

Gaming and Lodging

G+L Card Spend Tracker: Overall spend improving, but lodging lags

Industry Overview

Robust sales report for July

Total card spending per household rose +0.7% Y/Y July marking the first month of positive spend since February, per BAC aggregated card data. It's our sense the stronger spend in July was supported by idiosyncratic events including better Fourth of July spending, strong Amazon Prime Day sales, and big box office spend on Barbie-heimer.

Lodging Spend stable (=/-), Airline (+), Leisure (-)

Lodging Card Spend was -4% Y/Y in July, slowing 1pt from June, but roughly in-line with Q2 run-rates. Consistent with our [RevPAR data \(see report\)](#) and commentary from [lodging earnings \(see report\)](#), domestic lodging trends are largely stable across the board, albeit tepid growth rates. Encouragingly, Airline Card Spend in July was +1%, accelerating from both June and Q2 trends, and airline bookings have improved in the [last two weeks \(see Andrew Didora's report\)](#).

Our proxy for leisure spend is comprised of subcategories including Golf, Biking, and Campgrounds among others. Leisure Card Spend slowed in July to -4% Y/Y, decelerating -5pts from June with weaker trends in athletic apparel and fitness clubs. Entertainment Card Spend continues to be an outperformer up 9% Y/Y, accelerating 1pt from the Q2 run rate, with growth supported by Barbie, Oppenheimer, and Taylor Swift.

Las Vegas Spend (+/=), Room Rates (+)

Las Vegas Strip Card Spend improved 3pts to -6% in July Y/Y, but spend has been down MSD%+ since March on challenging comps. Las Vegas Locals spend has been more resilient at flat Y/Y in July, in-line with Q2 run rates and consistent with [earnings commentary \(see report\)](#). Our room rate survey is tracking up +13% Y/Y on a rolling 3-month basis, improving from +8% in Q2. We think the overall demand for Las Vegas is robust reflected through 1) rate growth improving into the day of arrival (see Exhb. 13), and 2) rate growth accelerating into the high compression period in the fall.

Exhibit 1: Bank of America Card Spend Y/Y

Overall consumer spending per household is accelerating in Q3, while lodging spend is steady

Monthly Y/Y	Apr	May	Jun	Q2	Jul	Q3TD	Q/Q Δ
Overall Consumer Spend	-1%	0%	0%	0%	1%	1%	↑
Lodging Card Spend	-5%	-6%	-3%	-4%	-4%	-4%	↔
Airline Card Spend	1%	-3%	-1%	-1%	1%	1%	↑
Leisure Card Spend	-4%	-2%	1%	-2%	-4%	-4%	↓
Monthly vs. 2019	Apr	May	Jun	Q2	Jul	Q3TD	Q/Q Δ
Overall Consumer Spend	24%	23%	23%	23%	23%	23%	↔
Lodging Card Spend	15%	13%	12%	14%	13%	13%	↓
Airline Card Spend	9%	11%	6%	9%	6%	6%	↓

Source: BAC Internal Data

BofA GLOBAL RESEARCH

14 August 2023

Equity
United States
Gaming and Lodging

Shaun C. Kelley
Research Analyst
BofAS
+1 646 855 1005
shaun.kelley@bofa.com

Dany Asad
Research Analyst
BofAS
+1 646 855 5238
dany.asad@bofa.com

See the [BofA economists' latest BofA on USA](#) report for additional color on retail trends during the month and detailed explanation of methodology, disclaimers and limitations relating to BAC card data.

Key Terms:

BAC card data- BAC aggregated credit and debit card data

Entertainment Card Spend: : BAC US aggregated credit and debit card spending for Entertainment

HH- household

Lodging/ Airlines Card Spend: BAC US aggregated credit and debit card spending for lodging/ airlines

RevPAR: Revenue per available room

Leisure Card Spend: BAC US aggregated credit and debit card spending for Leisure

LV Strip Card Spend: Strip zip-code based aggregated BAC credit card brick and mortar retail spend

LV Locals Card Spend: Las Vegas MSA based aggregated BAC credit card

MSA: spending for cardholders with addresses located in the Las Vegas MSA; Zip code-based = spending at merchants located in Las Vegas Strip zip codes only, regardless of cardholders' residency. >100% decline reflects refunds. We advise taking a moving average to decipher the underlying trend. Las Vegas Strip (zip code based) spend includes credit card spending only. MSA and Broader US includes credit and debit card, which captures retail sales + services which are paid with cards. Does not include ACH payments.

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 8 to 9.

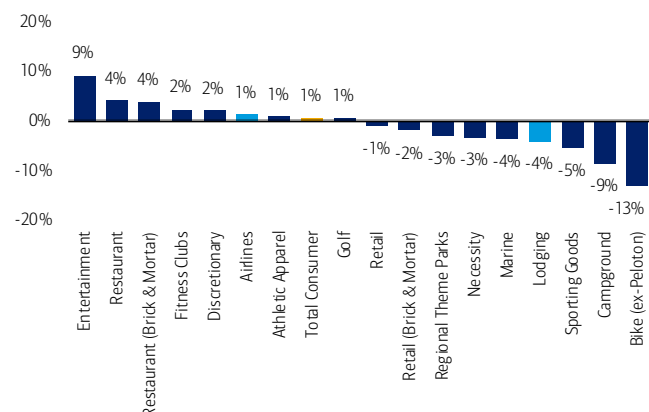
12593011

Timestamp: 14 August 2023 09:46AM EDT

Travel Card Spend

Exhibit 2: Overview of key spending and travel categories- BAC card spend- various categories, Y/Y

Lodging spend is down -4% Y/Y, lagging overall spending trends

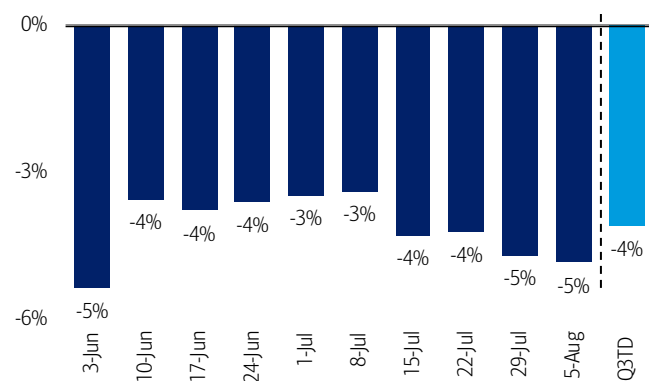


Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Exhibit 4: Weekly Lodging Card Spend Y/Y

Lodging spend was consistently down LSD%+ since June

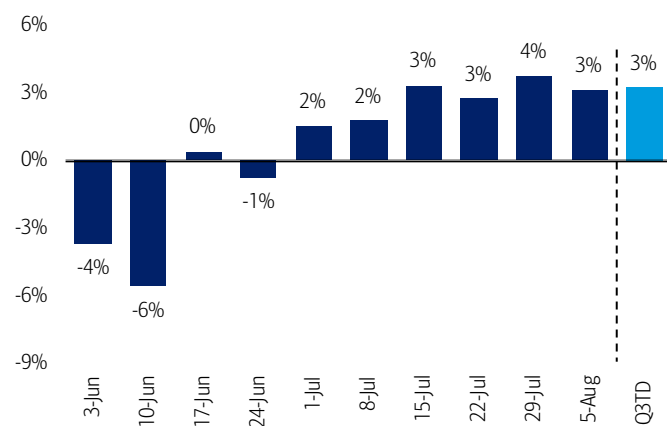


Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Exhibit 6: Weekly Airline Card Spend Y/Y

Weekly airline spend has been steadily improving Y/Y

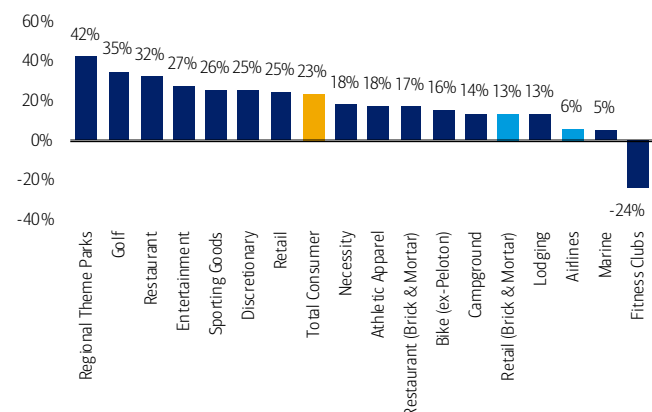


Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Exhibit 3: Aggregated BAC card spend growth of key spending and travel categories vs. 2019

Airlines and Lodging are among the slowest to recover vs. 2019

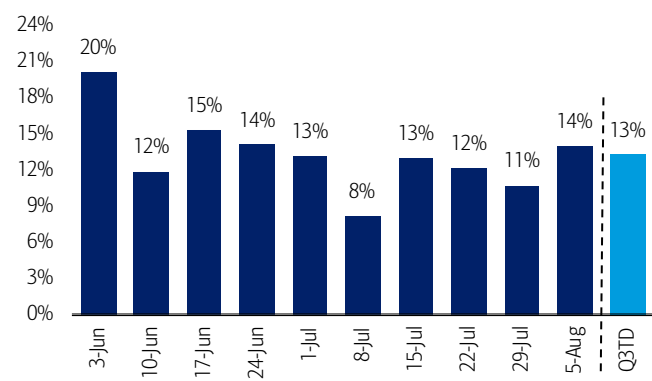


Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Exhibit 5: Weekly Lodging Card Spend vs. 2019

But remains relatively stable vs. 2019, ex-holiday timing shifts

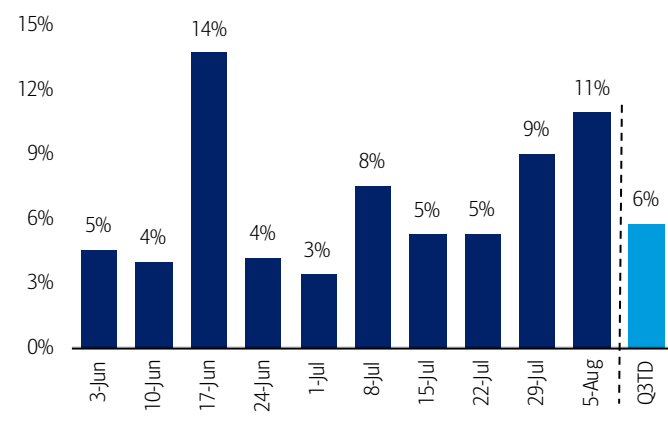


Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Exhibit 7: Weekly Airline Card Spend vs. 2019

And is also improving vs. 2019 in the last two weeks



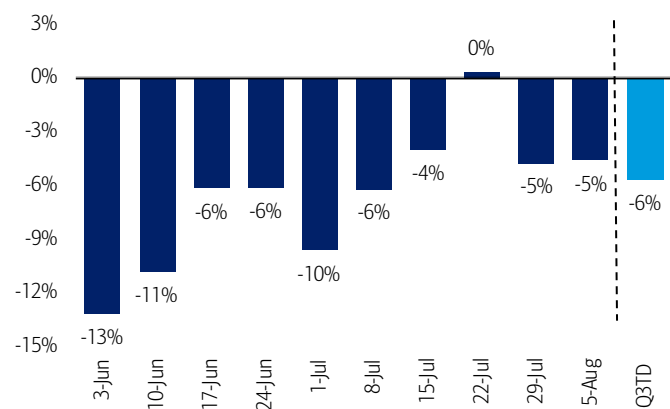
Source: BAC Internal Data

BoFA GLOBAL RESEARCH

Las Vegas

Exhibit 8: Las Vegas Strip Card Spend Y/Y

LV Strip spend has been down Y/Y consistently on tough comps

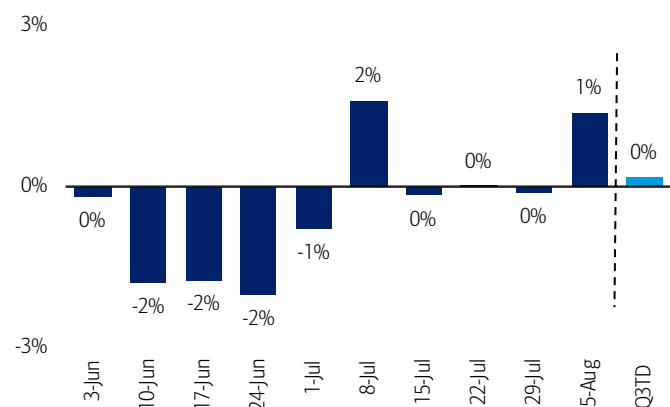


Source: BAC Internal Data

BofA GLOBAL RESEARCH

Exhibit 10: Weekly LV Locals Card Spend Y/Y% change

LV Locals Card Spend has been volatile week over week, but healthy on an aggregated basis

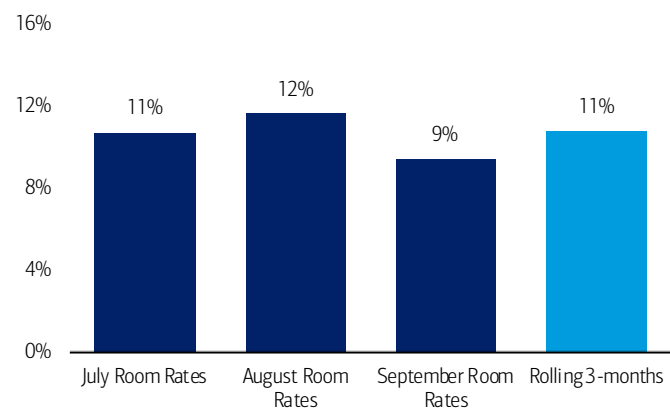


Source: BAC Internal Data

BofA GLOBAL RESEARCH

Exhibit 12: LV Room Rate Survey

On a rolling 3-month basis, room rates are tracking up +11% Y/Y

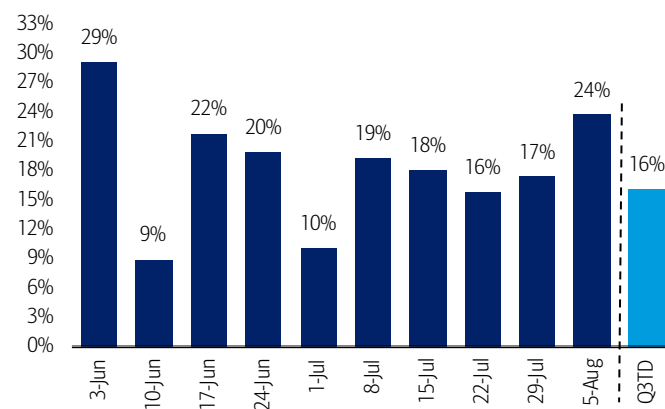


Source: BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 9: Las Vegas Strip Card Spend vs. 2019

But growth vs. 2019 is robust and largely stable

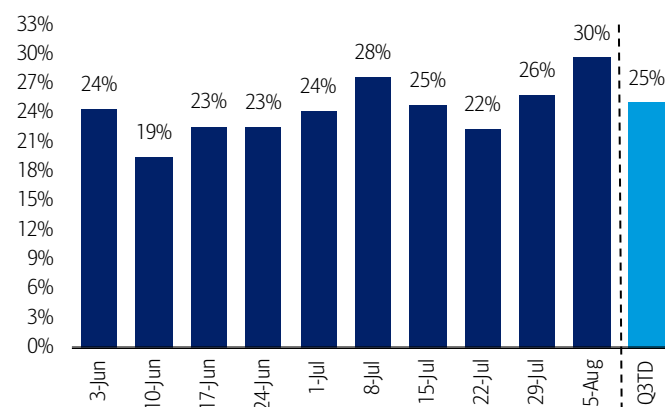


Source: BAC Internal Data

BofA GLOBAL RESEARCH

Exhibit 11: Weekly LV Locals Card Spend vs. 2019 % change

LV Locals Card Spend is tracking up +25% vs. 2019 in Q3, outpacing LV Strip Card Spend

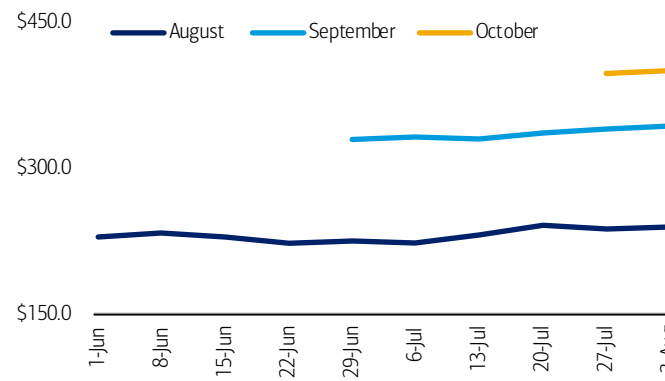


Source: BAC Internal Data

BofA GLOBAL RESEARCH

Exhibit 13: LV Room Rate Survey Absolute \$

Room rates are steady/improving into day of arrival, and seasonally rates are improving into the fall



Source: BofA Global Research

BofA GLOBAL RESEARCH



Exhibit 14: Weekly BAC aggregated card spending by category Y/Y

Overview of key spending and travel categories

	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug
BAC U.S. Credit and Debit Card Spending*															
Total Consumer	-1%	-1%	1%	-1%	0%	0%	-1%	-1%	-2%	0%	2%	1%	1%	0%	2%
Lodging	-7%	-4%	-3%	-7%	-3%	-5%	-4%	-4%	-4%	-3%	-3%	-4%	-4%	-5%	-5%
Airlines	1%	1%	-3%	-3%	-4%	-4%	-6%	0%	-1%	2%	2%	3%	3%	4%	3%
Entertainment	9%	6%	4%	5%	12%	9%	14%	0%	5%	-1%	0%	5%	13%	24%	18%
Leisure	-5%	-3%	1%	-8%	1%	0%	5%	1%	-9%	-6%	1%	-4%	-4%	-4%	-4%
Services	1%	1%	0%	-1%	3%	0%	1%	-1%	0%	0%	2%	0%	0%	3%	3%
Goods	-3%	-4%	0%	-4%	-2%	-1%	3%	1%	-7%	-3%	1%	-1%	0%	-2%	-2%

Las Vegas**BAC Card Spending***

LV Strip Overall Credit Card	-12%	-15%	-10%	-11%	-8%	-13%	-11%	-6%	-6%	-10%	-6%	-4%	0%	-5%	-5%
LV Locals Credit & Debit Spend	-1%	-2%	-1%	-1%	-1%	0%	-2%	-2%	-2%	-1%	2%	0%	0%	0%	1%

Proprietary Room Rate Survey

Rolling 3-months	9%	7%	8%	10%	10%	13%	12%	10%	10%	10%	12%	15%	13%	14%
May Room Rates	1%	1%	-2%											
June Room Rates	18%	12%	13%	9%	5%									
July Room Rates	7%	8%	12%	11%	11%	11%	10%	10%	11%	11%	11%	13%		
August Room Rates					13%	15%	13%	10%	11%	10%	14%	19%	17%	18%
September Room Rates									9%	10%	9%	11%	13%	14%
October Room Rates													10%	11%

Source: BAC Internal Data

Note: MSA = spending for cardholders with addresses located in the Las Vegas MSA; Zip code-based = spending at merchants located in Las Vegas Strip zip codes only, regardless of cardholders' residency. >100% decline reflects refunds. We advise taking a moving average to decipher the underlying trend. Las Vegas Strip (zip code based) spend includes credit card spending only. MSA and Broader US includes credit and debit card, which captures retail sales + services which are paid with cards. Does not include ACH payments

BoFA GLOBAL RESEARCH

Exhibit 15: Monthly BAC aggregated card spending by category Y/Y

Overview of key spending and travel categories

	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23
BAC U.S. Credit and Debit Card Spending*														
Total Consumer	4%	5%	9%	4%	2%	1%	2%	6%	3%	0.0%	-1%	0%	0%	1%
Lodging	12%	10%	12%	13%	3%	1%	3%	9%	0%	-3%	-5%	-6%	-3%	-4%
Airlines	21%	19%	53%	47%	24%	12%	25%	54%	22%	3%	1%	-2%	-2%	3%
Entertainment	17%	18%	27%	15%	3%	12%	6%	37%	19%	10%	13%	6%	7%	9%
Leisure (Open for Add'l Categories)	-3%	2%	8%	-1%	-2%	-3%	-3%	3%	-3%	-7%	-4%	-2%	1%	-4%
Services	6%	8%	18%	12%	6%	3%	7%	20%	7%	3%	1%	0%	2%	1%
Goods	1%	4%	7%	2%	0%	0%	1%	2%	0%	-3%	-3%	-3%	0%	-1%

Las Vegas

LV Strip Overall Credit Card	1%	-6%	5%	1%	-6%	-7%	4%	18%	3%	-5%	-11%	-11%	-9%	-6%
LV Locals Credit & Debit Spend	3%	4%	4%	3%	3%	2%	0%	4%	1%	-2%	-2%	-1%	-1%	0%
Proprietary Room Rate Survey														
Rolling 3-months	-2%	5%	17%	27%	32%	34%	27%	28%	24%	12%	4%	10%	11%	13%
May Room Rates									5%	-2%	-1%			
June Room Rates										4%	9%	10%		
July Room Rates											6%	11%	11%	12%
August Room Rates												14%	12%	17%
September Room Rates													9%	12%
October room rates														10%

Source: BAC Internal Data

Note: MSA = spending for cardholders with addresses located in the Las Vegas MSA; Zip code-based = spending at merchants located in Las Vegas Strip zip codes only, regardless of cardholders' residency. >100% decline reflects refunds. We advise taking a moving average to decipher the underlying trend. Las Vegas Strip (zip code based) spend includes credit card spending only. MSA and Broader US includes credit and debit card, which captures retail sales + services which are paid with cards. Does not include ACH payments

BoFA GLOBAL RESEARCH



Exhibit 16: Weekly BAC aggregated card spending vs. 2019

Overview of key spending and travel categories

	29-Apr	6-May	13-May	20-May	27-May	3-Jun	10-Jun	17-Jun	24-Jun	1-Jul	8-Jul	15-Jul	22-Jul	29-Jul	5-Aug
<u>BAC U.S. Credit and Debit Card Spending*</u>															
Total Consumer	24%	24%	23%	23%	26%	23%	22%	22%	23%	22%	26%	23%	22%	25%	28%
Discretionary	26%	28%	25%	25%	29%	26%	24%	24%	24%	24%	29%	26%	24%	27%	30%
Necessity	18%	15%	17%	16%	18%	15%	16%	17%	19%	17%	17%	15%	18%	19%	20%
Retail	24%	21%	23%	24%	23%	23%	22%	22%	25%	22%	23%	25%	23%	25%	25%
Restaurant	31%	30%	25%	36%	28%	35%	27%	25%	34%	27%	33%	29%	30%	30%	31%
Lodging	13%	13%	14%	12%	14%	20%	12%	15%	14%	13%	8%	13%	12%	11%	14%
Airlines	13%	10%	9%	7%	13%	5%	4%	14%	4%	3%	8%	5%	5%	9%	11%
Entertainment	-11%	6%	18%	29%	14%	35%	21%	31%	17%	12%	14%	26%	25%	39%	34%
Leisure	18%	23%	32%	20%	13%	38%	26%	20%	21%	14%	18%	12%	16%	16%	18%
Services	12%	17%	20%	19%	14%	27%	14%	17%	17%	13%	15%	13%	15%	17%	18%
Goods	22%	20%	23%	22%	19%	28%	27%	24%	25%	19%	21%	22%	21%	24%	24%
<u>Las Vegas</u>															
<u>BAC Card Spending*</u>															
LV Strip Overall Credit Card	14%	11%	18%	12%	5%	29%	9%	22%	20%	10%	19%	18%	16%	17%	24%
LV Locals Credit & Debit Spend	26%	26%	20%	24%	27%	24%	19%	23%	23%	24%	28%	25%	22%	26%	30%
<u>Proprietary Room Rate Survey</u>															
Rolling 3-months	27%	25%	25%	27%	25%	26%	22%	20%	31%	31%	33%	36%	58%	60%	
May Room Rates	21%	20%	17%												
June Room Rates	46%	40%	41%	35%	30%	32%									
July Room Rates	13%	15%	18%	18%	17%	18%	17%	17%	17%	18%	18%	20%			
August Room Rates					27%	28%	27%	23%	24%	23%	28%	33%	31%	32%	
September Room Rates									52%	53%	52%	55%	57%	58%	
October Room Rates													87%	88%	

Source: BAC Internal Data

Note: MSA = spending for cardholders with addresses located in the Las Vegas MSA; Zip code-based = spending at merchants located in Las Vegas Strip zip codes only, regardless of cardholders' residency. >100% decline reflects refunds. We advise taking a moving average to decipher the underlying trend. Las Vegas Strip (zip code based) spend includes credit card spending only. MSA and Broader US includes credit and debit card, which captures retail sales + services which are paid with cards. Does not include ACH payments

BoFA GLOBAL RESEARCH

Exhibit 17: Monthly BAC aggregated card spending vs. 2019

Overview of key spending and travel categories

	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23
<u>BAC U.S. Credit and Debit Card Spending*</u>														
Total Consumer	23%	23%	23%	24%	23%	24%	20%	28%	27%	14%	24%	23%	23%	23%
Discretionary	23%	23%	25%	25%	25%	27%	21%	30%	30%	17%	26%	27%	25%	25%
Necessity	23%	22%	17%	21%	19%	17%	17%	21%	20%	8%	18%	15%	17%	18%
Retail	26%	26%	22%	27%	24%	24%	21%	29%	26%	14%	24%	21%	23%	25%
Restaurant	24%	27%	21%	30%	26%	24%	24%	38%	33%	19%	34%	25%	30%	32%
Lodging	16%	18%	12%	15%	12%	9%	26%	24%	24%	8%	15%	13%	12%	13%
Airlines	9%	2%	8%	5%	9%	11%	4%	16%	18%	5%	9%	11%	6%	6%
Entertainment	13%	17%	10%	15%	12%	16%	0%	23%	27%	5%	19%	17%	21%	27%
Leisure	21%	21%	20%	29%	30%	31%	16%	34%	36%	24%	23%	25%	20%	17%
Services	13%	15%	12%	20%	19%	18%	10%	28%	27%	8%	20%	16%	15%	16%
Goods	26%	25%	21%	27%	24%	23%	19%	28%	24%	11%	24%	19%	25%	23%
<u>Las Vegas</u>														
LV Strip Overall Credit Card	30%	23%	29%	23%	21%	30%	17%	21%	25%	24%	22%	13%	18%	16%
LV Locals Credit & Debit Spend	24%	25%	25%	27%	27%	26%	20%	26%	26%	22%	23%	24%	23%	25%
Rolling 3-months	16%	27%	46%	53%	41%	45%	36%	51%	42%	31%	24%	26%	27%	47%
May Room Rates									26%	17%	19%	19%		
June Room Rates										29%		35%	36%	
July Room Rates											12%	17%	17%	19%
August Room Rates												28%	25%	31%
September Room Rates													52%	56%
October Room Rates														87%

Source: BAC Internal Data

Note: MSA = spending for cardholders with addresses located in the Las Vegas MSA; Zip code-based = spending at merchants located in Las Vegas Strip zip codes only, regardless of cardholders' residency. >100% decline reflects refunds. We advise taking a moving average to decipher the underlying trend. Las Vegas Strip (zip code based) spend includes credit card spending only. MSA and Broader US includes credit and debit card, which captures retail sales + services which are paid with cards. Does not include ACH payments



Exhibit 17: Monthly BAC aggregated card spending vs. 2019
Overview of key spending and travel categories

Jun-22 Jul-22 Aug-22 Sep-22 Oct-22 Nov-22 Dec-22 Jan-23 Feb-23 Mar-23 Apr-23 May-23 Jun-23 Jul-23

BofA GLOBAL RESEARCH



Methodology explained

Readers should be aware that although the BAC datasets utilized in our analysis represent a significant number of data points, they nevertheless present a degree of selection bias, including but not limited to income levels and geographies. In addition, the data is limited to debit and credit cards and does not include other payment methods such as cash or checks.

Data regarding merchants who receive payments are identified and classified by the Merchant Categorization Code (MCC) defined by financial services companies. The data are mapped using proprietary methods from the MCCs to the North American Industry Classification System (NAICS), which is also used by the Census Bureau, in order to classify spending data by subsector. Spending data June also be classified by other proprietary methods not using MCCs.

BAC data used in this report include spending from active US households (HHs) only. Spending from corporate cards are excluded.

Our methodology for calculating the growth rates for daily data: we calculate the %y/y growth rate and the 4-year % change by matching calendar days (Jan 1 2023 is matched to Jan 1 2022, and Jan 1, 2019, respectively). The % change is calculated based on the 7-day moving average of spending levels. Unless otherwise noted, the monthly subsector data are adjusted to control for seasonality and other factors.



Disclosures

Important Disclosures

BofA Global Research personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.

Other Important Disclosures

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for any recommendation in relation to an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report and in relation to a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including BofA Securities trading desks.

The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.

Officers of BofA or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.

Refer to [BofA Global Research policies relating to conflicts of interest](#).

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Securities" is a global brand for BofA Global Research.

Information relating to Non-US affiliates of BofA Securities and Distribution of Affiliate Research Reports:

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF). BofA Securities Europe SA ("BofASE") with registered address at 51, rue La Boétie, 75008 Paris is registered under no. 842 602 690 RCS Paris. In accordance with the provisions of French Code Monétaire et Financier (Monetary and Financial Code), BofASE is an établissement de crédit et d'investissement (credit and investment institution) that is authorised and supervised by the European Central Bank and the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers. BofASE's share capital can be found at www.bofam.com/BofASEdisclaimer; BofA Europe (Milan): Bank of America Europe Designated Activity Company, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); BofA Europe (Frankfurt): Bank of America Europe Designated Activity Company, Frankfurt Branch regulated by BaFin, the ECB and the CBI; BofA Europe (Madrid): Bank of America Europe Designated Activity Company, Sucursal en España, regulated by the Bank of Spain, the ECB and the CBI; Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSCF); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; BofAS Japan: BofA Securities Japan Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; BofAS India: BofA Securities India Limited, regulated by the Securities and Exchange Board of India (SEBI); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Brazil): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.

This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by BofAS Japan, a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSCF; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by BofAS India; and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distributes this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of Bank of America N.A., Australia Branch, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. BofA Europe (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities entities, including BofA Europe and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Securities group. You may be contacted by a different BofA Securities entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please refer to the [Electronic Communications Disclaimers](#) for further information.

This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information. For clients that are not accredited investors, expert investors or institutional investors Merrill Lynch (Singapore) Pte Ltd accepts full responsibility for the contents of this information distributed to such clients in Singapore.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Securities. This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives,



financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Securities, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. Digital assets are extremely speculative, volatile and are largely unregulated. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

This report may contain a short-term trading idea or recommendation, which highlights a specific near-term catalyst or event impacting the issuer or the market that is anticipated to have a short-term price impact on the equity securities of the issuer. Short-term trading ideas and recommendations are different from and do not affect a stock's fundamental equity rating, which reflects both a longer term total return expectation and attractiveness for investment relative to other stocks within its Coverage Cluster. Short-term trading ideas and recommendations may be more or less positive than a stock's fundamental equity rating.

BofA Securities is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned herein. Investors in such securities and instruments, including ADRs, effectively assume currency risk.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Securities, through business units other than BofA Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Securities is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS). If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright and General Information:

Copyright 2023 Bank of America Corporation. All rights reserved. iQdatabase® is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Global Research personnel's knowledge of legal proceedings in which any BofA Securities entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Securities in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS or any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Securities and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Securities is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Securities. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Securities is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.