Presale Report
BX Trust 2021-ARIA

DBRS Morningstar
October 7, 2021

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DBRS Viewpoint
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Capital Structure

Commercial Mortgage Pass-Through Certificates

Description	Rating Action	Balance ($)	BLTV (%)	DBRS Morningstar Rating	Trend
Class A	New Rating - Provisional	832,300,000	24.67	AAA (sf)	Stable
Class A-1	New Rating - Provisional	150,000,000	24.67	AAA (sf)	Stable
Class B	New Rating - Provisional	292,600,000	32.01	AAA (sf)	Stable
Class C	New Rating - Provisional	218,400,000	37.50	AA (high) (sf)	Stable
Class D	New Rating - Provisional	278,900,000	44.50	AA (low) (sf)	Stable
Class E	New Rating - Provisional	555,300,000	58.44	A (low) (sf)	Stable
Class F	New Rating - Provisional	370,600,000	67.75	BBB (low) (sf)	Stable
Class G	New Rating - Provisional	293,000,000	75.11	BB (sf)	Stable
Class HRR	New Rating - Provisional	158,900,000	79.10	BB (low) (sf)	Stable
Class X-CP	New Rating - Provisional	1,493,300,000	n/a	AAA (sf)	Stable
Class X-EXT	New Rating - Provisional	1,493,300,000	n/a	AAA (sf)	Stable

Notes:
1. The Class X-CP and Class X-EXT Certificates will not have a certificate balance and will not be entitled to receive distributions of principal. The Class X-CP and X-EXT Certificates are notional with respect to certain portions of the Class A, B, and Class C Certificates.
2. The initial certificate balance of the Class HRR Certificates is subject to a variance of plus or minus 5%. The Class HRR Certificates will be retained by the third-party purchaser in order for the retaining sponsor to satisfy its U.S. risk retention requirements.
3. The Class A-1 Certificates are pari passu with the Class A Certificates. The DBRS Morningstar BLTV ratio shown for both classes is for the combined Class A and Class A-1 balance of $982,300,000.

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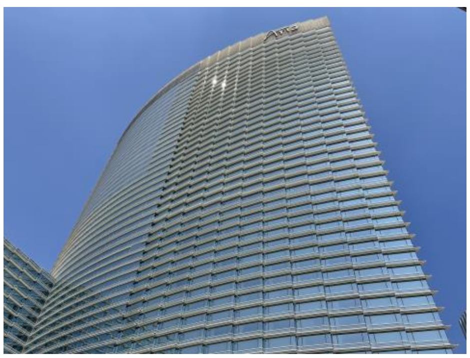
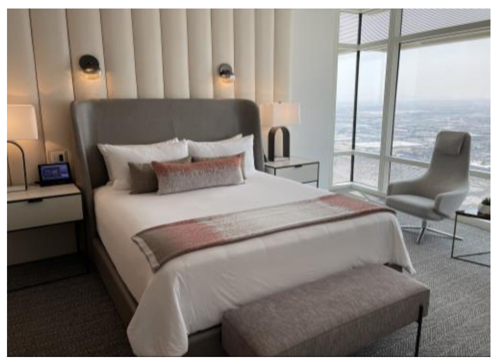
Collateral Spotlight

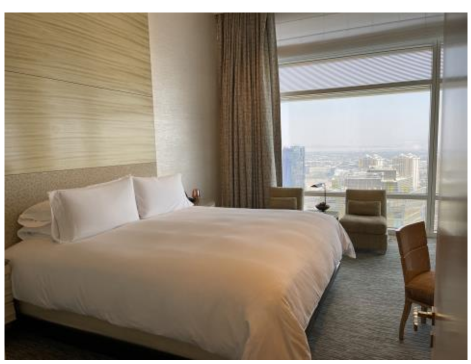
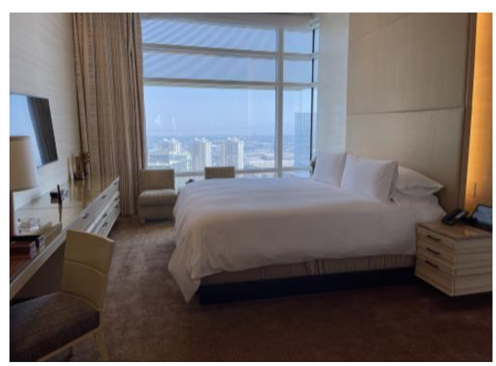


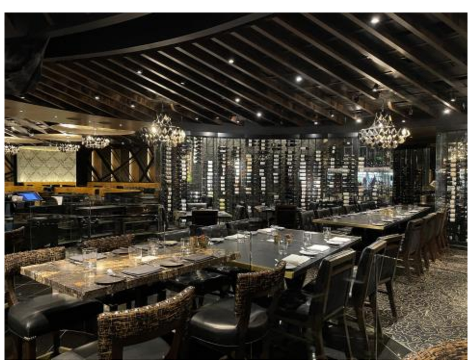


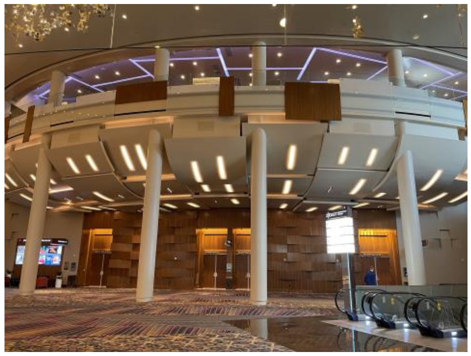




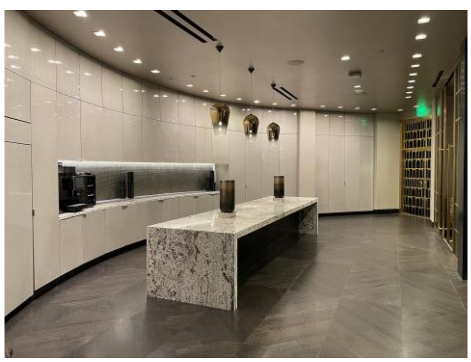










Source: DBRS Morningstar and Term Sheet.

Transaction Summary

Trust Characteristics			
Trust Loan Notional Balance ($)	3,150,000,000	**No. Properties**	2
Loan Purpose	Acquisition	**Property Type**	Hotel/Casino
Structure	REMIC	**Location(s)**	Las Vegas, NV
Rated Final Distribution Date	October 2036	**DBRS Morningstar Market Rank (WA)**	6.0
DBRS Morningstar BLTV (%)	79.10	**DBRS Morningstar Cap Rate (%)**	9.32
DBRS Morningstar ELTV (%)	79.10	**DBRS Morningstar Value ($)**	3,982,474,850
DBRS Morningstar Debt Yield (%)	11.78	**Quality/Volatility Adjustment (%)**	5.50
DBRS Morningstar DSCR (x)[2]	7.04	**Herfindahl Adjustment (%)**	n/a
Appraised LTV (%)[1]	54.5	**Other Adjustments (Y/N)**	Y
Issuer UW DSCR (x)[2]	7.63	**DBRS Morningstar NCF Variance (%)**	-7.0

1. Based on the WholeCo Appraised Value of approximately $5.8 billion as determined by Newmark Knight Frank as of August 9, 2021, which represents the aggregate fee-simple interest in the properties, exclusively.
2. Based on an assumed Libor rate of 0.10% and an assumed spread of 1.55000%. The DBRS Morningstar DSCR shown is the look-through DSCR based on the DBRS Morningstar look-through NCF. The DSCR based on the initial $215,000,000 master rent payment is 4.11x.

Participants	
Depositor	J.P. Morgan Chase Commercial Mortgage Securities Corp.
Mortgage Loan Originators	JPMorgan Chase Bank, National Association
	Citi Real Estate Funding Inc.
	Morgan Stanley Mortgage Capital Holdings LLC
	Wells Fargo Bank, National Association
Trustee	Wilmington Trust, National Association
Servicer	KeyBank National Association
Special Servicer	Situs Holdings, LLC
Certificate Administrator	Wells Fargo Bank, National Association
Operating Advisor	Pentalpha Surveillance LLC

DBRS Morningstar Perspective

BX Trust 2021-ARIA is a single-asset/single-borrower transaction collateralized by the borrower's leased-fee interest in the Aria Resort & Casino (Aria) and Vdara Hotel & Spa (Vdara) hotel and casino properties located on Las Vegas Boulevard in Las Vegas, Nevada.

Despite the disruptions and ongoing uncertainty in the lodging and gaming sectors attributable to the Coronavirus Disease (COVID-19) pandemic, DBRS Morningstar takes a generally positive view on Blackstone Real Estate Partners IX L.P.'s (BREP) acquisition of the Aria and Vdara properties. The transaction represents their third major resort casino sale-leaseback transaction in the past two years in Las Vegas; previous transactions using the same structure were collateralized by the Bellagio and the MGM Grand/Mandalay Bay properties. The sale-leaseback strategy allows experienced gaming operators like MGM Resorts International (MGM) to optimize capital allocation away from the ownership of real estate while maintaining operational control over their portfolios.

The Aria and Vdara properties are well-located along Las Vegas Boulevard, and despite being heavily impacted by the COVID-19 pandemic, have experienced a robust rebound in bookings and gaming activity over the past several months. DBRS Morningstar views the recovery trajectory of the properties with optimism, especially given the fact that international tourism and group and convention bookings have remained tepid to date. Once international guests and group/convention guests begin returning to

Las Vegas in earnest, DBRS Morningstar believes the properties will fully realize their operating potential. Despite this optimism, Las Vegas is heading into what is traditionally a low season during the months of November and December, and the robust performance exhibited during the summer vacation boom has the potential to trail off towards the end of the year. Not surprisingly, tourism remains the primary driver of Las Vegas' economy, and a number of macroeconomic or idiosyncratic factors could result in a reduction or a delay in the return of domestic or international tourism during the loan term and thus adversely affect performance at the properties. Despite these risks, DBRS Morningstar believes the loan benefits from favorable credit metrics as well as the operational expertise and expansive guest loyalty program that MGM brings to the table. Furthermore, the MGM payment and performance guarantee of the master lease provides further assurances to bondholders over the term of the loan.

Strengths

- **Leverage Profile and Cash Equity –** The $3.15 billion whole loan represents a relatively conservative LTV of 79.10% on the DBRS Morningstar concluded value, which is below the typical leverage point for most single-asset/single-borrower transactions. There is also no existing additional debt in the form of a B note or mezzanine debt, and the sponsorship is acquiring the property and contributing more than $763.4 million in cash equity as part of the transaction.
- **Central Location** – The Aria and Vdara properties are well located along the central portion of the Las Vegas Strip, which results in a critical mass of foot traffic attributable to numerous nearby attractions and properties, including the Bellagio and Cosmopolitan. Furthermore, the properties are the centerpiece of the 16.7 million-sf mixed-use development known as CityCenter, which includes the high-end Shops at Crystals retail complex, among other attractions. Finally, the Aria Express (formerly known as the CityCenter Tram) monorail system connects the properties via the Shops at Crystals with Bellagio to the north and Park MGM to the south.
- **Rebounding Performance** – Predictably, performance at the Aria and Vdara properties has suffered over the last 18 months as the ongoing coronavirus pandemic besieged the economy, crippled domestic and international travel, and resulted in mandated closures and other operating restrictions. However, the properties experienced a robust rebound in performance as vaccinations rolled out and as Americans emerged from months of quarantine. In 2021, combined monthly EBITDAR during the months of May, June, July, and August exceeded the same periods in 2019. Additionally, the combined financials for both properties for the T-12 period ended August 31, 2021, which include several heavily depressed months of performance in November 2020 and December 2020 during the height of the second wave of the pandemic, rebounded to approximately 70% of their stabilized 2019 levels compared with only 52% for the T-12 period ended June 30, 2021 (further illustrating the strong rebound over the summer).
- **Experienced Operator and Rewards Program** – MGM is a global, publicly traded gaming and hospitality firm founded in 1986. MGM is an experienced hotel casino operator with properties in virtually all of the world's major gaming markets, including Las Vegas; Atlantic City, New Jersey; Macau; and many others. The firm has a portfolio of 31 properties and has more than 83,000 employees globally. Furthermore, MGM's "M life" loyalty program is extensive and provides the company with significant leverage to attract and retain gamblers to its properties around the world.
- **MGM Guaranty** – The transaction benefits from a guaranty provided by MGM, which covers payment and performance of all monetary obligations and certain other obligations of the MGM Tenant under the

master lease agreement. However, unlike prior transactions, MGM has not provided a shortfall guaranty for the mortgage loan. While MGM is not an investment grade-rated entity, the firm is well capitalized and had revenues of approximately $12.9 billion and EBITDA of approximately $3 billion in 2019.

- **Rooms Renovation and Future Capex** – MGM Resorts has invested a significant amount of capital, nearly $700 million, into both properties since 2012 in order to maintain and improve their performance. MGM is planning to invest several hundred million dollars across both properties over the next four years, including a major rooms renovation at Aria. Furthermore, under the terms of the master lease, MGM is required to invest a minimum of 4.0% of actual net revenues per year into the properties throughout the five-year loan term and between 2.5% and 3.0% per year thereafter.
- **Institutional Sponsorship** – The borrower sponsor for the transaction is Blackstone Real Estate Partners IX L.P., which is an affiliate of The Blackstone Group. Blackstone Group is a global private equity firm with $411 billion of investor capital under management and is one of the world’s largest and most experienced property owners. Blackstone has extensive experience owning and managing operationally intensive gaming and hospitality assets, including successfully owning and operating the nearby Cosmopolitan since acquiring that property in 2014.

Concerns

- **Coronavirus Risks** – The ongoing coronavirus pandemic continues to pose challenges and risks to virtually all major commercial real estate property types, creating a substantial element of uncertainty around the recovery of demand in the hospitality sectors, even in stronger markets that have historically been highly liquid. Both properties were closed from April 2020 through June 2020 because of government restrictions as a result of the pandemic, and combined occupancy and RevPAR declined to 50.2% and $125.14 as of YE2020, from 90.6% and $231.89 as of YE2019. As previously discussed, the properties have rebounded sharply in 2021, but the recovery could be hampered by unforeseen changes in public health circumstances or the emergence of new variants.
- **Revenue Stabilization** – DBRS Morningstar’s NCF and value conclusions reflect normalized occupancy assumptions of 90.2% for Aria and 90.8% for Vdara, which are above the 55.5% and 56.0% occupancy rates for the properties, respectively, as of the T-12 period ended August 31, 2021. DBRS Morningstar elected to stabilize the properties and assumed occupancy in line with pre-pandemic performance given the robust recovery trajectory, MGM's extensive experience operating casino and hospitality properties, strong operating history, and superior location of the properties on the Las Vegas Strip. DBRS Morningstar accounted for this stabilization risk by applying a penalty to its qualitative adjustments.
- **Gaming and Food and Beverage Volatility –** A substantial component of revenue across the properties is derived from non-rooms revenue, including gaming revenue (27.3% of DBRS Morningstar revenue) and revenue from food and beverage outlets (29.5% of DBRS Morningstar revenue). These revenue sources are generally more volatile than rooms revenue; however, the proportion of gaming revenue across both properties is consistent with most other properties on the Las Vegas Strip, which generally derive around 30% of revenue from casino operations. Gaming revenue has historically been disproportionately dependent on the trends and habits of high-end international gamblers, who have been slower to return to Las Vegas than domestic gamblers because of international travel restrictions.
- **New Supply and Competition** – Two major new properties, Resorts World Las Vegas and the Drew (formerly the Fontainebleau), will collectively deliver more than 7,300 new rooms to the Strip over the next several years. Resorts World Las Vegas opened in June 2021 and is the first new property to deliver

on the Strip since the Cosmopolitan in 2010. The Drew has experienced significant construction delays and is not anticipated to deliver until 2025. DBRS Morningstar believes Resorts World Las Vegas will likely compete, to some extent, with Aria's room product and will attempt to draw its share of gamblers, especially from Asia.

- **OpCo/PropCo Master Lease Risks** – The borrowers have entered into a master lease agreement with MGM Lessee III, LLC (the Master Tenant or the MGM Tenant). While the borrowers and the Master Tenant are not under common control and a true lease opinion was provided, master lease arrangements may still pose a risk of recharacterization of the master lease as a financing from the borrowers to the Master Tenant. Furthermore, the master lease allows the Master Tenant to obtain leasehold mortgage and/or mezzanine financing. The master lease and loan documents also contain certain restrictions that may affect the lender’s rights and remedies. For example, the master lease restricts certain transfers of the property to designated competitors of the Master Tenant, which could significantly reduce the pool of qualified buyers and therefore reduce liquidity.
- **Future Permitted Mezzanine Debt** – The borrower has a one-time right to incur future mezzanine debt subject to certain conditions that include, among other things, (1) a maximum LTV of 80.8% based on appraisals ordered by the lender at the time of closing of the mezzanine loan, (2) a debt yield of at least equal to 8.60%, inclusive of the additional mezzanine debt, at the time of closing of the loan, and (3) an intercreditor agreement reasonably satisfactory to the lender. Rating agency confirmation is not required in connection with the incurrence of a future mezzanine loan.
- **Legal and Structural Considerations** –
    - *Non-Recourse Carveout Guaranty Cap* – The liability of the carve-out guarantor is capped at 10% of the then-outstanding loan amount for bankruptcy events and full recourse is triggered only by such bankruptcy events or if the mortgage or other loan document is deemed a fraudulent conveyance or otherwise deemed void pursuant to any principles limiting the rights of creditors.
    - *Weak Qualified Transferee Criteria* – The qualified transferee provisions allow the borrowers to transfer the properties to a public vehicle or person having a minimum market capitalization or net worth of at least $500 million (excluding the value of the portfolio). DBRS Morningstar views the net worth provisions as particularly weak, especially compared with the loan size of $3.15 billion.
    - *Libor Elimination and Benchmark Transition*: The underlying mortgage loan for the transaction will pay interest at a floating rate, which presents potential benchmark transition risk as the deadline approaches for the elimination of Libor. The transaction documents provide for the transition to an alternative benchmark rate, which is primarily contemplated to be either Term Secured Overnight Financing Rate (SOFR) plus the applicable Benchmark Replacement Adjustment or Compounded SOFR plus the Benchmark Replacement Adjustment. For more information, please refer to page 32 of this report.

Master Lease Summary

The borrowers have entered into a 30-year NNN master lease agreement with two 10-year renewal options with MGM Tenant, which is a wholly owned subsidiary of MGM. Under the terms of the master lease, MGM Tenant is required to pay an initial lease payment of $215 million per year. A summary of the master lease terms are described below:

Feature	Explanation
Tenant	MGM Lessee III, LLC
Initial Term	30 Years
Renewal Options	(3) 10 Year Renewals
Initial Master Rent	$215,000,000
Annual Escalations	2.0% per year through initial maturity. Thereafter, the greater of 2% or CPI (capped at 3%)
Guarantor	MGM Resorts International (NYSE: MGM)
Tenant/Operating Covenants	If either (a) (x) EBITDAR to Rent Ratio for the prior four fiscal quarters is less than 1.60x and (y) MGM's market cap is less than $6.0 billion or (b) (x) MGM is no longer publicly traded and listed on NYSE, AMEX, or NASDAQ and (y) the EBITDAR to Rent Ratio for the prior four fiscal quarters is less than 2.0x, then MGM Tenant will be required to provide one or more letters of credit or fund a cash escrow in an aggregate amount equal to the following year's rent (taking into account the applicable escalations).
Guaranty	Pursuant to the Lease Guaranty (as defined below), MGM has guaranteed the payment of all monetary obligations under the Master Lease and the performance of all terms, conditions and covenants of the non-Landlord parties to the lease documents. There is no continuing net worth requirement with respect to MGM in connection with the Lease Guaranty.
Transition Services Agreement	No intellectual property is licensed to the Borrowers and the Borrowers have no option to purchase upon expiration of the Master Lease. Furthermore, upon the expiration of the Term or earlier termination of Master Lease, MGM Tenant will be obligated to provide up to 18 months of transition services to permit the continuous and uninterrupted operation of the Property.
Required Capex Spend	MGM Tenant is required to spend 4.0% of net revenues from the Properties during the five-year period from January 1, 2021, to December 31, 2025, and each five-year period thereafter on a rolling basis (in aggregate for the Properties), such amount not to be less than 2.5% of the actual net revenue of any individual Property. MGM Tenant is also required to make monthly deposits into an FF&E Reserve in arrears, in an aggregate amount equal to 1.5% of net revenues from the Properties, which may be used for FF&E and on qualifying capex in satisfaction of the Required Capex spend.
Master Rent DSCR	4.11x on the $3.15 billion whole loan.
DBRS Morningstar NCF Coverage to Master Rent (Initial)	1.73x
DBRS Morningstar NCF Coverage to Master Rent (Loan Maturity)	1.56x (based on an assumed 2% growth rate)

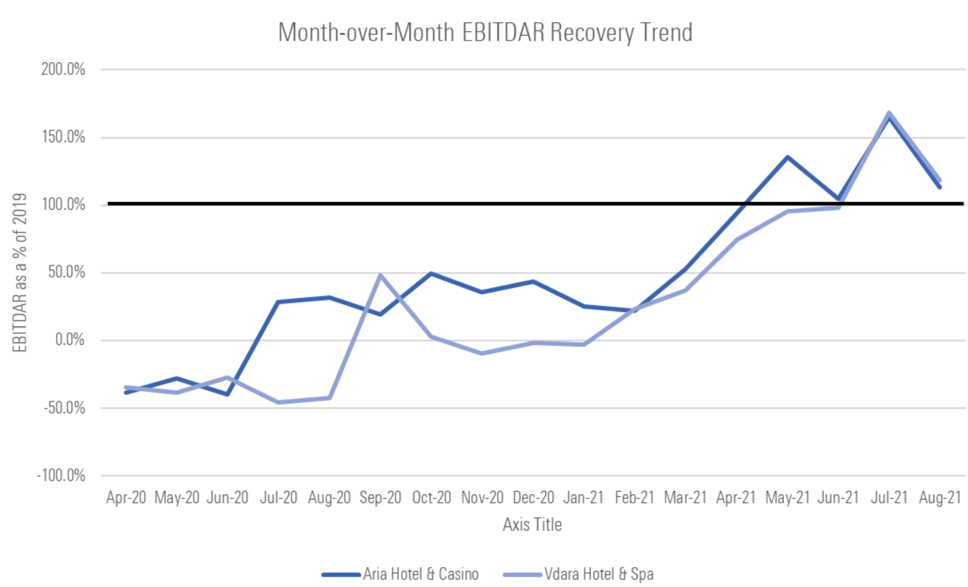
Source: DBRS Morningstar analysis.

Coronavirus Discussion

Both the Aria and Vdara properties were heavily affected by the onset of the pandemic and suffered as a result of months of lockdowns and travel restrictions. As previously mentioned, the properties have steadily rebounded since January 2021, which coincided with the beginning of the vaccine rollout in the United States. As shown below, both properties experienced banner summer months in 2021, with monthly EBITDAR in June, July, and August outpacing the same months in 2019.

Midweek occupancy at Aria was hovering in the mid-70s at the time of DBRS Morningstar's tour of the asset in late August, but the property was at nearly full capacity on the weekends. This is consistent with the strong rebound in domestic casino and leisure guests, which are driving the recovery at the properties even without the international play. The lower midweek occupancy is symptomatic of the slower recovery in meeting and convention-related bookings, which DBRS Morningstar believes will pick up in earnest in early 2022, barring any unforeseen changes to public health circumstances. Several large conferences have taken place at Aria since the beginning of the year or are scheduled to take place, including World of Concrete, USA Basketball, USCPA, and Structured Finance Industry Group conferences.

Recovery Trajectory—Month-over-Month EBITDAR Performance as a % of 2019



Source: DBRS Morningstar analysis.

As previously mentioned, the combined financials for both properties for the T-12 period ended August 31, 2021, which include several heavily depressed months of performance in November 2020 and December 2020 during the height of the second wave of the pandemic, rebounded to approximately 70% of their stabilized 2019 levels compared with only 52% for the T-12 period ended June 30, 2021 (further illustrating the strong rebound over the summer).

Mortgage Loan and Debt Capital Structure

The $3.15 billion mortgage loan was co-originated by JPMorgan Chase Bank, National Association; Citi Real Estate Funding Inc.; Morgan Stanley Bank, N.A.; and Wells Fargo Bank, National Association and pays an assumed floating-rate interest of Libor plus 1.550% on an IO basis through the initial two-year loan term. The mortgage loan features three one-year extension options subject to certain minimum debt yield tests and other requirements.

Mortgage Loan Summary			
Mortgage Loan Balance	3,150,000,000	Cash Management	Springing
Amortization	IO	Lockbox	Hard
Interest Rate	Libor plus 1.550%	Interest Accrual	Actual/360
Fixed/Floating Rate	Floating Rate	Assumable	Yes
Interest Rate Cap, Strike Rate	Yes, 3.50% (Initial Term)	Prepayable	Yes
Initial Loan Term	24 months	Extension Terms	Three One-Year Extensions

Debt Structure					
Tier	Debt Amount ($)	Interest Rate (%)	Payment Terms	DBRS Morningstar DSCR (x)	DBRS Morningstar LTV (%)
Senior A Notes	3,150,000,000	L+1.550	IO	7.04	79.10
Total/WA	**3,150,000,000**	**L+1.550**			

Note	**Original Principal Balance ($)**	**Note Status**
A-1	1,260,000,000	BX Trust 2021-ARIA - JPM
A-2	630,000,000	BX Trust 2021-ARIA - Citi
A-3	630,000,000	BX Trust 2021-ARIA - MS
A-4	630,000,000	BX Trust 2021-ARIA - WFB
Total Debt	**3,150,000,000**	**BX Trust 2021-ARIA**

This securitization transaction will be subject to the credit risk retention requirements of Regulation RR, 12 C.F.R. Part 244. An economic interest in the credit risk of the mortgage loan is expected to be retained as an eligible horizontal residual interest in the form of the Class HRR Certificates. The depositor intends to satisfy its risk retention requirements through a third-party purchaser, which is expected to be CPPIB Credit Structured North America III, Inc.

Risk Retention			
Applicable	Type	Interest	Risk Retention Holder
Yes	Eligible Horizontal Interest	Class HRR Certificates	Unidentified

Note: Risk retention is defined as the credit risk retention requirements of Section 15G of the Exchange Act, as added by Section 941 of the Dodd-Frank Act.

Sources and Uses

The total debt of $3.15 billion, along with approximately $763.4 billion in sponsor equity, will be used to acquire the properties for an estimated purchase price of $3.89 billion.

Source	**Amount ($)**	**% of Total**	**Uses**	**Amount ($)**	**% of Total**
Mortgage Loan	3,150,000,000	80.50	Purchase Price	3,890,000,000	100.00
Sponsor Equity	763,400,512	19.50	Closing Costs	23,400,512	
Totals	**3,913,400,512**	**100.00**		**3,913,400,512**	**100.00**

Collateral Summary

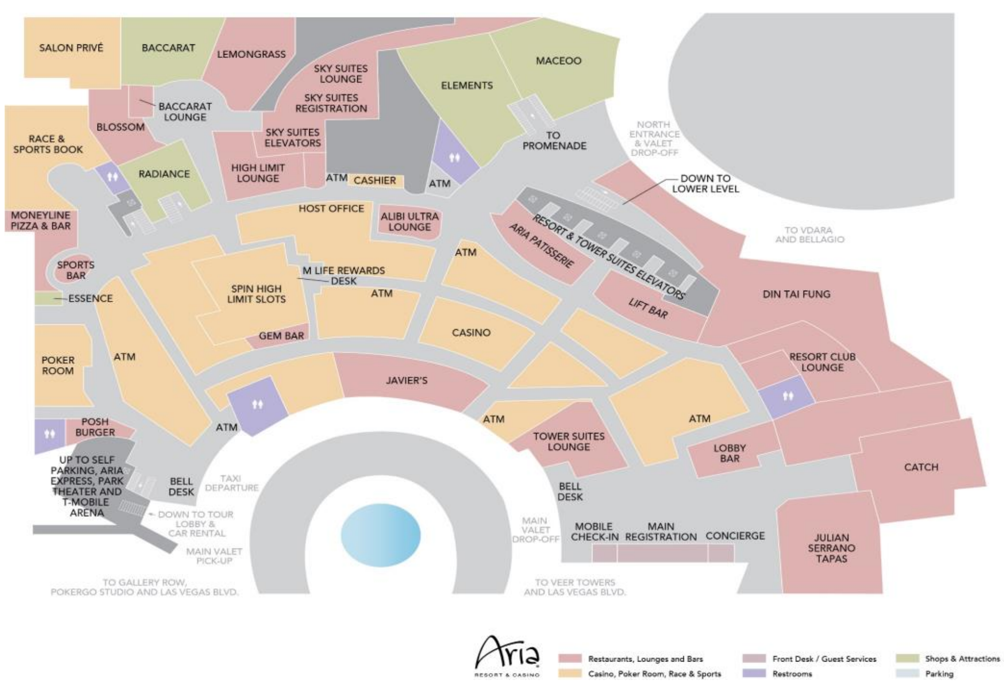
BX Trust 2021-ARIA is collateralized by two high-profile Las Vegas resort hotel properties, Aria and Vdara. The properties together consist of more than 4,000 guest rooms in various configurations, more than 370,000 sf of convention and meeting space, and more than 150,000 sf of casino space more centrally located along the Las Vegas Strip. The properties are part of the larger CityCenter mixed-use development, which also includes the Shops at Crystals, a 392-key Waldorf Astoria hotel, and 670 condominium units in the Veer Towers. Both properties are LEED Gold-certified resorts.

	Aria Resort & Casino	Vdara Hotel & Spa
Total Guest Rooms	4,002	1,348
Suites	568 (14%)	1,348 (100%)
Gaming (sf)	150,000	n/a
F&B Outlets	22	2
Meeting (sf)	372,604	n/a

Aria Resort & Casino

Aria is a 4,002-key resort and casino that spans more than 5 million sf and opened in late 2009. The property is an anchor component of the larger 76-acre CityCenter mixed-use development on the Las Vegas Strip. Aria features 568 suites, including the Sky Suites and Villas, which DBRS Morningstar views as among the best high-roller room product offerings in Las Vegas. Aria has more than 150,000 sf of gaming space consisting of 118 table games,1,338 slot machines, and the Table One ultra-high-limit poker room. Aria also hosts 22 F&B outlets, including partnerships with celebrity chefs Julian Serrano and Jean-Georges Vongerichten.

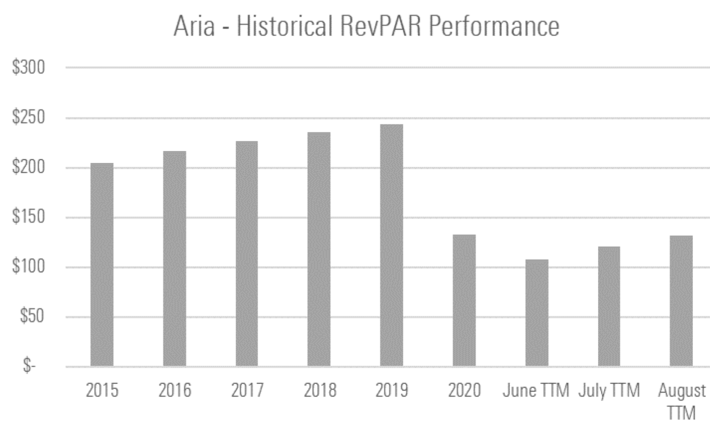
Property Map—Aria



Source: Term sheet.

The property also features numerous entertainment options, including the JEWEL Nightclub and the Aria Fine Art Collection. Additional amenities include an extensive, 80,000-sf bi-level salon and spa along with a recently expanded fitness center. There is also more than 370,000 sf of meeting and convention space that regularly hosts large annual meetings and industry conventions.

Aria—Historical RevPAR Performance (2015 to Current)



Source: DBRS Morningstar and term sheet.

Aria Historical Revenue Mix

	2015	2016	2017	2018	2019	2020	August T-12
Hotel	29.6%	30.7%	30.2%	30.1%	30.7%	29.1%	27.3%
Casino	34.4%	33.0%	34.4%	32.3%	30.3%	37.9%	43.0%
F&B	25.2%	28.6%	28.4%	30.0%	31.2%	26.0%	23.6%
Other	10.8%	7.7%	7.0%	7.7%	7.8%	7.1%	6.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: DBRS Morningstar.

Aria F&B Outlets

Aria features numerous notable, high-profile dining options, including multiple celebrity chef partnerships. MGM's strategy has been to operate the F&B outlets itself while partnering with notable chefs to license their dining concepts, with an eye toward yield management. For example, Aria recently replaced its buffet (which operated at a loss) with an à la carte cafe option, which has driven yield without compromising the guest experience.

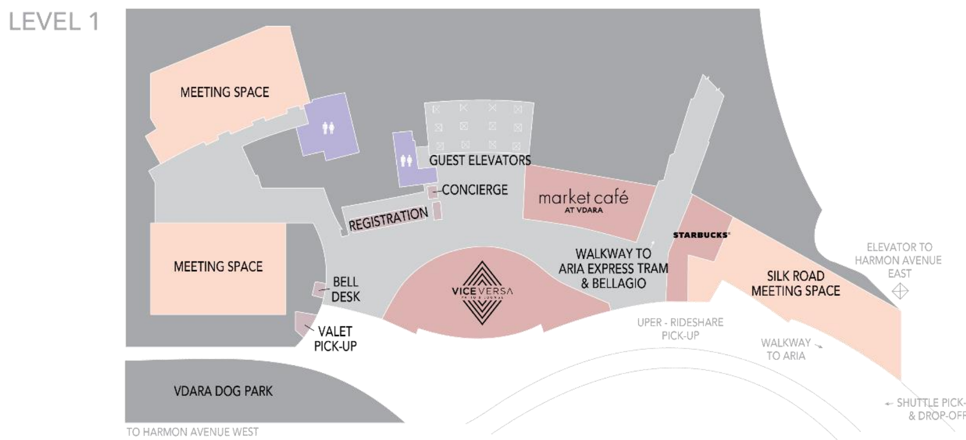
Aria F&B Outlet	Description
Carbone	Carbone's New York-inspired cuisine features classics such as lobster fra diavolo, chicken scarpariello, veal parmesan, and octopus pizzaiolo.
Jean-Georges Steakhouse	Jean-Georges Steakhouse stands out by featuring cuts from all over the world, including Japan, Argentina, and Uruguay.
Bardot Brasserie	Blending the culture of a Parisian cafe with the focus and detail of an award-winning kitchen, Bardot Brasserie offers a modern interpretation of traditional brasserie fare for lunch.
JEWEL Nightclub	JEWEL Nightclub spans more than 24,000 sf of precisely designed space featuring more than 1,400 sf of architectural LED ribbons and five themed VIP suites.
LIQUID Pool Lounge	The 16,000-sf LIQUID Pool Lounge is a premier adult-only al fresco hideaway, offering poolside pampering and an upscale experience with dipping pools, cocktails, and food offerings.

Source: Term sheet.

Vdara Hotel & Spa

Initially conceived as a condominium project, Vdara is a smaller 57-story all-suite hotel and spa that sits adjacent to the Aria Resort & Casino. The pet-friendly property is composed of 1,348 keys across three towers that are connected via a ground-floor podium. Vdara is connected to the Bellagio via a pedestrian walkway. The property was awarded U.S. News & World Report's Gold Badge rating for 2021. Amenities include an 18,000-sf wellness spa and a 40,000-sf pool deck with 19 private cabanas.

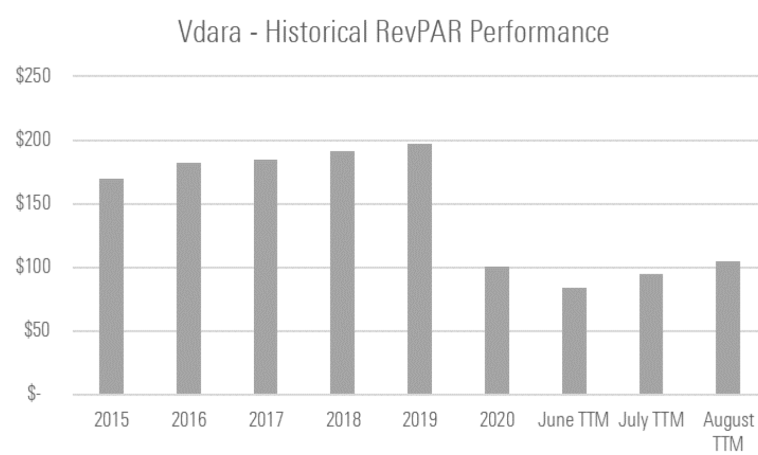
Property Map—Aria



Source: Term sheet.

Unlike Aria, the Vdara property does not include any gaming space and has only 15,000 sf of conference and event space. Additionally, 148 of the property's rooms are condominiums owned by private individuals, and approximately 50 of those units participate in the property's rental program.

Vdara—Historical RevPAR Performance (2015 to Current)



Source: DBRS Morningstar and term sheet.

Vdara Historical Revenue Mix

	2015	2016	2017	2018	2019	2020	August T-12
Hotel	78.0%	78.2%	75.8%	76.2%	76.2%	76.8%	80.1%
Casino	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
F&B	15.3%	14.0%	14.9%	14.3%	14.3%	13.2%	10.9%
Other	6.8%	7.8%	9.4%	9.5%	9.5%	10.0%	9.0%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: DBRS Morningstar.

Vdara F&B Outlets

The Vdara property features two smaller F&B outlets, which are mainly convenience amenities for guests. The Market Café Vdara outlet includes a boutique grocery store, which complements the all-suite nature of the room product, and is a convenience for the condominium owners in the towers. As outlined previously, the headline F&Bs establishments are primarily in the adjacent Aria property.

Aria F&B Outlet	Description
Market Café Vdara	This modern cafe features a menu of freshly prepared breakfast (available all day), lunch, and dinner options. Market Café Vdara also offers patrons the added convenience of a boutique grocery store. The grocery store features items that create a luxurious home away from home, including fresh items, meats, wines, and cheeses.
VICE VERSA Patio & Lounge	The VICE VERSA Patio & Lounge is at the center of the Vdara and embodies its stylish aesthetics and vibrant energy. By day, it's a comfortable and casual space for business and leisure. By night, it transforms into a contemporary, hip lounge. The patio, with its stunning water feature and fire pits, is open for enjoying tasty bites and handcrafted cocktails.

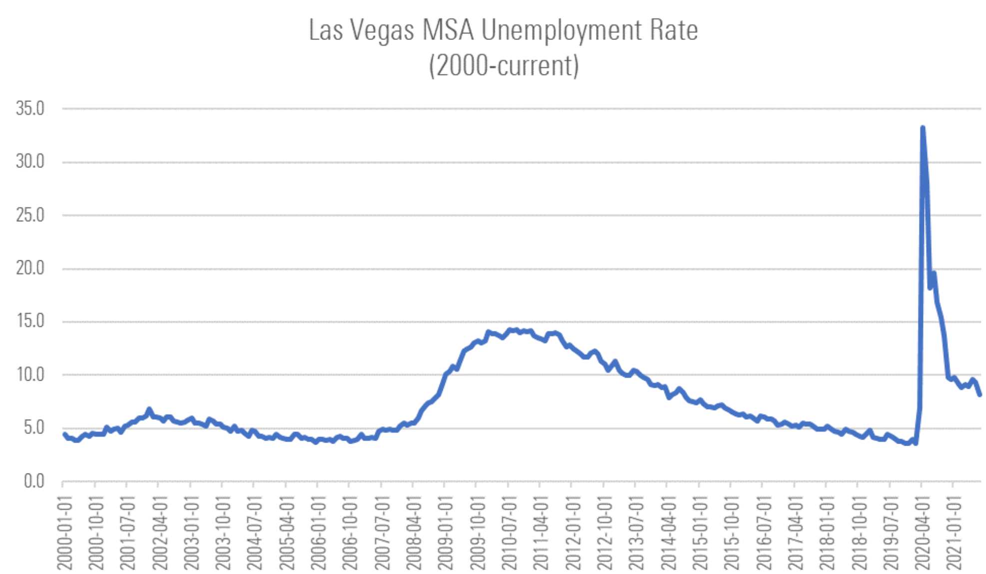
Source: Term sheet.

Market Summary

Aria and Vdara are both in the Las Vegas MSA, which is the largest in the state with more than 77% of the state's population. Las Vegas is the nation's largest hospitality market by room count. In fact, the leisure and hospitality industries account for about 30% of the market's employment.

The Las-Vegas-Henderson-Paradise area faced one of the most severe recessions last spring because of the pandemic's adverse impact on travel and tourism. In spite of some recovery, total payrolls are still 14% below pre-pandemic levels compared with 6% for the nation. The unemployment rate climbed to 14.9% in 2020 from only 4.1% in 2019. The downward correction was concentrated in leisure/hospitality, finance, and manufacturing; however, the region did see significant recovery in employment in 2021. Per the U.S. Bureau of Labor Statistics, total employment in the Las Vegas MSA has increased by 38% to 1,020,326 in April 2021 from 739,267 in April 2020. The unemployment rate stood at 9.1% as of April 2021.

Las Vegas MSA Unemployment Rate



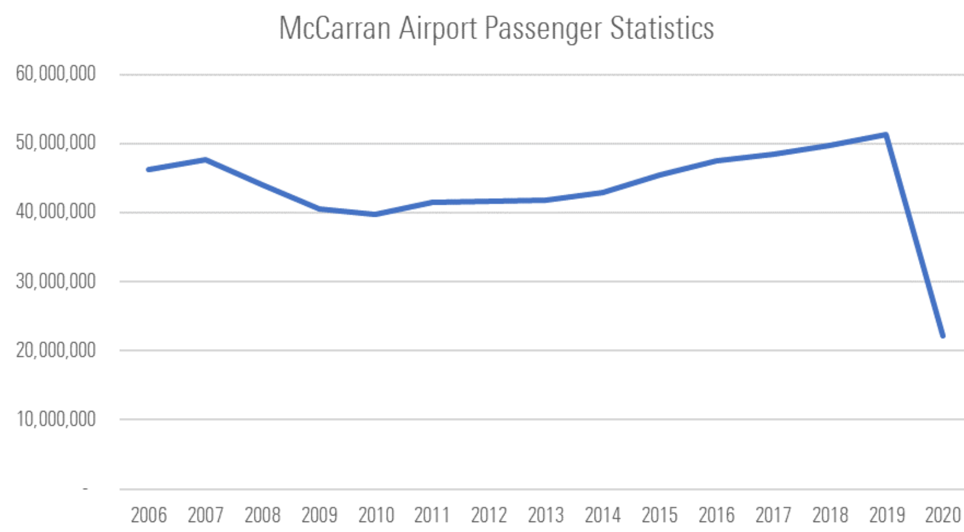
Source: Federal Reserve Economic Data.

Las Vegas Tourism Trends

McCarran International Airport Trends

Las Vegas has been one of the premier international tourism destinations for more than 20 years. McCarran International Airport is the main airport serving the Las Vegas Valley and is nearly adjacent to the Strip. The airport saw a decrease of 56.8% in combined passenger volume between 2019 and 2020 because of the pandemic. According to the appraisal, these statistics have shown a sharp increase of 36.5% YTD.

McCarran International Airport Statistics

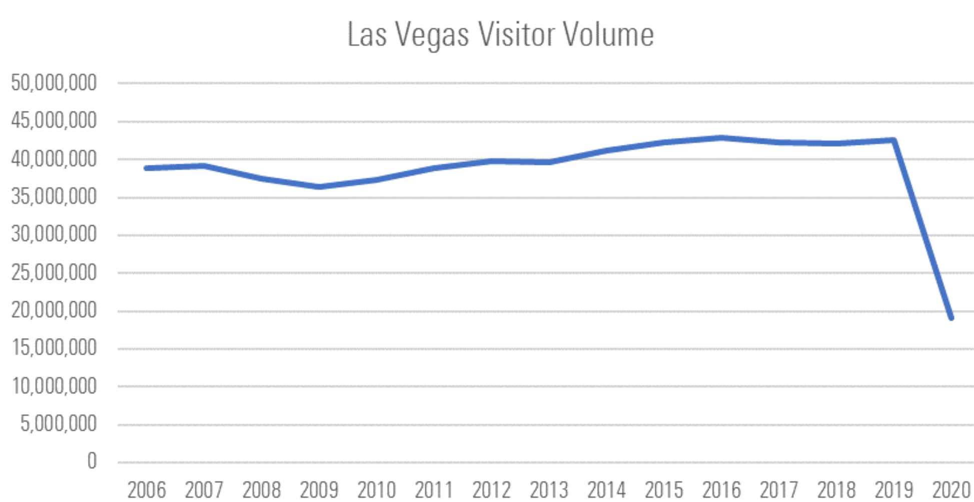


Source: Appraisal.

Historical Tourism Volume

The total number of visitors to Las Vegas for 2020 was 19,031,000, which represents a significant decline of 55.3% from 2019, when the region had 42,523,700 visitors. The decline is explained by the pandemic, which affected travel considerably in 2020. However, according to the appraisal, visitor volume is rebounding in 2021 to the tune of 38.6%.

Las Vegas Visitor Volume

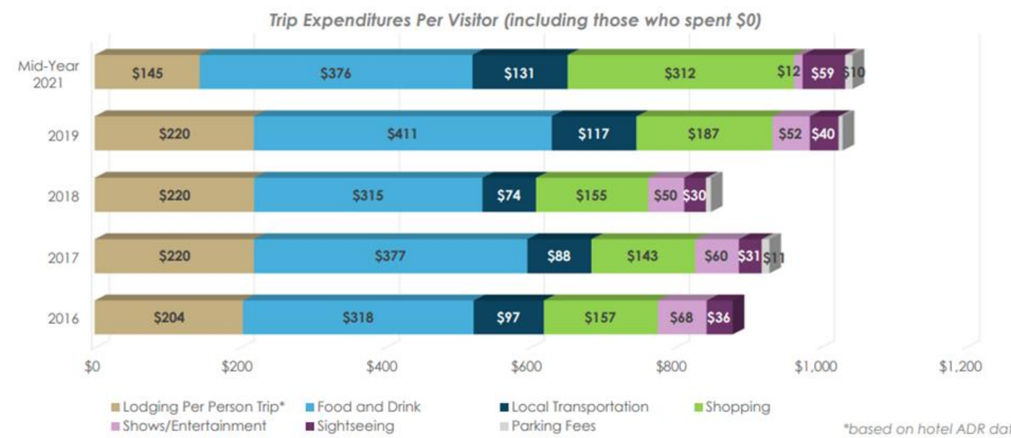


Source: Appraisal.

Trip Expenditures

A visitor to Las Vegas spends $1,045 on average during their trip, according to Las Vegas Convention and Visitors Authority's research for mid-2021. This figure is approximately in line with pre-pandemic visitor spending in 2019 and shows an upward trend compared with 2016, 2017, and 2018 levels. However, between 2019 and mid-year 2021, spending on lodging per person did see a decline of 34.1% (to $145 from $220). However, visitors as of mid-year 2021 were spending an average of $312 per trip on shopping, which represents a 66% increase over 2019. For more details, see Las Vegas Convention and Visitors Authority's chart showing trip expenditures per visitor below.

Trip Expenditures



Source: Las Vegas Convention and Visitors Authority.

Competitive Set

According to the appraisal, Aria is part of the Las Vegas Strip $72 Million and Over market, which, according to the Nevada Gaming Control Board, currently has 22 casino properties operating within it. However, DBRS Morningstar does not view some of the lower- and middle-market casino properties listed below as being directly competitive; rather, DBRS Morningstar views nearby upmarket properties including the Cosmopolitan, Bellagio, Wynn/Encore, and the Venetian/Palazzo to be most directly competitive.

COMPETITIVE PROPERTY SUMMARY

General Property Information

Property Name / Address	Number of Rooms	Year Opened	Casino Space (Total SF)	Casino Space (Per Room)	Gaming Devices	Table Games
Aria Resort & Casino 3730 S. Las Vegas Boulevard, Las Vegas, NV	4,004	2009	150,000	37.5	1341	85
Bellagio 3600 South Las Vegas Boulevard, Las Vegas, NV	3,933	1997	156,000	39.7	1388	120
Wynn/Encore 3131 South Las Vegas Boulevard, Las Vegas, NV	2,034	2004	191,424	94.1	1850	176
Caesars Palace 3570 South Las Vegas Boulevard, Las Vegas, NV	3,793	1966	124,200	32.7	1531	93
Venetian/Palazzo 3355 South Las Vegas Boulevard, Las Vegas, NV	4,028	1999	129,083	32.0	1430	183
MGM Grand 3799 South Las Vegas Boulevard, Las Vegas, NV	4,994	2010	161,800	32.4	1245	89
Cosmopolitan 3708 South Las Vegas Boulevard, Las Vegas, NV	3,042	1989	68,193	22.4	1335	85
The Mirage 3400 South Las Vegas Boulevard, Las Vegas, NV	3,044	2021	90,954	29.9	850	66
Resorts World 3000 South Las Vegas Boulevard, Las Vegas, NV	3,506	1999	117,000	33.4	1430	90
Mandalay Bay 3950 Las Vegas Boulevard South, Las Vegas, NV	3,215	2000	147,992	46.0	1041	64
Planet Hollywood 3667 South Las Vegas Boulevard, Las Vegas, NV	2,496	2000	64,500	25.8	1077	87
Harrah's Las Vegas 3475 South Las Vegas Boulevard, Las Vegas, NV	2,526	1972	88,800	35.2	1319	80
Rio 3700 West Flamingo Road, Las Vegas, NV	2,522	1990	117,300	46.5	1038	65
Flamingo 3555 South Las Vegas Boulevard, Las Vegas, NV	3,460	1946	72,300	20.9	1053	65
Palace Station 2433 West Sahara Avenue, Las Vegas, NV	1,023	1976	126,085	123.3	1609	52
Circus Circus 2880 South Las Vegas Boulevard, Las Vegas, NV	3,767	1968	55,752	14.8	1047	23
Treasure Island 3300 South Las Vegas Boulevard, Las Vegas, NV	2,884	1993	46,324	16.1	1000	46
Excalibur 3850 South Las Vegas Boulevard, Las Vegas, NV	3,981	1990	91,882	23.1	925	38
New York - New York 3790 South Las Vegas Boulevard, Las Vegas, NV	2,022	1997	51,756	25.6	961	56

Source: Appraisal.

The primary competitive set for Vdara comprises other luxury and mid-to-upscale non-gaming hotels that are located on the Strip or within a short distance from the Strip, including Trump International Hotel Las Vegas, Four Seasons Hotel Las Vegas, JW Marriott Las Vegas Resort & Spa, and Waldorf Astoria Las Vegas. All of the aforementioned properties were deemed to have a 100% competitive quotient with MGM Grand and Mandalay as determined by the appraiser.

COMPETITIVE PROPERTY FACILITIES OVERVIEW

General Property Information							Amenities and Other Characteristics					
Property Name / Address	Number of Rooms	Year Opened	Competitor Type	Meeting Space (Total SF)	Meeting Space (Per Room)	Meeting Segment Index (per 1,000 sf)	Restaurants	Breakfast	Pool	Business Center	Fitness Room	Other
Vdara Hotel & Spa 2600 West Harmon Avenue, Las Vegas, NV	1,495	2009	-	15,850	10.6	5.4	Full		X	X	X	Spa, Cabanas, Whirlpool
Trump International Hotel Las Vegas 2000 Fashion Show Drive, Las Vegas, NV	872	2008	Primary	1,150	1.3	72.0	Full		X	X	X	Spa, Cabanas, Whirlpool
Four Seasons Hotel Las Vegas 3960 South Las Vegas Boulevard, Las Vegas, NV	424	1999	Primary	28,300	66.7	3.9	Full		X	X	X	Spa, Cabanas, Whirlpool
JW Marriott Las Vegas Resort & Spa 221 North Rampart Boulevard, Las Vegas, NV	548	1999	Primary	74,294	135.6	1.7	Full		X	X	X	Cabanas, Shuttle to strip, Spa,
Waldorf Astoria Las Vegas 3752 Las Vegas Boulevard South, Las Vegas, NV	389	2009	Primary	12,277	31.6	4.1	Full		X	X	X	Spa, Whirlpool

Competitive Set Occupancy, ADR, and RevPAR

Vdara generally underperformed its competitive set in 2018 through 2020, having achieved lower RevPAR penetrations in those three years compared with the competitive set. Vdara has historically had an occupancy rate that hovers at 86%, which declined to 32% in 2020 as a result of the pandemic. From an ADR perspective, Vdara has generally underperformed its competitive set.

The following table summarizes Vdara's performance relative to its competitive set over the past three years from an occupancy, ADR, and RevPAR perspective. At the subject property, RevPAR steadily grew to $155.72 in 2019 from approximately $139.80 in 2013 and dropped to $52.31 in 2020 as a result of the pandemic. According to the appraisal, the subject achieved a YTD June 2021 RevPAR of $81.55, which shows recovery to some extent.

Performance at a Glance

	OCCUPANCY (%)			ADR			RevPAR		
Year	Property	Comp Set	Index	Property	Comp Set	Index	Property	Comp Set	Index
2020	32%	37%	91.9%	$ 164.48	$ 225.00	81.0%	$ 52.31	$ 82.00	74.4%
2019	86%	77%	107.0%	$ 180.72	$ 220.00	88.9%	$ 155.72	$ 169.00	95.1%
2018	86%	77%	106.9%	$ 176.67	$ 213.00	89.5%	$ 152.13	$ 164.00	95.7%
	2020 vs. STLY (2019)			2020 vs. STLY (2019)			2020 vs. STLY (2019)		
2020	-54%	-40%	-15.1%	$ (16.24)	$ 5.00	-7.9%	$ (103.41)	$ (87.00)	-20.7%

Source: Appraisal.

New Supply

Over the past decade, Las Vegas has seen one new delivery, Resorts World Las Vegas (3,200 keys/2.2% of stock). The Drew (3,800 keys/2.6% of stock) is not expected to be delivered until 2025. Resorts World Las Vegas is a 59-story megaresort on the former Stardust Resort and Casino site on the northern Las Vegas Strip and was delivered in June 2021. The appraisal identified additions to the guest room supply that are proposed or under construction, which will place competitive pressure on the subject property. All 720 guest rooms that were identified under this analysis are at Majestic Las Vegas, which is a 45-story resort hotel located at 305 Convention Center Drive. The hotel is expected to open in September 2024 and will feature six restaurants, a pool area, and a live entertainment stage as well as a four-story, 70,000-sf wellness center with fitness and spa facilities.

According to the appraiser's calculation based on the anticipated market mix, service scale, rate structure, and other factors, the new supply at Majestic Las Vegas that will compete directly with the subject includes 468 guest rooms after applying a level of competitiveness to the total supply of 720. The appraiser did not identify any proposed hotels or properties that are currently under development that would be directly competitive with Aria.

Site Inspection

DBRS Morningstar toured the Aria and Vdara properties with members of the management team on the morning and afternoon of Thursday, August 19, 2021. Based the tour, DBRS Morningstar concluded the property quality to be Above Average.

DBRS Morningstar toured various types of room product across both the Aria and Vdara properties. At Aria, MGM was finishing a wide-ranging renovation of its premier Villas product, which are generally reserved for high-roller casino guests and feature extravagant levels of service, including an in-room butler. There are 18 total Villas, with seven of them unavailable as they are being renovated. There is also a private gaming floor exclusively for Villas guests. There are also 294 Sky Suites at Aria, which is another premium room product with a typical ADR of between $750 and $1000. However, on average, 80% of the Sky Suites are reserved and comped for casino guests. The standard room product at Aria was in generally good condition, but exhibited signs of wear in certain instances. The standard rooms have not been overhauled in any meaningful way since Aria opened in 2009, and they are slated for a full multi-million dollar renovation in the near future. Rooms at the all-suite Vdara property were also well kept, but also exhibited dated decor in certain instances. MGM plans to execute a rooms renovation at Vdara in 2025.

The casino floor at Aria was bustling at virtually all hours of the day, which was a positive sign given the ongoing recovery from the pandemic. According to management, weekday occupancy continues to be below historical averages (driven by a lack of group and convention guests), but weekend occupancy has been very strong, with most rooms sold out. December is typically the weakest month at the properties. Aria was running double the casino mix compared with 2019, and a rebound in domestic gamblers is driving the gaming recovery at the property, even absent the international gamblers. The property hosted several big events in May 2021, including a slot tournament and a table tournament.

MGM took advantage of the pandemic-related downtime and was able to execute on select capex projects, including replacing the carpet across all of the meeting and convention space. The former Cirque du Soleil space was converted into a large, flexible convention space in 2018 with impressive success.

With the exception of well-known Mexican restaurant Javier's, the F&B outlets across both properties are primarily operated by MGM pursuant to management agreements with various celebrity chefs. This strategy allows MGM to retain operational control over the establishments while licensing the culinary concepts and benefiting from the brand names. MGM also eliminated the buffet, which had one of the worst operating margins at the property. Some of the F&B establishments have moved to five-day operations, depending on demand.

Overall, DBRS Morningstar found the properties to be in good condition. MGM's future capex plans will help give the standard rooms product an edge, and both properties continue to benefit from their superior central locations and MGM's strong management experience.

Third-Party Reports

As part of its analysis, DBRS Morningstar reviewed the appraisal reports, engineering reports, and environmental reports prepared in connection with the subject financing.

Appraisal

DBRS Morningstar reviewed the appraisal reports prepared by Newmark Knight Frank for the properties. The concluded as-is appraised WholeCo going-concern value of the two properties is $5,800,000,000. The value of the real estate exclusively was concluded to be $3,900,000,000, and the appraiser used a 7.00% terminal cap rate in its analysis for both properties.

Appraisal Summary			
Provider	**Date**	**WholeCo Going-Concern Value**	**Terminal Capitalization Rate**
Newmark Knight Frank	September 23, 2021	$5,800,000,000	7.00%
Real Estate Value	**FF&E Value**	**Insurable Replacement Cost**	**DBRS Morningstar Comments**
$3,900,000,000	$137,171,000	$4,200,000,000 (Aria) $763,000,000 (Vdara)	The mortgage loan represents an 80.8% LTV on the real estate value and a 54.5% LTV on the WholeCo look-through value.

Property Condition Assessments

Bureau Veritas performed property condition assessment (PCA) reports for each of the properties, dated as of September 2021.

Engineering/PCA Summary			
Provider	**Date**	**Immediate Repairs (Y/N)**	**Immediate Repair Costs and Comments**
Bureau Veritas	September 2, 2021	N	0
Recommended Reserves ($/KEY/YR)	**DBRS Morningstar Reserves**		**DBRS Morningstar Comments**
$1,415/key (Aria) $1,465/key (Vdara)	$6,573/key (Aria) $2,154/key (Vdara)		n/a

Environmental Reports

Bureau Veritas performed Phase I environmental site assessments at the Aria and Vdara properties as of June 23, 2021. With respect to the Aria property, the assessment did not identify any recognized environmental conditions (RECs), controlled recognized environmental conditions (CRECs), historically recognized environmental conditions (HRECs), or any other major findings. There is one diesel UST that was installed in 2008, which supplies the CityCenter backup generators. Similarly, no RECs, CRECs, HRECs, or other findings were reported in the assessment performed for the Vdara property.

DBRS Morningstar NCF Analysis

DBRS Morningstar determined its concluded sustainable NCF of the underlying property by applying the *DBRS Morningstar North American Commercial Real Estate Property Analysis Criteria*. DBRS Morningstar typically makes adjustments to the property rental stream to account for vacancies, market rents, other income, reimbursable expenses per the lease terms, and any other relevant items. To estimate the property's normalized revenue stream, the DBRS Morningstar analysis includes a review of lease terms along with historical financial statements (as available), third-party market reports, appraisal data, property condition reports, environmental assessments, seismic (as applicable), and relevant market data, which may include research reports produced by third-party information companies.

DBRS Morningstar's revenue and expense estimates, as well as its analytical approach, are discussed below:

NCF Analysis—Aria

	2016	2017	2018	2019	2020	T-12 August 2021	Issuer NCF	DBRS Morningstar NCF ($)	NCF Variance (%)
Occupancy (%)	92.1	90.6	90.4	90.2	50.0	55.5	90.2	90.2	0.00
ADR ($)	234.80	250.54	260.89	270.65	266.22	237.78	270.65	260.69	-3.68
RevPAR ($)	216.34	227.08	235.97	244.02	133.16	131.86	244.02	235.05	-3.68
Total Departmental Revenue ($)	1,032,957,600	1,098,234,166	1,145,494,394	1,159,791,236	477,004,095	705,438,482	1,159,211,920	1,117,127,122	-3.63
Total Deparmental Expense ($)	541,581,241	537,589,599	575,439,520	579,901,055	263,898,362	299,898,903	579,611,394	558,568,798	-3.63
Total Departmental Profit ($)	**491,376,359**	**560,644,567**	**570,054,874**	**579,890,181**	**213,105,733**	**405,539,579**	**579,600,526**	**558,558,324**	**-3.63**
Total Undistributed Expense ($)	147,438,901	116,307,333	133,286,872	135,988,589	81,948,789	92,226,713	135,920,663	130,986,109	-3.63
Management Fee	37,624,331	39,492,742	41,353,112	42,178,904	13,710,803	25,589,724	42,157,835	40,523,696	-3.88
Total Fixed Expense ($)	16,699,452	16,547,761	16,605,373	18,383,962	22,153,091	24,765,031	23,734,640	24,765,031	4.34
NOI ($)	**289,613,674**	**388,296,731**	**378,809,517**	**383,338,726**	**95,293,049**	**262,958,111**	**377,787,388**	**362,283,489**	**-4.10**
FF&E ($)	0	0	0	0	0	0	17,388,179	26,319,217	51.36
NCF ($)	**289,613,674**	**388,296,731**	**378,809,517**	**383,338,726**	**95,293,049**	**262,958,111**	**360,399,209**	**335,964,272**	**-6.78**

NCF Analysis—Vdara									
	2016	2017	2018	2019	2020	T-12 August 2021	Issuer NCF	DBRS Morningstar NCF ($)	NCF Variance (%)
Occupancy (%)	89.5	88.9	91.6	91.8	50.8	56.0	91.8	90.8	-1.09
ADR ($)	203.33	207.60	208.60	214.86	198.49	186.56	214.86	210.35	-2.10
RevPAR ($)	181.90	184.51	191.08	197.27	100.75	104.55	197.27	190.92	-3.22
Total Departmental Revenue ($)	120,131,846	125,340,123	128,720,291	132,565,443	44,851,641	66,444,709	127,362,931	123,264,404	-3.22
Total Deparmental Expense ($)	55,595,900	58,269,403	61,755,763	62,745,730	24,916,029	27,283,365	60,283,283	58,343,373	-3.22
Total Departmental Profit ($)	**64,535,946**	**67,070,720**	**66,964,528**	**69,819,713**	**19,935,613**	**39,161,344**	**67,079,648**	**64,921,032**	**-3.22**
Total Undistributed Expense ($)	20,511,253	18,045,932	18,833,996	18,473,347	9,943,209	10,737,412	17,748,363	17,177,223	-3.22
Management Fee	4,406,874	4,549,778	4,676,986	4,860,228	1,313,048	2,410,276	4,669,489	4,471,406	-4.24
Total Fixed Expense ($)	5,024,683	4,697,756	4,797,817	5,231,630	5,232,909	5,318,145	4,456,965	5,318,145	19.32
NOI ($)	**34,593,136**	**39,777,254**	**38,655,729**	**41,254,508**	**3,446,447**	**20,695,510**	**40,204,831**	**37,954,258**	**-5.60**
FF&E ($)	0	0	0	0	0	0	1,910,444	2,904,076	52.01
NCF ($)	**34,593,136**	**39,777,254**	**38,655,729**	**41,254,508**	**3,446,447**	**20,695,510**	**38,294,387**	**35,050,181**	**-8.47**

Departmental Revenue – DBRS Morningstar's departmental income line items were concluded to the YE2019 stabilized percentage of total revenue based on a concluded ADR of $260.69 and occupancy of 90.2% for Aria. These figures represented the minimum historical occupancy and a three-year average for ADR. For Vdara, DBRS Morningstar concluded an ADR of $210.35 and an occupancy of 90.8%, which each represent a three-year historical average.

Departmental Expenses – Departmental expense line items for both Aria and Vdara were concluded to the YE2019 stabilized percentage of departmental revenue figures.

Undistributed Expenses – Undistributed expense line items for both Aria and Vdara were concluded to the YE2019 stabilized percentage of total revenue figures.

Management Fee and Fixed Expenses – Management fees for the properties were concluded to the percentage of revenue for the T-12 period ended August 31, 2021. Real estate taxes and insurance were both concluded to the dollar figures for the T-12 period ended August 31, 2021.

FF&E – DBRS Morningstar concluded an aggregate FF&E reserve figure of 2.4% of total revenue. DBRS Morningstar conducted an FF&E analysis to determine, in the context of the properties, a required FF&E spend figure and took into consideration the contractual FF&E spending required by MGM Tenant under the master lease agreement.

DBRS Morningstar Valuation

DBRS Morningstar's concluded WA capitalization rate for the portfolio was 9.32%, which resulted in a value of approximately $3.98 billion, or $744,110 per key.

DBRS Morningstar determined a blended capitalization rate by assigning a different capitalization rate to each of the six primary revenue sources at the properties: hotel rooms revenue, F&B revenue, casino revenue, retail revenue, entertainment revenue, and other revenue. The capitalization rates used for the casino and entertainment components were the highest and exceeded 10%.

The DBRS Morningstar concluded value is approximately 31.3% below the appraiser's concluded WholeCo appraised value of $5.8 billion.

Ratings Rationale

DBRS Morningstar's ratings on BX Trust 2021-ARIA reflect its analysis of the sustainable cash flow and value for the property securing the loan held by the trust; the presence of loan structural features, such as lack of amortization and partial pro rata pay structure (if applicable); and qualitative factors, such as DBRS Morningstar's opinion of the quality of the underlying collateral property, the current and expected performance of the real estate market in which the property is located, and the current and future state of the macroeconomic environment and its potential impact on the performance of commercial properties.

Analytical Metrics

The table below presents DBRS Morningstar's key NCF and valuation metrics compared with the Issuer/arranger's assumptions:

Metric	DBRS Morningstar	Issuer/Arranger
GPR ($)[1]	1,240,391,527	1,286,574,851
Expenses ($)	840,153,780	868,582,633
NOI ($)	400,237,746	417,992,218
Replacement Reserves ($)	29,223,293	19,298,623
NCF ($)	371,014,453	398,693,596
Variance to Arranger NCF (%)	-6.94%	n/a
Capitalization Rate (%)[2]	9.32%	6.87%
Concluded Value/Appraised Value ($)	$3,982,474,850	$5,800,000,000
Value per Key ($)	$744,110	$1,083,707
Whole Loan DSCR on NCF (x)	7.04x	7.63x
Whole Loan-to-Value Ratio (%)[3]	79.10%	54.5%

1. The arranger's capitalization rate is the arranger's underwritten NCF divided by the as-is appraised value.
2. Based on an assumed Libor rate of 0.10% and an assumed spread of 1.155000%. The DBRS Morningstar DSCR shown is the look-through DSCR based on the DBRS Morningstar look-through NCF. The DSCR based on the initial $215,000,000 master rent payment is 4.11x.
3. Based on the WholeCo Appraised Value of approximately $5.8 billion as determined by Newmark Knight Frank as of August 9, 2021, which represents the aggregate fee-simple interest in the properties, exclusively.

DBRS Morningstar LTV Sizing Benchmarks & Adjustments

DBRS Morningstar determined the ratings on each class of certificates by performing quantitative and qualitative collateral, structural, and legal analysis. This analysis incorporates DBRS Morningstar's *North American Single-Asset/Single-Borrower Ratings Methodology* and the DBRS Morningstar LTV Benchmark Sizing tool. DBRS Morningstar determined its concluded sustainable NCF and sustainable value of the underlying properties by applying the *DBRS Morningstar North American Commercial Real Estate Property Analysis Criteria*. DBRS Morningstar's maximum LTV thresholds at each rating category were based on the transaction's sequential-pay waterfall, the underlying property type, lack of amortization (full-term IO), trust LTV, limited property type and geographic diversity, and other factors relevant to the credit analysis. DBRS Morningstar adjusted its maximum LTV thresholds (the Quality/Volatility Adjustment) to account for the following factors:

- **Cash Flow Volatility** – The Aria and Vdara properties are extremely well located along the central portion of the Las Vegas Strip, which results in a critical mass of foot traffic attributable to numerous nearby attractions and properties including Bellagio and Cosmopolitan. Furthermore, the properties are the centerpiece of the 16.7 million-sf mixed-use development known as CityCenter, which includes the high-end Shops at Crystals retail complex, among other attractions. Finally, the Aria Express (formerly known as the CityCenter Tram) monorail system connects the properties via the Shops at Crystals with Bellagio to the north and Park MGM to the south. The master lease structure also insulates certificateholders from the direct exposure to the lodging and casino operating business, which provides enhanced cash flow stability. The transaction also benefits from a guaranty provided by MGM that covers payment and performance of all monetary obligations and certain other obligations of the MGM Tenant under the master lease agreement. However, unlike prior transactions, MGM has not provided a shortfall guaranty for the mortgage loan. While MGM is not an investment grade-rated entity, the firm is well capitalized and had revenues of approximately $12.9 billion and EBITDA of approximately $3 billion in 2019. As a result, DBRS Morningstar elected to raise its maximum LTV threshold by 2.0% to account for cash flow volatility.
- **Property Quality** – The properties both opened in late 2009 and are among the newer properties on the Las Vegas Strip. Furthermore, MGM has invested a significant amount of capital, nearly $700 million, into both properties since 2012 in order to maintain and improve their performance. MGM is planning to spend several hundred million across both properties over the next four years, including a major rooms renovation at Aria. Furthermore, under the terms of the master lease, MGM is required to invest a minimum of 4.0% of actual net revenues per year into the properties throughout the five-year loan term and between 2.5% and 3.0% per year thereafter. As a result, DBRS Morningstar elected to increase its maximum LTV threshold by 2.5% to account for property quality.
- **Market Fundamentals** – The Las Vegas Strip is one of the world's largest gaming and hospitality markets, and it has traditionally exhibited stronger hotel occupancy rates compared with the rest of the U.S. For example, average Las Vegas Strip hotel occupancy in 2019 was 88.9%. Las Vegas hotel ADR remained approximately 2% below the 2007 peak over a decade later just prior to the onset of the pandemic, and the Las Vegas economy continues to diversify away from gaming revenue and toward hotel and entertainment. As a result of these factors, DBRS Morningstar elected to increase its maximum LTV threshold by 2.5% to account for market fundamentals.

- **Revenue Stabilization Penalty** – DBRS Morningstar's NCF and value reflects normalized occupancy assumptions of 90.2% for Aria and 90.8% for Vdara, which are above the 55.5% and 56.0% occupancy rates for the properties, respectively, as of the T-12 period ended August 31, 2021. DBRS Morningstar elected to stabilize the properties and assumed occupancy in line with pre-pandemic performance given the robust recovery trajectory, MGM's extensive experience operating casino and hospitality properties, strong operating history, and superior location in the center of the Las Vegas Strip. DBRS Morningstar accounted for this stabilization risk by applying a penalty to its qualitative adjustments. As a result of this, DBRS Morningstar decreased its LTV thresholds by 1.5%.

Interest-Only Certificates

DBRS Morningstar determined its rating of the IO certificates based on the lowest rating of the applicable reference obligation, which DBRS Morningstar may or may not elect to notch up one rating category, as per its approach to rating IO certificates. Please refer to the DBRS Morningstar methodology *Rating North American CMBS Interest-Only Certificates* on the DBRS Morningstar website, www.dbrsmorningstar.com.

Loan-Level Legal and Structural Features

Security: The mortgage loan is secured by a first-priority deed of trust, security agreement, and assignment of leases, covering the borrower's leased fee interest in the Aria and Vdara properties, including all personal property and FF&E used in the operation of such properties and owned by the borrower. The loan is also secured by certain contract rights of the borrower (including certain of the borrowers' rights relating to the MGM Lease Documents, the Management Agreement (if any), Cash Management Agreement, Lockbox Agreement, Environmental Indemnity Agreement, and all other Mortgage Loan Documents.

Borrower, Sponsor, and Guarantor(s): The borrowers are Ace A PropCo LLC and Ace V PropCo LLC, each a special purpose Delaware limited liability company. The sponsor of the mortgage loan is initially Blackstone Real Estate Partners IX L.P. (BREP IX) and any parallel partnerships or alternative investment vehicles comprising the real estate investment fund commonly known as Blackstone Real Estate Partners IX and any co-investment or managed vehicles controlled by the foregoing entities.

General Loan Terms and Split Loan Structure: The total debt financing is composed of four senior notes in the aggregate amount of $3.15 billion. Generally, all payments made on the senior notes are allocated among the senior notes pro rata and pari passu. All four of the senior notes are expected to be deposited into the trust and support payments on the certificates.

Permitted Subordinate Mezzanine Financing: The borrower has a one-time right to incur future mezzanine debt subject to certain conditions which include, among other things, (1) a maximum LTV no greater than or equal to 80.8%, and (2) a debt yield greater than or equal to 8.60%, with such LTV and debt yield values inclusive of the additional mezzanine debt at the time of closing of the loan. Rating agency confirmation is not required in connection with the incurrence of a future mezzanine loan. The borrower must enter into an intercreditor agreement satisfactory to the lender and the mezzanine loan must be co-terminous with the mortgage loan or extend beyond the maturity date of the mortgage loan. Finally, no mortgage loan EOD can be continuing.

Cash Management: The borrower has established and is required to maintain one or more lockbox accounts into which income from the property will be deposited and is required to direct all tenants to remit all payments due under their respective leases to the lockbox account. The lockbox account is owned by or on behalf of the borrower but controlled by and pledged to the mortgage lender. The funds on deposit in the lockbox account will be directed into an operating account of the borrower as long as there is no trigger period (defined below) or EOD under the mortgage loan continuing. During a trigger period or an EOD under the mortgage loan, all excess cash flow (after payment of all debt service, required reserves, and operating expenses at the property) will be deposited to an excess cash flow reserve account controlled by the lender.

Trigger Period: A cash sweep event will commence if (1) a mortgage loan EOD is continuing, (2) any bankruptcy action is undertaken by any individual borrower or TRS entity, or (3) the debt yield during the initial term or any extension term falls below 6.75% for two consecutive quarters.

Reserves: For so long as the properties are subject to the master lease, there are no ongoing reserves required under the mortgage loan documents. Under the master lease, the Master Tenant will be obligated to make monthly deposits of 1.50% of net revenues at an eligible institution to be used for FF&E and qualifying capital expenditures (the OpCo FF&E Reserve). On the origination date, the MGM Tenant granted the borrower a security interest in the OpCo FF&E Reserve account and the borrower collaterally assigned the borrower's security interest in the OpCo FF&E Reserve account to the mortgage lender. If the property is not subject to the master lease, during a trigger period, the borrower will be required to make various ongoing deposits into a reserve fund as further described in the loan agreement.

Recourse Carveouts: The mortgage loan is nonrecourse to the borrower except for customary carveouts that are recourse to the borrowers and Blackstone Real Estate Partners IX L.P. (the Guarantor). Recourse to the Guarantor for certain bankruptcy events is capped at 10% of the outstanding loan balance. The initial Guarantor will not be subject to a minimum Net Worth or liquidity covenants. The borrowers also have the right at any time without the consent of the mortgage lender to replace the Guarantor with one or more other entities comprising a "Blackstone Fund Entity". Otherwise, the Guarantor is required to maintain a minimum net worth of $500 million, exclusive of the properties.

Prepayment Provisions: The borrower is required to pay a spread maintenance premium prior to the day immediately preceding the Payment Date in October 2022 (the Open Prepayment Date) provided that the Spread Maintenance Premium will be zero with respect to any prepayment made after the Payment Date in October 2022, but on or prior to the Open Prepayment Date. The Mortgage Loan is freely prepayable thereafter subject to certain conditions set forth in the Mortgage Loan Agreement.

Permitted Transfers: Subject and in addition to other permitted transfers and/or requirements for transfers further detailed in the loan documents, the transfer of the property and/or certain controlling equity interests in the borrower is generally permitted so long as (1) no EOD exists under the mortgage loan; (2) the transferee is controlled by an entity that (A) meets certain eligibility requirements in the loan documents including having a net worth of $500,000,000 and (B) the properties continue to be managed by a qualified manager or (C) is otherwise approved by Lender; and (3) satisfaction of customary equity transfer or loan assumption procedures. Rating agency confirmation is not required.

Master Lease: The properties are leased to MGM Lessee III, LLC to perform all operations at the properties through a 30-year NNN master lease, with three 10-year renewal options. As previously described, the master lease features 2.0% escalations for first 15 years. Thereafter, the payment escalates at greater of 2% or CPI, capped at 3%. The Master Tenant must continuously operate the Properties for the Primary Intended Use, except as a result of a Casualty Event or Unavoidable Delay (including a pandemic). Notwithstanding the foregoing, Tenant is permitted to voluntarily cease operations for up to 1 year in any 5 year period, provided certain conditions are satisfied, including no event of default under the lease. Any capital improvement that exceeds a total budgeted cost in excess of $150MM is subject to Borrower's approval and may be subject to approval of Fee Mortgagee and requires that Tenant deliver construction security to the Landlord. Any casualty proceeds are paid to the fee mortgagee or third party depositary. Proceeds will be released to Tenant for restoration if (i) there is no EOD and proceeds are less than $100MM and (ii) if the proceeds are greater than $100 million, if Tenant is required to restore the Facility or if Tenant elects to restore and demonstrates that restoration can be completed within 4 years.

Insurance: The loan agreement requires the borrower to insure the mortgage property and operations at the property with insurance coverage from insurers described in the loan documents. The insurance is required in amounts set forth in the loan documents, subject to certain deductibles and a blanket policy is permitted.

Casualty and/or Condemnation Proceeds: The MGM Lease provides that all proceeds (except business interruption insurance proceeds not allocated to rent expenses, if any, which will be payable to and retained by the Tenant) payable by reason of any property loss or damage to the leased property, or any portion of the leased property, under any property insurance policy will be paid to the Fee Mortgagee or an escrow account reasonably acceptable to the Borrower and the Tenant and made available to the Tenant upon request for the reasonable costs of preservation, stabilization, emergency restoration, business interruption, reconstruction and repair. In the event of a casualty, (i) the Tenant is required to restore such leased property (including any Capital Improvements constructed by or at the direction of Tenant or any MGM Operating Subtenant and Required CapEx) to substantially the same condition as existed immediately before such damage or otherwise in a manner reasonably satisfactory to the Borrower, (ii) such damage will not terminate the MGM Lease and (iii) subject to the terms of the MGM Lease, the Borrower will cause the Fee Mortgagee to make the proceeds of any such insurance available to the Tenant for restoration.

If the casualty event occurs at any Property during the final two years of the then-current Term (after giving effect to any renewal notice that has been delivered) and the Tenant reasonably determines that the cost to restore such damage will exceed 20% of the fair market value of the Properties (taken as a whole) immediately prior to such casualty event, either Borrower or the Tenant may terminate the MGM Lease as to such Property (but not as to the unaffected Property) as of the date of such damage (and all obligations of the Tenant to pay rent and Additional Charges with respect to such Property will cease as of the day before the date of such termination). If so terminated, all proceeds of insurance with respect to such casualty event (except business interruption not allocated to rent expenses which will be payable to and retained by the Tenant) will be paid to the Borrower.

Libor Benchmark Transition: The mortgage loan pays floating-rate interest, initially based on a spread to Libor, which is anticipated to be phased out by the end of 2021. The offering documents include a mechanism for a replacement index and the orderly conversion to such index in the order described below, based on what can be determined by the mortgage lender on the Benchmark Replacement Date (as defined in the offering documents):

1. The sum of: (1) Term SOFR and (2) the Alternate Rate Spread Adjustment.
2. The sum of: (1) Compounded SOFR and (2) the Alternate Rate Spread Adjustment.

If no such rate set forth in clause (1) or (2) above is available or such rate is not generally accepted in the financial markets as an alternate index rate, the sum of: (a) the alternate benchmark rate of interest based on (i) any selection or recommendation of a replacement rate or the mechanism for determining such a rate by the Relevant Governmental Body at such time or (ii) any evolving or then-prevailing market convention for determining a rate of interest as a replacement for the then-current Benchmark for U.S. dollar-denominated stand-alone floating rate CMBS loans with sponsors similar to Blackstone Sponsor and (b) the Alternate Rate Spread Adjustment. Provided that, in the case of clauses (1) and (2) above, such rate, or the underlying rates component thereof, is or are displayed on a screen or other information service that publishes such rate or rates from time to time as selected by the Lender in its reasonable discretion. If the Alternate Index Rate as determined pursuant to clause (1), (2), or (3) above would be less than zero, the Alternate Index Rate shall be deemed to be zero for the purposes of this Agreement.

Transaction Legal and Structural Features

Priority of Payments: On each Distribution Date, funds available for distribution will be distributed in the following amounts and order of priority (in each case to the extent of remaining available funds):

1. Class A, Class X-CP, and Class X-EXT Certificates, pro rata, in each case in accordance with their respective interest entitlements.
2. Class A Certificates: (a) to principal on the Class A Certificates, pro rata, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero, and then (b) to reimburse the Class A Certificates, pro rata, for any previously unreimbursed losses previously allocated to Class A Certificates.

3. Class B Certificates: (a) first, to interest on the Class B Certificates in the amount of their interest entitlement; (b) next, on the Class B Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class B Certificates for any previously unreimbursed losses previously allocated to Class B Certificates.
4. Class C Certificates: (a) first, to interest on the Class C Certificates in the amount of their interest entitlement; (b) next, on the Class C Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class C Certificates for any previously unreimbursed losses previously allocated to Class C Certificates.
5. Class D Certificates: (a) first, to interest on the Class D Certificates in the amount of their interest entitlement; (b) next, on the Class D Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class D Certificates for any previously unreimbursed losses previously allocated to Class D Certificates.
6. Class E Certificates: (a) first, to interest on the Class E Certificates in the amount of their interest entitlement; (b) next, on the Class E Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class E Certificates for any previously unreimbursed losses previously allocated to Class E Certificates.
7. Class F Certificates: (a) first, to interest on the Class F Certificates in the amount of their interest entitlement; (b) next, on the Class F Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class F Certificates for any previously unreimbursed losses previously allocated to Class F Certificates.
8. Class G Certificates: (a) first, to interest on the Class G Certificates in the amount of their interest entitlement; (b) next, on the Class G Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class G Certificates for any previously unreimbursed losses previously allocated to Class G Certificates.
9. Class HRR Certificates: (a) first, to interest on the Class HRR Certificates in the amount of their interest entitlement; (b) next, on the Class HRR Certificates, up to the Principal Distribution Amount for such Class and for such Distribution Date until their Certificate Balance is reduced to zero; and then (c) to reimburse Class HRR Certificates for any previously unreimbursed losses previously allocated to Class HRR Certificates.

Realized Losses: Realized Losses will be allocated to the respective Classes of the Principal Balance Certificates, in Reverse Sequential Order, in each case until the Certificate Balance of the subject Class has been reduced to zero. Reverse Sequential Order means, with respect to the allocation of Realized Losses to the respective Classes of Principal Balance Certificates on any Distribution Date, to the Class HRR, Class G, Class F, Class E, Class D, Class C, Class B, and Class A Certificates, in that order, until such Realized Loss is allocated in full. The Notional Amount of each of the Class X-CP and Class X-EXT

Certificates will be reduced by the aggregate amount of Realized Losses allocated to the Class A, Class A-1, Class B and Class C Certificates.

Risk Retention: This securitization transaction will be subject to the credit risk retention requirements of Regulation RR, 12 C.F.R. Part 244. An economic interest in the credit risk of the trust loan is expected to be retained as an eligible horizontal interest in the form of the Class HRR Certificates. The Retaining Sponsor intends to satisfy the risk retention requirements through the purchase by a currently unidentified entity, as a third-party purchaser of the HRR Certificates. The retaining sponsor intends to satisfy the risk retention requirements through the purchase and retention by a third-party purchaser.

Appraisal Reductions: Following the date on which either (1) the mortgage loan is 60 days delinquent (or 120 days in the case of the balloon payment) or (2) certain other adverse events affecting the mortgage loan as set forth in the Offering Circular have occurred, the Special Servicer will be required to obtain a new appraisal on the property, unless an appraisal was performed within nine months prior to such date and the Special Servicer is has no knowledge of any material change in the market or condition or value of such Property since the date of such prior appraisal. Based on the new appraisals, the amount of delinquent loan interest payments on the Trust Loan thereafter advanced to certificateholders may be reduced, the identity of the controlling class representative may change, and the voting rights of certain classes of Certificates may be reduced.

Control Rights: The controlling class will be as of the date of determination the Class HRR Certificates until the occurrence of a consultation termination event. No other class of Certificates will be eligible to act as the controlling class or appoint a controlling class representative. The controlling class representative will generally be the controlling class certificateholder or representative selected by the holders or beneficial owners of more than 50% of Certificates of the controlling class, by certificate balance, as determined by the certificate registrar from time to time.

Replacement of the Special Servicer: The Special Servicer under the trust and servicing agreement may be removed, with or without cause, and a successor Special Servicer appointed, from time to time, as follows:

- For so long as no Control Termination Event is continuing, the Special Servicer may be replaced by the controlling class representative, with or without cause at any time;
- During any CCR Consultation Period and any CCR Consultation Termination Period, the holders of at least 25% of the voting rights of the principal balance certificates may request a vote to replace the Special Servicer. The subsequent vote may result in the termination and replacement of the Special Servicer if within 180 days of the initial request for that vote the holders of principal balance certificates evidencing (1) at least 51% of the Voting Rights allocable to the applicable certificateholder quorum vote affirmatively to so terminate and replace the Special Servicer or (2) more than 50% of the voting rights allocable to the non-reduced certificates, vote affirmatively to so terminate and replace the Special Servicer;
- At the recommendation of the Operating Advisor if at any time the Operating Advisor determines, in its sole discretion exercised in good faith, that (1) the Special Servicer is not performing its duties as

required under the trust and servicing agreement or is otherwise not acting in accordance with Accepted Servicing Practices, and (2) the replacement of the Special Servicer would be in the best interest of the certificateholders as a collective whole, with the affirmative vote of holders of Sequential Pay Certificates evidencing at least a majority of a quorum of certificateholders (which, for this purpose, is the holders of Certificates that (A) evidence at least 20% of the voting rights (reduced by any appraisal reduction amounts) of all Sequential Pay Certificates on an aggregate basis, and (B) consist of at least three certificateholders or beneficial owners of Certificates that are not affiliated with each other).

Amount of Workout, Liquidation, and Special Servicing Fees: The workout fees and liquidation fees payable to the Special Servicer, if any, will be, in the case of workout fees, equal to 0.15% of each collection of interest and principal (other than default interest) following a workout, and in the case of liquidation fees, equal to 0.25% of any liquidation proceeds, insurance proceeds, and condemnation proceeds. Special servicing fees during the continuance of a special servicing event are 0.15% per annum on the outstanding principal balance of the Mortgage Loan.

Obligation of Borrower to Pay Fees: The borrower will be obligated to pay all liquidation fees, workout fees and special servicing fees (as further described in the Offering Circular). The Special Servicer is required to take reasonable efforts to collect such fees from the borrowers.

Offsetting of Modification Fees: There is a $1 million cap on Modification Fees and annual Special Servicing Fees that the Special Servicer may charge the borrowers and all Modification Fees received by the Special Servicer from the borrowers over the lifetime of the mortgage loan are required to offset any liquidation and workout fees that the Special Servicer could otherwise charge the trust. Modification Fees are fees with respect to a modification, extension, waiver. or amendment that modifies, extends, amends, or waives any term of the loan documents, other than (1) any loan service transaction fees, assumption fees, consent fees, or assumption application fees, and (2) liquidation, workout, and special servicing fees.

Rating Agency Confirmation: Rating agency confirmation may have certain timing restrictions and/or not be required over certain material loan amendments, modifications, borrower requests, and/or material amendments to the loan agreement, the trust and servicing agreement, the mortgage loan purchase agreements, and the co-lender agreement (if any). In addition, rating agency confirmation may be requested and/or notice of such items may be provided to the rating agency after such items are effectuated. Because the rating agency may obtain knowledge of these various items later, surveillance activities and any related rating adjustments may occur later than if rating agency confirmation and/or prior notice of such items was provided.

Methodologies

The following are the methodologies DBRS Morningstar applied to assign ratings to this transaction. These methodologies can be found on www.dbrsmorningstar.com under the heading Methodologies & Criteria. Alternatively, please contact info@dbrsmorningstar.com or contact the primary analysts whose information is listed in this report.

- *North American Single-Asset/Single-Borrower Ratings Methodology*
- *DBRS Morningstar North American Commercial Real Estate Property Analysis Criteria*
- *Rating North American CMBS Interest-Only Certificates*

Surveillance

DBRS Morningstar will perform surveillance subject to the *North American CMBS Surveillance Methodology*.

Notes:
All figures are in U.S. dollars unless otherwise noted.

This report is based on information as of October 6, 2021. Subsequent information may result in material changes to the rating assigned herein and/or the contents of this report.

Glossary

ADR	average daily rate	**MSA**	metropolitan statistical area
ARA	appraisal-reduction amount	**n.a.**	not available
ASER	appraisal subordinate entitlement reduction	**n/a**	not applicable
BOV	broker's opinion of value	**NCF**	net cash flow
CAM	common area maintenance	**NNN**	triple net
capex	capital expenditures	**NOI**	net operating income
CBD	central business district	**NRA**	net rentable area
CBRE	CB Richard Ellis	**NRI**	net rental income
CMBS	commercial mortgage-backed securities	**NR – PIF**	not rated – paid in full
CoStar	CoStar Group, Inc.	**OSAR**	operating statement analysis report
CREFC	CRE Finance Council	**PCR**	property condition report
DPO	discounted payoff	**P&I**	principal and interest
DSCR	debt service coverage ratio	**POD**	probability of default
EGI	effective gross income	**PIP**	property improvement plan
EOD	event of default	**PILOT**	property in lieu of taxes
F&B	food & beverage	**PSA**	pooling and servicing agreement
FF&E	furniture, fixtures and equipment	**psf**	per square foot
FS Hotel	full-service hotel	**R&M**	repairs and maintenance
G&A	general and administrative	**REIT**	real estate investment trust
GLA	gross leasable area	**REO**	real estate owned
GPR	gross potential rent	**RevPAR**	revenue per available room
HVAC	heating, ventilation and air conditioning	**sf**	square foot/square feet
IO	interest only	**STR**	Smith Travel Research
LC	leasing commission	**SPE**	special-purpose entity
LGD	loss severity given default	**TI**	tenant improvement
LOC	letter of credit	**TIC**	tenants in common
LOI	letter of intent	**T-12**	trailing 12 months
LS Hotel	limited-service hotel	**UW**	underwriting
LTC	loan-to-cost	**WA**	weighted average
LTCT	long-term credit tenant	**WAC**	weighted-average coupon
LTV	loan-to-value	**x**	times
MHC	manufactured housing community	**YE**	year end
MTM	month to month	**YTD**	year to date

Definitions

Capital Expenditure (Capex)
Costs incurred in the improvement of a property that will have a life of more than one year.

DBRS Morningstar Refi DSCR
A measure that divides the DBRS Morningstar stabilized NCF by the product of the loan's maturity balance and a stressed refinance debt constant.

DBRS Morningstar Term DSCR
A measure that divides the DBRS Morningstar stabilized NCF by the actual debt service payment

Debt Service Coverage Ratio (DSCR)
A measure of a mortgaged property's ability to cover monthly debt service payments, defined as the ratio of net operating income or net cash flow to the debt service payments.

Effective Gross Income (EGI)
Rental revenue minus vacancies plus miscellaneous income.

Issuer UW
Issuer underwritten from Annex A or servicer reports.

Loan-to-Value (LTV)
The ratio between the principal amount of the mortgage balance, at origination or thereafter, and the most recent appraised value of the underlying real estate collateral, generally from origination.

Net Cash Flow (NCF)
The revenues earned by a property's ongoing operations less the expenses associated with such operations and the capital costs of tenant improvements, leasing commissions and capital expenditures (or reserves). Moreover, NCF is net operating income less tenant improvements, leasing commissions and capital expenditures.

NNN (Triple Net)
A lease that requires the tenant to pay operating expenses such as property taxes, insurance and maintenance, in addition to the rent.

Net Operating Income (NOI)
The revenues earned by a property's ongoing operations less the expenses associated with such operations but before mortgage payments, tenant improvements, replacement reserves and leasing commissions.

Net Rentable Area (NRA)
The area (sf) for which rent can be charged. NRA includes the tenant's premises plus an allocation of the common area directly benefiting the tenant, such as common corridors and restrooms.

Revenue Per Available Room (RevPAR)
A measure that divides revenue by the number of available rooms, not the number of occupied rooms. It is a measure of how well the hotel has been able to fill rooms in the off-season, when demand is low even if rates are also low, and how well it fills the rooms and maximizes the rate in the high season, when there is high demand for hotel rooms.

Tenant Improvements (TIs)
The expense to physically improve the property or space, such as new improvements or remodeling, paid by the borrower.

Weighted Average (WA)
Calculation is weighted by the size of each mortgage in the pool.

Weighted-Average Coupon (WAC)
The average coupon or interest payment on a set of mortgages, weighted by the size of each mortgage in the pool.

About DBRS Morningstar

DBRS Morningstar is a full-service global credit ratings business with approximately 700 employees around the world. We're a market leader in Canada, and in multiple asset classes across the U.S. and Europe.

We rate more than 3,000 issuers and nearly 60,000 securities worldwide, providing independent credit ratings for financial institutions, corporate and sovereign entities, and structured finance products and instruments. Market innovators choose to work with us because of our agility, transparency, and tech-forward approach.

DBRS Morningstar is empowering investor success as the go-to source for independent credit ratings. And we are bringing transparency, responsiveness, and leading-edge technology to the industry.

That's why DBRS Morningstar is the next generation of credit ratings.

Learn more at dbrsmorningstar.com.

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