

# Citigroup Commercial Mortgage Trust 2016-P4 Rating Report (Non-NRSRO Rating)

Tranche Name	EJR Rating*
A1	A(sf)
A2	A(sf)
A3	A(sf)
A4	A(sf)
AAB	A(sf)
AS	BBB-(sf)
B	B+(sf)
C	CCC(sf)
D	D(sf)
E	D(sf)
F	D(sf)
G	D(sf)
H	D(sf)
XA	NR(sf)
XB	NR(sf)
XC	NR(sf)
R	NR(sf)

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Prepared on Dec 31, 2020  
 \*Non-NRSRO Rating

## Rating Summary

TRANCHES	BALANCE (\$M)	OTHER NRSROs*	EJR RATING (NON-NRSRO)**	CE	LOAN-TO-VALUE (LTV) %		
					BASE	OPTIMISTIC	PESSIMISTIC
A1	1.39	AAA	A(sf)	31.00	62.77	52.45	76.04
A2	65.38	AAA	A(sf)	31.00	62.77	52.45	76.04
A3	170.00	AAA	A(sf)	31.00	62.77	52.45	76.04
A4	201.35	AAA	A(sf)	31.00	62.77	52.45	76.04
AAB	43.46	AAA	A(sf)	31.00	62.77	52.45	76.04
AS	48.68	AA-	BBB-(sf)	24.02	69.12	57.76	83.74
B	34.26	AA-	B+(sf)	19.12	73.58	61.48	89.14
C	33.35	A-	CCC(sf)	14.34	77.93	65.12	94.40
D	40.56	BBB-	D(sf)	8.52	83.23	69.54	100.82
E	18.93	BB-	D(sf)	5.81	85.69	71.60	103.81
F	8.11	B-	D(sf)	4.65	86.75	72.48	105.08
G	7.21		D(sf)	3.62	87.68	73.27	106.22
H	25.24		D(sf)	0.00	90.98	76.02	110.21
XA	530.26	AA+	NR(sf)	0.00			
XB	34.26	AA-	NR(sf)	0.00			
XC	73.92	BBB-	NR(sf)	0.00			
R	0.00		NR(sf)	0.00			

\* Rating of other NRSROs translated to EJR's rating scale; we use the median rating, and for only two ratings, the lower rating.

\*\* EJR rates the items as a Non-NRSRO. Ratings are based on Base case assumptions.

## Transaction Summary

The transaction closed on Jul 29 2016 and matures in Jul 2026. The pool's current aggregate principal balance is \$697.9 million compared to \$721.3 million at close.

The largest loan of the pool (10.0%) is secured by Opry Mills located in metropolitan area. Occupancy at the subject was 98%. The major tenants included Bass Pro Shops (11.13%) and Regal Cinemas (8.55%). The second largest loan of the pool (8.5%) is secured by Hyatt Regency Huntington Beach Resort & Spa located in Anaheim-Santa Ana-Irvine, CA metropolitan area. Occupancy at the subject was 78%. The third largest loan of the pool (5.5%) is secured by Esplanade I located in metropolitan area. Occupancy at the subject was 86%. The major tenants included United States Government (12.33%) and Hillshire Brands/Tyson Foods (11.97%).

## Quantitative Analysis

### Key Credit Metrics

CLOSING DATE	Jul 29 2016
WAC / NWAC	4.7464 / 4.7214
WAM / WALA	61 / 54
# Loans / Properties	45 / 64
Wtd Avg Orig / Appraisal LTV	62.89 / 63.98
Wtd Avg UW / Curr NOI Debt Yield	10.52% / 11.19%
Wtd Avg UW / Curr NCF DSCR	1.69 / 1.88
% Occupancy	88.47
% RemTerm <= 6mos	7.95

The weighted average coupon (WAC) and the weighted average age (WALA) were 4.75% and 54 months as of 12/10/2020, respectively. There are a total of 45 loans and 64 properties in the portfolio. The appraisal LTV was approximately 64.0% compared to the Original loan to value (LTV), which was approximately 62.9%. The most recent weighted average Debt Service Coverage Ratio (DSCR) was 1.88x. As of 12/10/2020, 7.95% of loans had a remaining term of less than 6 months. Weighted average occupancy was approximately 88%.

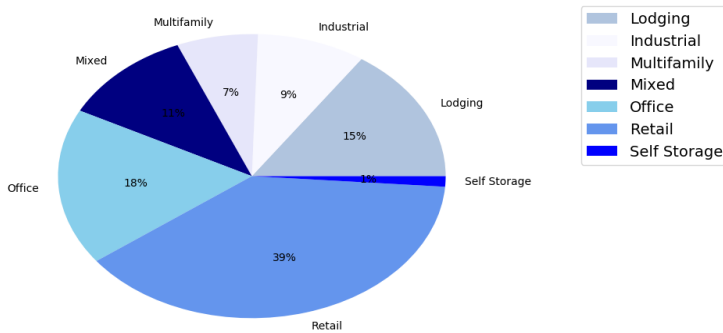
(Data Source: INTExcalc)

## Portfolio Characteristics

### Property Type

Property Type	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
Lodging	5.00	107.72	15.43	5.14	55.54	65.37	54.63	2.54
Industrial	5.00	63.29	9.07	4.33	56.00	65.50	54.50	2.36
Multifamily	4.00	47.25	6.77	5.01	70.65	65.89	54.11	1.62
Mixed	24.00	77.44	11.10	4.95	63.34	43.00	55.69	2.12
Office	6.00	124.43	17.83	4.75	62.26	52.76	53.74	1.57
Retail	18.00	269.49	38.61	4.57	60.91	65.19	53.39	2.01
Self Storage	2.00	8.31	1.19	5.10	59.99	65.24	54.76	2.04

Type Concentration



Among assets in the portfolio, Lodging properties accounted for 15% of total balance, Industrial properties accounted for 9% of total balance, Multifamily properties accounted for 7% of total balance, Mixed properties accounted for 11% of total balance, Office properties accounted for 18% of total balance, Retail properties accounted for 39% of total balance and Self Storage properties accounted for 1% of total balance.

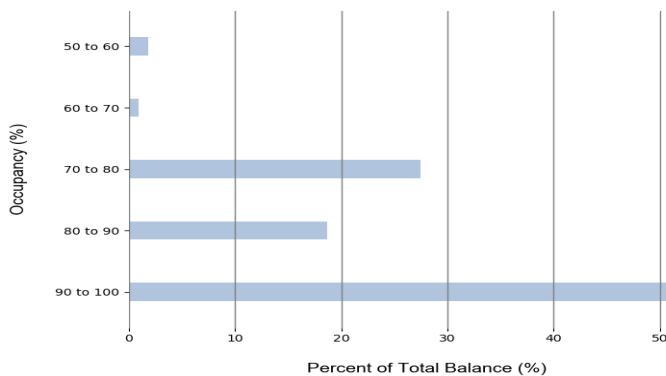
### Defeasance Status

Defeasance Status	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
Defeasance Not Allowable	4	71.86	10.30	4.93	62.97	43.05	53.59	1.55
No Defeasance Occurred	41	626.07	89.70	4.73	60.55	62.63	54.12	2.08

### Occupancy % (by property)

Occupancy (%)	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
50 to 60	1.00	13.10	1.88	5.48	58.43	65.00	55.00	1.90
60 to 70	1.00	6.35	0.91	5.71	68.30	7.00	53.00	1.17
70 to 80	24.00	191.84	27.49	5.01	58.43	48.02	54.62	2.25
80 to 90	11.00	130.51	18.70	4.79	66.49	65.91	54.09	1.53
90 to 100	27.00	356.13	51.03	4.54	59.94	66.26	53.74	2.11

Occupancy Distribution (%)

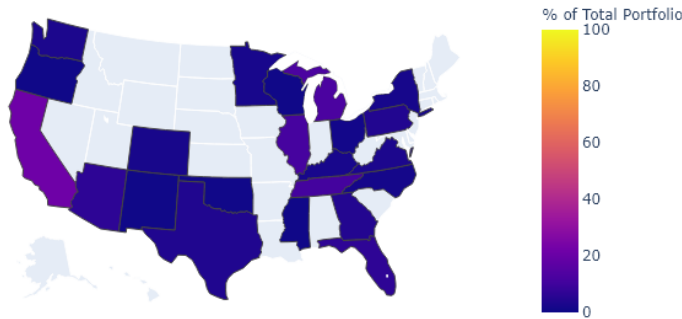


Occupancy of the portfolio ranged from 50% to 100%. More specifically, 1 assets (2% of total balance) had the occupancy rate between 50% and 60%, 1 assets (1% of total balance) with the occupancy rate between 60% and 70%, 24 assets (27% of total balance) with the occupancy rate between 70% and 80%, 11 assets (19% of total balance) with the occupancy rate between 80% and 90% and 27 assets (51% of total balance) with the occupancy rate higher than 90%.

Region (by property)

Region	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
Midwest / Central East	24.00	177.50	25.43	4.82	64.21	61.85	53.88	1.75
Midwest / Central West	6.00	14.87	2.13	4.72	60.31	3.00	57.00	2.64
Northeast / MidAtlantic	2.00	41.84	5.99	5.02	63.84	25.53	54.33	1.21
South / Atlantic	9.00	105.36	15.10	4.89	60.88	65.70	54.30	1.97
South / Central East	3.00	92.65	13.27	4.25	52.85	66.91	53.09	2.65
South / Central West	3.00	30.35	4.35	4.91	60.45	65.70	54.30	1.50
West / Mountain	7.00	62.69	8.98	4.84	64.39	59.41	54.51	1.74
West / Pacific North	4.00	32.32	4.63	4.50	57.16	65.80	54.20	2.34
West / Pacific South	5.00	140.35	20.11	4.78	60.12	65.91	54.09	2.37

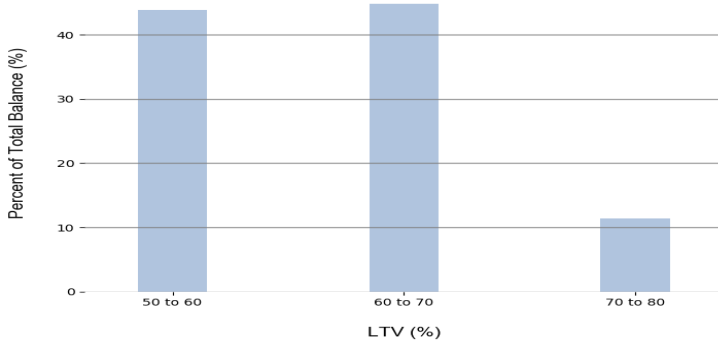
Local Distribution



Among assets in the portfolio, there are 7 properties (21% of total balance) located in California, 11 properties (12% of total balance) in Michigan, 9 properties (11% of total balance) in Illinois, 2 properties (11% of total balance) in Tennessee, 4 properties (6% of total balance) in Florida, 4 properties (6% of total balance) in Arizona and 2 properties (4% of total balance) in Georgia. Other properties are located in the state of Texas, Virginia, Washington, Minnesota, Kentucky, Colorado, New York, North Carolina, Ohio, Oklahoma, Wisconsin, New Mexico, Oregon and Mississippi.

Loan to Value (LTV)

LTV Distribution (%)



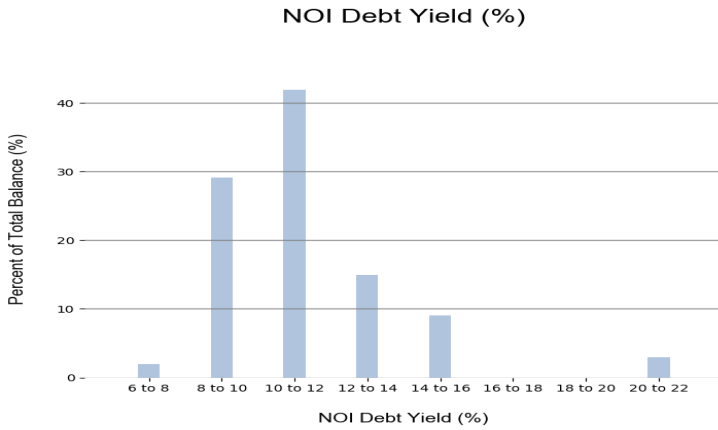
Among all the assets in the portfolio, 14 assets (44% of total balance) had LTVs between 50% and 60%, 26 assets (45% of total balance) with LTVs between 60% and 70% and 5 assets (11% of total balance) with LTVs between 70% and 80%.

**Amortization**

Is Balloon	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
Balloon	45	697.93	100.00	4.75	60.80	60.62	54.07	2.03

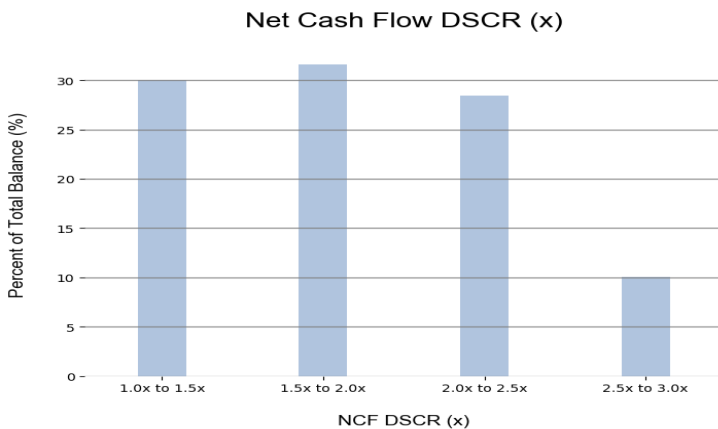
**NOI Debt Yield**

NOI Debt Yield (%)	Assets	Balance (\$M)	Bal %	Gross Coupon %	Curr Amort LTV %	Remaining Term (mos.)	Age (mos.)	DSCR (x)
6 to 8	1.00	13.85	1.98	4.75	60.55	65.00	55.00	1.33
8 to 10	13.00	203.35	29.14	4.81	65.01	56.12	53.75	1.46
10 to 12	18.00	292.69	41.94	4.50	59.35	66.26	53.74	2.24
12 to 14	9.00	104.52	14.98	4.96	60.57	49.31	54.90	2.11
14 to 16	2.00	63.15	9.05	5.07	54.76	65.11	54.89	2.76
16 to 18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18 to 20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 to 22	2.00	20.37	2.92	5.56	59.57	65.51	54.49	2.44



Most recent net operating income debt yield ranged from 6% to 21% with a weighted average NOI debt yield of 11.2%. NOI debt yield ranged from 6% to 21%. There were 1 assets (2% of total balance) with NOI debt yield between 6% and 8%, 13 assets (29% of total balance) with NOI debt yield between 8% and 10%, 18 assets (42% of total balance) with NOI debt yield between 10% and 12%, 9 assets (15% of total balance) with NOI debt yield between 12% and 14%, 2 assets (9% of total balance) with NOI debt yield between 14% and 16%, 2 assets (3% of total balance) with NOI debt yield between 20% and 22%

**NCF DSCR**

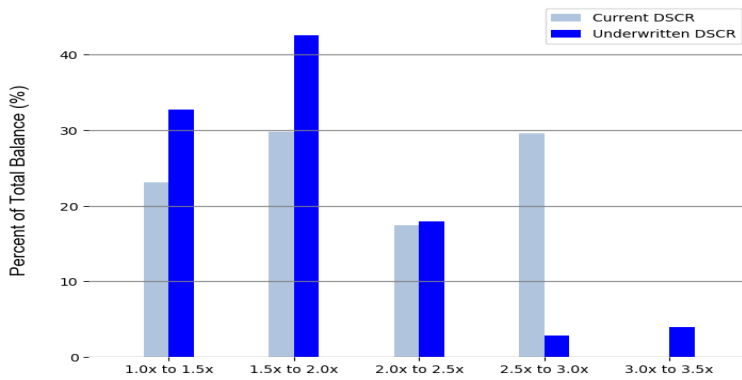


All assets in the portfolio had net cash flow debt service coverage ratios (NCF DSCR) higher than 1x. NCF DSCR ranged from 1.0x to 3.0x. There were 15 assets (29.9% of total balance) with NCF DSCR between 1.0x and 1.5x, 19 assets (31.6% of total balance) with NCF DSCR between 1.5x and 2.0x, 10 assets (28.4% of total balance) with NCF DSCR between 2.0x and 2.5x and 1 assets (10.0% of total balance) with NCF DSCR between 2.5x and 3.0x. The most recent weighted average NCF DSCR was 1.9x.

**DSCR (Current / Underwritten)**

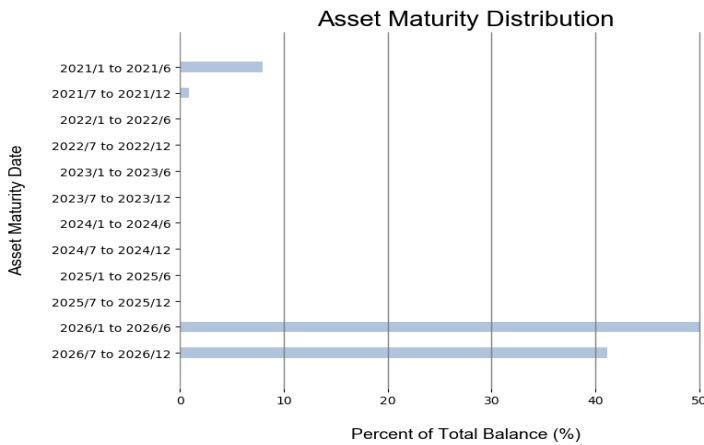
Current DSCR				Underwritten DSCR			
DSCR (x)	Assets	Balance (\$M)	Bal %	DSCR (x)	Assets	Balance (\$M)	Bal %
1.0x to 1.5x	11.00	161.32	23.11	1.0x to 1.5x	18	228.51	32.74
1.5x to 2.0x	18.00	208.10	29.82	1.5x to 2.0x	19	296.65	42.50
2.0x to 2.5x	10.00	121.93	17.47	2.0x to 2.5x	6	125.14	17.93
2.5x to 3.0x	6.00	206.57	29.60	2.5x to 3.0x	1	20.12	2.88
3.0x to 3.5x	0.00	0.00	0.00	3.0x to 3.5x	1	27.50	3.94

**DSCR Distribution (x)**



DSCRs ranged from 1.0x to 3.0x. There are 11 assets (23.1% of total balance) with DSCR between 1.0x and 1.5x, 18 assets (29.8% of total balance) with DSCR between 1.5x and 2.0x, 10 assets (17.5% of total balance) with DSCR between 2.0x and 2.5x and 6 assets (29.6% of total balance) with DSCR between 2.5x and 3.0x. The most recent weighted average DSCR is 2.0x.

**Maturity**



There are 2 assets (8.0% of total balance) that have maturity dates between 2021/1 and 2021/6, 1 assets (0.9% of total balance) that have maturity dates between 2021/7 and 2021/12, 27 assets (50.0% of total balance) that have maturity dates between 2026/1 and 2026/6 and 15 assets (41.1% of total balance) that have maturity dates between 2026/7 and 2026/12.

## Sensitivity Analysis

### Summary

EJR used the capitalization rates ("cap rates") listed below for the different types of the properties and then calculated the value of the properties in the portfolio by considering the most recent NCF and the various cap rates.

### Cap Rate Assumption

Type	OPTIMISTIC CASE	PESSIMISTIC CASE	Base Case
Lodging	7.75	9.00	8.38
Industrial	5.00	5.50	5.25
Multifamily	6.25	7.25	6.75
Mixed	6.00	6.25	6.12
Office	6.75	7.38	7.06
Retail	7.00	8.00	7.50
Self Storage	4.50	5.00	4.75

## EJR's Key Rating Features & Differences Compared With Other NRSROs

Below is a summary of EJ's approach (see our Methodology for rating Commercial Mortgage Backed Securities (CMBS) (Non-NRSRO) for more complete description):

1. Our ratings are derived from Loan to Value estimates (LTVs) and calculated Estimated Losses (ELs). The ELs are then compared to our EL matrices to derive the implied ratings.
2. To reflect the current bearish credit conditions, we have discounted reported pool assets' Net Cashflow (NCF) by 20% for the Base Case.
3. EJ's analysis is conducted using information and cash flow engines supplied by a recognized industry service provider.
4. Subject to economic conditions, EJ may cap its highest rating at "AA" and apply an additional downgrade of up to two notches for each tranche.



## SEC Rule 17g-7(a) Disclosure

Below are the disclosures as required by Paragraph (a) of Rule 17g-7.

### 1. The symbol in the rating scale used to denote the credit rating categories and notches within categories and the identity of the obligor, security, or money market instrument as required by Paragraph (a)(1)(ii)(A) of Rule 17g-7:

There are three notches in each of EJR's rating categories (e.g., A-(sf), A(sf) and A+(sf) for category A(sf)) except for AAA(sf), CC(sf), C(sf) and D(sf).

### 2. The version of the procedure or methodology used to determine the credit rating as required by Paragraph (a)(1)(ii)(B) of Rule 17g-7:

We are using the Methodology for Rating Commercial Mortgage Backed Securities (CMBS) (Non-NRSRO) v1a and General Methodology for Rating Asset Backed and Structured Finance Obligations (Non-NRSRO) v1.

### 3. The main assumptions and principles used in constructing the procedures and methodologies used to determine the credit rating as required by Paragraph (a)(1)(ii)(C) of Rule 17g-7:

The credit rating assigned reflects EJR's judgement regarding the future credit quality of the issue. The major assumptions used to construct the methodologies include:

- 1). Past data reflects the performance and credit worthiness of the pooled assets and is useful for analysis.
- 2). Financial and credit information that EJR gets from the issuer or the third party is reliable and accurate.
- 3). The economy and regulation policies will remain stable in the foreseeable future.

Specific quantitative assumptions used in this credit analysis applied to the collateral assets, which include Loan-to-Value analysis and Cash flow analysis.

Asset diversification is not considered in this report.

### 4. The potential limitations of the credit rating as required by Paragraph (a)(1)(ii)(D) of Rule 17g-7:

EJR's rating pertains solely to EJR's view of current and prospective credit quality. EJR's rating does not address pricing, liquidity or other risks associated with holding investments in the issuer. EJR ratings:

- 1). Are not intended to address the value, price, price stability, liquidity, suitability, or merit of an investment.
- 2). Do not address whether a particular rated security is suitable for a particular investor or suitable for an investor's risk tolerance.
- 3). Do not address whether the expected return of a particular investment is adequate for the inherent risk.
- 4). Do not address whether the market value of the security will remain stable over time.
- 5). Are not exact measures of the probability of default but are instead expressions of the relative credit risk of issuers and debt instruments.
- 6). Are not recommendations to buy, sell or hold any security.

### 5. Information on the uncertainty of the credit rating as required by Paragraph (a)(1)(ii)(E) of Rule 17g-7:

EJR's rating is dependent on numerous factors including the reliability, accuracy, and quality of the data used in determining the credit rating. The data is sourced from issuers' publicly disclosed reports, or from third-party data vendors. For solicited rating reports, EJR may also use the information provided by the client. In some cases, the information is limited because of issues such as the lack of reported data. Such shortcomings are not always readily apparent. EJR aims to identify such shortcomings and make adjustments using its best judgement.

### 6. Whether and to what extent third-party due diligence services have been used in taking the rating action as required by Paragraph (a)(1)(ii)(F) of Rule 17g-7:

EJR does not utilize third-party due diligence services.

### 7. How servicer or remittance reports were used, and with what frequency, to conduct surveillance of the credit rating as required by Paragraph (a)(1)(ii)(G) of Rule 17g-7:

EJR did not conduct surveillance of this rating.

### 8. A description of the data that were relied upon for the purpose of determining the credit rating as required by Paragraph (a)(1)(ii)(H) of Rule 17g-7:

EJR uses a third-party data vendor to obtain essential data for ratings on this ABS product.

**9. A statement containing an overall assessment of the quality of information available and considered in the credit rating as required by Paragraph (a)(1)(ii)(I) of Rule 17g-7:**

The information used in this analysis is generally of high quality.

**10. Information relating to conflicts of interest as required by Paragraph (a)(1)(ii)(J) of Rule 17g-7:**

This rating is unsolicited.

**11. An explanation or measure of the potential volatility of the credit rating as required by Paragraph (a)(1)(ii)(K) of Rule 17g-7:**

EJR's rating aims to assess the possible loss of investing in the obligations. Factors which affect such projection, and in turn EJRs rating, include changes in the credit worthiness of the collateral assets, changes in the correlation between them, and overall economic changes.

**12. Information on the content of the credit rating as required by Paragraph (a)(1)(ii)(L) of Rule 17g-7:**

Regarding the historical performance of the credit rating, our rating transition matrix is available in our Form NRSRO, Exhibit 1.

**13. Information on the sensitivity of the credit rating to assumptions as required by Paragraph (a)(1)(ii)(M) of Rule 17g-7:**

See the section in the report entitled "Rating Summary".

**14. If the credit rating is assigned to an asset-backed security, a description of: (i) the representations, warranties, and enforcement mechanisms available to investors; and (ii) how they differ from the representations, warranties, and enforcement mechanisms in issuances of similar securities, as required by Paragraph (a)(1)(ii)(N) of Rule 17g-7:**

Such information in this analysis is non-public. Hence EJRs has determined that this disclosure doesn't apply to this report.

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## ATTESTATION FORM

In compliance with the US Securities and Exchange Commission (SEC) Rule 17g-7(a), the Egan-Jones analyst who published the report is responsible for the rating action and to the best knowledge of the person:

- 1) No part of the credit rating was influenced by any other business activities,
- 2) The credit rating was based solely upon the merits of the obligor, security, or money market instrument being rated, and
- 3) The credit rating was an independent evaluation of the credit risk of the obligor, security, or money market instrument.

### Analyst Signature:

*Steve Zhang*

STEVE ZHANG  
Rating Analyst  
Date Prepared  
2020-12-31

### Reviewer Signature:

*Kevin Zhang*

KEVIN ZHANG  
Rating Analyst  
Date Prepared  
2020-12-31

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## Appendix I

### Smoothing Calculation

Base Case PD : assuming LTV > 100% as Default (D)	
Avg NCF * 80%	
Property Value (\$M)	812M
LTV	90.98%

TRANCHES	LTV %	Est. LTV implied Rtg	Cash Flow Loss %	Smoothed (Adj for Est. Loss)	Smoothed for Cashflow Est, Loss
A1	62.77	A	0.00	A	A
A2	62.77	A	0.00	A	A
A3	62.77	A	0.00	A	A
A4	62.77	A	0.00	A	A
AAB	62.77	A	0.00	A	A
AS	69.12	BBB	14.14	BBB	BBB-
B	73.58	BB+	93.27	BB-	B+
C	77.93	BB-	95.74	CCC+	CCC
D	83.23	B	95.74	C	D
E	85.69	B-	94.97	NR	D
F	86.75	CCC+	94.97	NR	D
G	87.68	CCC+	94.97	NR	D
H	90.98	CC	94.97	NR	D