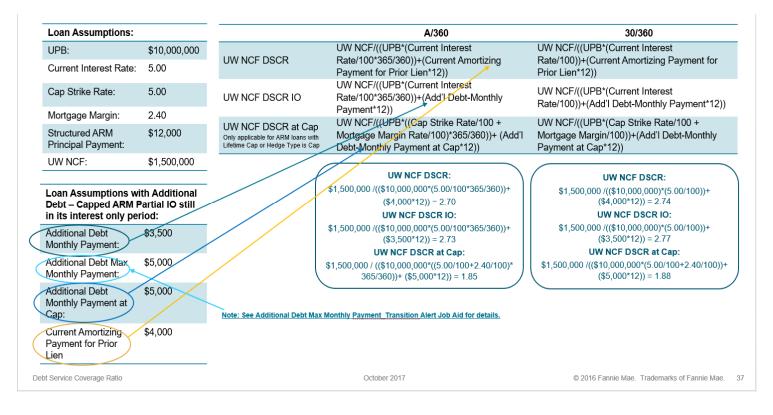


Scenario Review: Full Interest Only SARM Loans



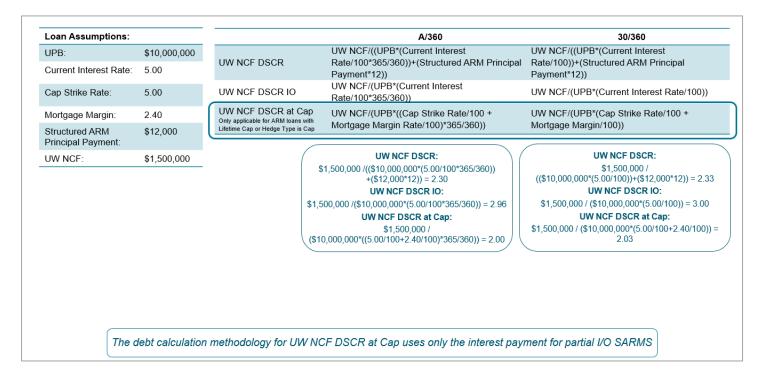


Scenario Review: Full Interest Only SARM Loans cont.



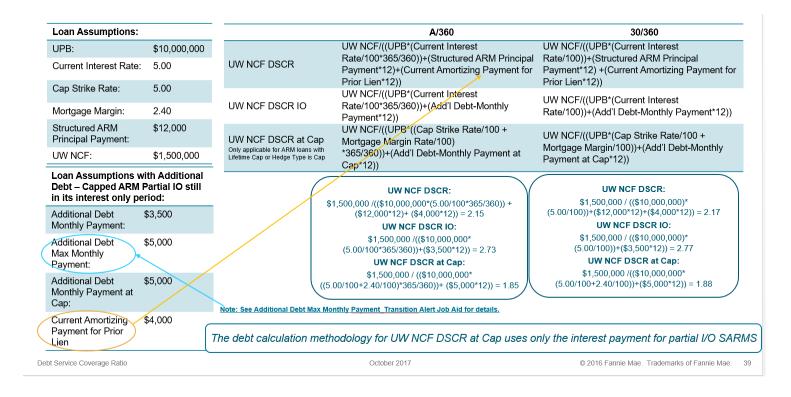


Scenario Review: Partial Interest Only SARM Loans





Scenario Review: Partial Interest Only SARM Loans cont.





Credit Facilities

Review of Credit Facilities DSCR Fields

Field	Definition
JW NCF DSCR at Facility Level	For Credit Facilities, the ratio of a) the underwritten net cash flow from all properties in the facility at the time of a new issuance of a loan in the facility to b) the debt service amount, specifically the total principal and interest, for all active loans that are in the facility. Full interest-only loans will reflect only interest, and partial interest-only mortgage loans will reflect both principal and interest.
JW NCF DSCR IO at Facility Level	For Credit Facilities with at least one active partial interest-only loan still in its interest-only period, the ratio of a) the underwritten net cash flow from all properties in the facility at the time of a new issuance of a loan in the facility to b) the debt service amount, specifically the total principal and interest, for all active loans that are in the facility. Both full interest-only and partial interest-only mortgage loans will reflect only interest. If all partial interest-only loans are no longer in the interest only period, the field is null.

^{© 2022} Fannie Mae. Trademarks of Fannie Mae.



UW NCF DSCR at Facility Level – Example Deal 1

_oans	BED	Fixed/ Variable	Interest Only	Still in Interest Only Period	UPB	Original Interest Rate	Interest Accrual	Structured ARM Principal Payment	Current Annualized Payment used for existing loans Target State Debt Calculation used for new loans	Debt	UW NCF DSCR at Facility Level
A	2012	SARM	Partial	Yes	\$ 10,000,000	3.14	A360	\$60,000	Annualized Amortizing Payment	\$ 1,038,361	
В	2012	SARM	Partial	Yes	\$152,362,500	2.41	A360	\$100,000	Annualized Amortizing Payment	\$ 4,922,935	
С	2016	Fixed	No		\$151,367,593	4.30	A360		(Amortizing Payment * 12)	\$ 8,988,900	_
			(Existi Collate	ICF for Active ing and New) eral as of Most ent Issuance	(\$14 950 196	will be en	tered in the new	/ field	\$14,950,196	
Proper Proper		Existing Existing		0,100,000	-	"Total Annua	P&I Payn	nents for Loans ing payment for	in the UW NCF DSC	R at Facility L \$14,950,196 =	
Proper	-	New		7,832,966							
Total I	NCF		\$4	2,832,966	5						



UW NCF DSCR IO at Facility Level – Example Deal 1

Loans	BED	Fixed/ Variable	Interest Only	Still in Interest Only Period	UPB	Original Interest Rate	Interest Accrual	Current Annualized Payment used for existing loans Target State Debt Calculation used for new loans	Debt	UW NCF DSCR at Facility Level
A	2012	SARM	Partial	Yes	\$ 10,000,000	3.14	A360	Annualized Interest Payment	\$ 318,361	
В	2012	SARM	Partial	Yes	\$ 152,362,500	2.41	A360	Annualized Interest Payment	\$ 3,722,935	
С	2013	Fixed	No		\$ 151,367,593	4.30	A360	(Amortizing Payment * 12)	\$ 8,988,900 \$13,030,196	3.29
					"Total A	0,196 will be er nnual P&I Payı icludes interest IO loans, if	ments for L only paym	oans in the \$42,832,966	\$13,030,196 =	3.29



UW NCF DSCR at Facility Level – Example Deal 2

		Total NCF for Active (Existing and New) Collateral as of Most Current Issuance	Loans	BED	Fixed/ Variable	Interest Only	UPB	Original Interest Rate	Interest Accrual	Current Annualized Payment used for existing loans Target State Debt Calculation used for new loans	Debt	UW NCF DSCR at Facility Level
Property 1	Existing	\$4,591,096	А	2015	Fixed	Full IO	\$ 75,000,000	3.5	A360	Annualized Interest Payment	\$ 2,661,458	
Property 2	Existing	\$3,207,985	В	2015	Fixed	Full IO	\$ 75,000,000	3.72	A360	Annualized Interest Payment	\$ 2,828,750	
Property 3 Property 4	Existing New	\$5,309,791 \$2,960,233	С	2015	Fixed	Full IO	\$125,000,000	3.93	A360	Annualized Interest Payment	\$ 4,980,729	
Property 5	New	\$4,907,562	D	2016	Variable - SARM	Full IO	\$ 25,000,000	1.48	A360	(UPB*(Original Int. Rate/100*365/360))	\$ 375,139	\frown
Property 6	New	\$4,933,461								(\$10,846,076	2.39
Total NCF	(\$25,910,118										
						\$10,846,076 will be entered in the new field "Total Annual P&I Payments for Loans in the Facility (includes amortizing payment for Partia IO loans)"			\$25,910,118/\$10,846,076 - 2,39			



Debt Service Coverage Ratio Summary and Conclusion

Salient takeaways to remember

- For amortizing fixed rate loans, the calculation of Actual DSCR is the same as UW NCF DSCR
- · For amortizing ARM loans with lifetime caps, the calculation of DSCR at Maximum Payment is the same as UW NCF DSCR at Cap
- For Full and Partial IO Loans the Actual 360 DSCR calculations are slightly different
- When subordinate/additional debt exists and that debt is a Fixed Rate or an uncapped ARM loan <u>UW NCF DSCR at Cap</u> field should not be populated. However, when the subordinate/additional debt is a capped ARM or a SARM, then UW NCF DSCR at Cap field should be populated. <u>It's all or nothing.</u>
- For SARM loans, the calculation of UW NCF DSCR at Cap will use Strike Rate plus Mortgage Margin
- We've added new fields, some items have name changes only, and other fields are going way

Need More Information prior to implementation?

E-mail MF_Lender_Change_Management@fanniemae.com

Have Questions or Need Assistance going forward after implementation?

Contact the Acquisitions Team Representative