

## Debt Service Coverage Ratio (DSCR) Examples

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### Actual Debt Service Coverage Ratio

Actual DSCR is the ratio of Underwritten Net Operating Income (UW NOI) to the annualized debt service.

**UW NOI** = Underwritten Effective Gross Income less Underwritten Total Expenses.

**Annualized Debt Service** = For full and partial interest-only, 30/360, and Actual/360 loans, use the Initial Interest Rate multiplied by Actual Unpaid Principal Balance at Acquisition. For amortizing 30/360 and Actual/360 loans, use the monthly payment as stated in the Note multiplied by 12.

#### Product Variations

- **Partial and Full Interest-Only Loans:** *The calculation will not include an amortization factor.*
- **ARM Loans:** *The calculation will be based on the Initial Interest Rate.*
- **Cooperatives:** *UW NOI = Actual Cooperative NOI Effective Gross Income less Underwritten Total Expenses.*
- **Supplemental Mortgages & Loans with Subordinate Debt (Combined):** *The ratio of UW NOI to the annualized combined monthly payments of all existing loans. Combined monthly payments = the combined current monthly payments for all supplemental, subordinate debt, and first liens (does not include soft debt).*

### Debt Service Coverage Ratio (IO/ARM)

DSCR (IO/ARM) is the ratio of UW NOI to the debt service calculated as described below.

**UW NOI** = Underwritten Effective Gross Income less Underwritten Total Expenses.

**Partial Interest-Only Loans:**  $DSCR = UW\ NOI / \text{annualized partial interest-only amortizing payment.}$

**ARM Loans:**  $DSCR = UW\ NOI / \text{annualized monthly payment calculated using, the maximum lifetime interest rate, if applicable, for ARMS with an embedded cap, or the variable underwriting rate for other ARMS (e.g. Structured ARM) with an amortization factor.}$

#### Product Variations

- **Full Interest-Only Loans:** *DSCR (IO/ARM) will be the same as the Actual DSCR.*
- **Amortizing loans with no Interest-Only Period:** *DSCR (IO/ARM) will be the same as the Actual DSCR.*
- **Cooperatives:** *UW NOI = Rental Equivalent NOI Effective Gross Income less Underwritten Total Expenses.*
- **Supplemental Mortgages & Loans with Subordinate Debt (Combined):** *The ratio of UW NOI to the annualized combined monthly payments of all existing loans. Combined monthly payments = the combined current monthly payments for all supplemental, subordinate debt, and first liens (does not include soft debt).*

## Sample Calculations

Product Type	Actual DSCR	DSCR (IO/ARM)
Fixed Rate Amortizing	1.55	1.55
Fixed Rate Amortizing (Cooperative)	1.16	1.55
Fixed Rate Full Interest-Only	2.00	2.00
Fixed Rate Partial Interest-Only	2.00	1.55
ARM – Embedded Cap	1.55	1.14
Structured ARM	1.75	1.06

Chart shows the results from the examples below.

### Fixed Rate Amortizing Loan

Loan Amount: \$10,000,000

Interest Rate: 5.00

Term: 120

Amortization: 360

UW NOI: \$1,000,000

Debt Service: \$63,682, annualized \$644,186

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

**DSCR (IO/ARM):** 1.55

### Fixed Rate Amortizing Loan (Cooperative)

Loan Amount: \$10,000,000

Interest Rate: 5.00

Term: 120

Amortization: 360

Actual Cooperative NOI: \$750,000

Rental Equivalent NOI: \$1,000,000

Debt Service: \$63,682, annualized \$644,186

**Actual DSCR:**  $1.16 = \$750,000 \text{ (Actual Cooperative NOI)} / \$644,186$

**DSCR (IO/ARM):**  $1.55 = \$1,000,000 \text{ (Rental Equivalent NOI)} / \$644,186$

### Fixed Rate Full Interest-Only Loan

Loan: \$10,000,000

Interest Rate: 5.00

Fixed Rate

Term: 120

Amortization: 0

UW NOI: \$1,000,000

Debt Service:  $.0500 * 10,000,000 = \$500,000$

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

**DSCR (IO/ARM):** 2.00

## Fixed Rate Partial Interest-Only Loan

Loan: \$10,000,000

Interest Rate: 5.00

Term: 120

Actual 360

Partial Interest-Only: 12 months

Original Amortization: 0

Amortization: 360

UW NOI: \$1,000,000

Debt Service:  $.0500 * 10,000,000 = \$500,000$

Amortizing Debt Service: \$63,682, annualized \$644,186

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

**DSCR (IO/ARM):**  $1.55 = \$1,000,000 / \$644,186$

## ARM Loan – Embedded Cap

Loan: \$10,000,000

Initial Interest Rate: 5.00 (Margin + Libor Rate)

Amortization: 360

Lifetime Max Interest Rate/Ceiling: 8.00

UW NOI: \$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 (IO/ARM):**  $1.14 = \$1,000,000 / \$880,518$

## Structured ARM Loan

Loan: \$12,500,000

Initial Interest Rate: 2.770 (Margin + Libor Rate)

Variable Underwriting Rate: 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 the loan term based on the Applicable Fixed Rate

Fixed Principal Payment: \$18,655 (1<sup>st</sup> payment date of Jan 2012)

Lifetime Max Interest Rate/Ceiling: None

Underwritten NOI: \$1,000,000

Debt Service using initial interest rate: Interest ( $12,500,000 * 2.77\% / 12 = \$28,854$ ) plus Fixed Principal (\$18,655) equals \$47,510, annualized \$570,118

Debt Service using variable underwriting rate: Interest ( $12,500,000 * 5.77\% / 12 = \$60,104$ ) plus Fixed Principal (\$18,655) equals \$78,760, annualized \$945,118

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

**DSCR (IO/ARM):**  $1.06 = \$1,000,000 / \$945,118$

- *It is possible for the DSCR (IO/ARM) to be less than 1.0 due to differences in the interest rates used to calculate the principal payment and the interest due.*
- *The fixed principal payment is not included in the calculation for Actual DSCR for Partial Interest-Only loans.*