COMPANY ANALYSIS
MARRIOTT INTERNATIONAL, INC. (NASDAQ: MAR)

Yale SCHOOL OF MANAGEMENT

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See important disclaimer at the end of this report.

Some Reservations: Global Expansion and Innovation Fuel Moderate Performance Despite Cross-Industry Competition and Declining Economic Environment

We value Marriott International's equity (NASDAQ: MAR; hereafter "Marriott") at **$38,321m**, or **6% below** its **$40,643m market cap**. We recommend a **hold** position as 6% is in the reasonable threshold (+/-10%).

We believe Marriott will continue delivering a **moderate performance** despite downward macroeconomic pressures. Marriott's primary revenue drivers—**consumer confidence** and **GDP growth**—have declined, with future GDP growth expected to be flat. Marriott's **fee structure**, **global expansion**, and **innovation** (e.g., its Bonvoy loyalty program, green initiatives, and brands) will mitigate these pressures.

Marriott's cost structure will ensure **ongoing cost stability**. For the 97% of Marriott hotels that are managed, franchised, and/or licensed, Marriott is fully reimbursed by owners for costs. Thus, trade tariffs are not expected to materially impact Marriott's costs, though they could erode consumer and business confidence and travel budgets. However, Marriott has stated that **a recession could necessitate further cost-cutting.**

Risk Factors:

If **GDP growth rates** and/or **consumer sentiment** decline more than expected, Marriott profits may suffer. Global trade and politics could also impact travel.

Marriott President and CEO Arne Sorenson, who was diagnosed with Stage 2 pancreatic cancer in early 2019, reports "optimism" about his health despite chemotherapy side effects and reduced work schedule.

Home-sharing platforms remain a threat. It remains to be seen to what extent Marriott's home-sharing brand, Homes & Villas, and newly integrated loyalty program, Marriott Bonvoy, will mitigate the risk.

Marriott continues to divert resources to the **integration of Starwood Hotels (acquired in 2018 for $13b)** and associated **data breach**, for which Marriott booked a $126m charge in Q2 2019. If this does not conclude in a timely manner, other projects may be at risk.

Key Figures

Date: October 1, 2019
Current Market Equity Value ($m): 40,643
Shares Out. (mm): 329.36
Day Close Price ($/share): 123.40
52 Week High/Low: 143.96/100.99
Company WACC: 7.7%

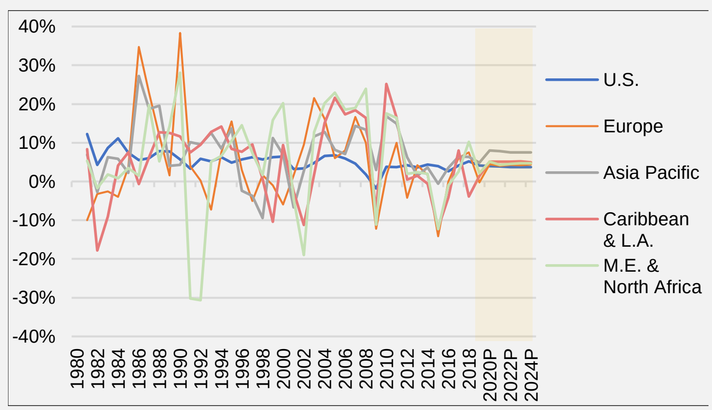
Equity Valuation (mm): $38,321 ($116.35/share)
[probability weighted by baseline (50%), upside (15%), and downside (35%) scenarios]
Equity Valuation / Mkt Cap = 94%

Baseline Case: Equity Valuation / Mkt Cap = 96%
Upside Case: Equity Valuation / Mkt Cap = 108%
Downside Case: Equity Valuation / Mkt Cap = 86%

Upside Case: We see potential in Marriott's globalization, marketing innovations, and nascent home-sharing brand, Homes & Villas. Higher growth rates in emerging markets will spur revenue growth while new product offerings and brands increase market share. Greater than forecasted GDP growth will support the upside case.

Downside Case: A greater than predicted drop in GDP growth, EBIT margins, and/or consumer sentiment support the downside scenario. Marriott can circumvent these risks by doubling down on its emerging market expansion (particularly Asia) and Homes & Villas. If a recession hits, Marriott should be prepared to cost-cut.

Nominal GDP Growth Through 2024



Estimated Marriott Revenue Composition by Region

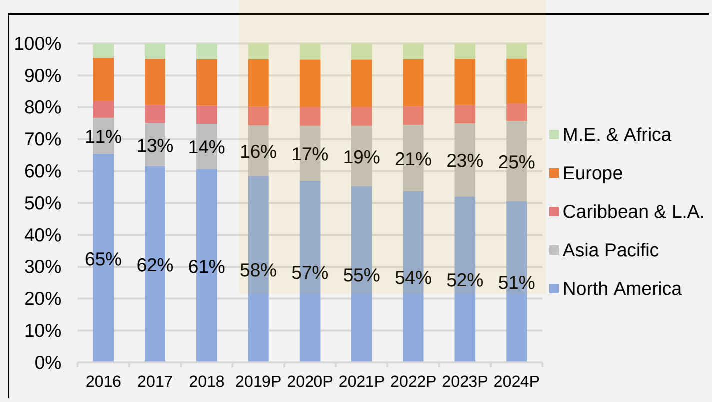


Table of Contents

1. INTRODUCTION

A. Investment Thesis

Based on our discounted cash flow analysis using a horizon through 2024, Marriott International (hereafter, “Marriott”) has a market capitalization of $40,643m, 4% above its equity value of $39,036m (10/1/19). This falls within the reasonable threshold of +/- 10%. **Therefore, we recommend holding rather than buying at this time.**

B. Marriott Background

Founded in 1927 by John Willard and Alice Sheets Marriott, Marriott is the world’s largest hotel company, with 176 thousand employees[1] and 7 thousand properties under 30 brands across 132 countries and territories.[2] Marriott is headquartered in Bethseda, Maryland, where 23-year Marriott veteran Arne Sorenson, the third CEO and first non-Marriott family member to lead the company, runs global operations.

C. Starwood Hotels Integration Update

Seeking an expanded global footprint and $250m per year in synergies, Marriott acquired Starwood Hotels in 2016 for $13b, securing its number one spot in the industry. While the Starwood integration was mostly complete by the end of 2018, some residual steps remained, such as the recovery from a 2018 data breach that originated with Starwood pre-merger and allegedly affected around 383m customers. Although Marriott phased out the Starwood database by year-end 2018, it is still in litigation. Marriott booked a $126m expense in Q2 2019 related to breach, which we assume is baked into the share price.[3]

2. INDUSTRY ANALYSIS

A. Industry Considerations

Certain key characteristics and trends define the hotel industry in which Marriott operates:

- **Industry cyclicality follows the overall economy**.[4] The 2008 financial crisis diminished industry growth, which recovered over the subsequent decade. With GDP growth declining and projected to flatten, Marriott revenue growth will follow suit.

- **Industry focus is shifting to emerging markets*.*** North American and Western European markets are mature, whereas emerging markets are increasing their global market share. Marriott remains heavily focused on emerging market penetration, primarily in the Asia-Pacific region. (See Revenue Composition graph on cover page.)

- **Industry leaders use an asset-light operating structure.** Major hotel companies contract with property owners who pay franchising, licensing, or management fees to use the firm’s

[1] Marriott International, Form 10-K, 2019, p. 9.
[2] Corporate Profile, Marriott International. https://marriott.gcs-web.com/static-files/2998905e-1822-46ee-b3a8-60dda7f790f6
[3] Armental, Maria. “Marriott Takes $126 Million Charge Related to Data Breach.” Wall Street Journal. August 5, 2019.
[4] Hyatt Hotels Corporation, Form 10-K, p. 20.

brand, marketing programs, and/or management expertise[5]. Per **Figure 4**, Marriott utilizes this structure; it owns/leases only 1% of its properties and franchises, licenses, or manages the rest.

- **Industry concentration is growing.** In 2018, 71% of U.S. hotel rooms were brand-affiliated, suggesting some industry concentration. Marriott has about a 15% share of the U.S. market. Concentration and branding are lower and less prevalent abroad, but will increase as industry leaders such as Marriott expand their global footprint.[6]

  Industry consolidation is increasing for the following three reasons:

  - **Mergers and acquisitions.** Industry firms are purchasing and merging with each other and their brands. For example, from 2014 to 2018, Wyndham Hotels and Resorts (NYSE: WH) acquired Dolce Hotels and Resorts, Fen Hotels, AmericInn, and LaQuinta Holdings.[7] Marriott has followed this trend (e.g., 2016 Starwood acquisition).

  - **New brands.** Companies are launching brands targeting new market segments (e.g., millennials). For example, in 2018, Hilton created Motto, an "urban affordable brand that combines the best elements of micro-hotels and urban lifestyle products". In 2019, Marriott launched its new Homes & Villas brand, entering the home-sharing market.

  - **Loyalty programs.** Companies steer guests to their brands through loyalty programs, which allow guests to collect and redeem points for room nights. Hilton Honors, Wyndham Rewards, and World of Hyatt are notable examples. In February 2019, Marriott deployed its Marriott Bonvoy program, integrating the Marriott Rewards, Ritz-Carlton Rewards, and Starwood Preferred Guest programs[8]. On October 2, 2019, Marriott Bonvoy launched a new Eat Around Town program allowing members to earn points at 11+ thousand restaurants.[9]

- **The pressure to innovate and differentiate is increasing.** Hotel room commoditization is motivating the industry to explore differentiated offerings like well-being, home-sharing, and green initiatives[10]. For example, in August 2019, Marriott announced it would stop using single-use plastic toiletry bottles, saving 500m bottles and 1.7m pounds of plastic.[11]

- **Leisure travel outweighs business travel.** IBISWorld (2019) estimates that business travelers comprise ~25% of industry revenue (**Figure 1**, next page). This data is supported by our regression analysis showing that Marriott's revenues are driven by consumer sentiment more than by business sentiment (see **Figure 13** for regression results).

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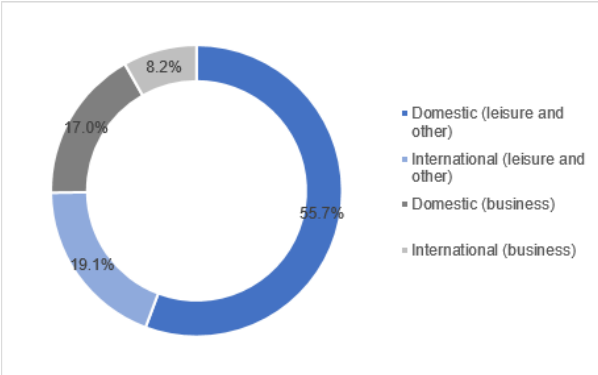
[5] "Balancing act in the hotel industry: 'asset light' to 'asset-right'." Hotel Management International. July 11, 2018.
[6] Marriott International, Form 10-K, p. 9.
[7] Wyndham Hotels and Resorts, Form 10-K, 2019, p. 33.
[8] "Marriott International Announces Marriott Bonvoy – The New Name of Its Loyalty Program," Marriott International News Center, January 16, 2019.
[9] Marriott News Center: Eat, Drink And Be Rewarded! Marriott Bonvoy Launches New "Eat Around Town" Program, Allowing Members To Earn Points At Their Favorite Restaurants," October 2, 2019.
[10] "Marriott International to Eliminate Single-Use Shower Toiletry Bottles from Properties Worldwide, Expanding Successful 2018 Initiative," Marriott International News Center, August 28, 2019.
[11] Jeremy Hobson & Allison Hagan. "Marriott CEO Says Cutting Out Single-Use Toiletries Will Save 500 Million Plastic Bottles Per Year." WBUR. Sept. 23, 2019.

Figure 1: Spending in the Global Hotel and Motels Industry



Source: IBISWorld: Global Hotels & Resorts, July 2019, p. 17

B. Competitive Landscape

Porter's Five Forces analysis is used to arrive at a terminal growth rate for DCF analysis. **Figure 2** reveals that the industry is quite competitive, so we set the terminal growth rate (nominal) at 3.00%, materially below long-term nominal GDP growth rates for U.S. and the regions in which Marriott operates (see Section 4.F).

Figure 2: Porter's Five Forces Analysis of the Hotel Industry

	Low	Medium	High
Rivalry			X
Substitutes			X
New Entrants		X	
Buyer Power	X		
Supplier Power		X	

i. Rivalry Within Industry: High

Although 71% of U.S. hotels are brand-affiliated, rivalry remains **robust in the U.S.**, where Marriott has ~15% market share[12]. Marriott's **key competitors** include the Hilton, Wyndham, and Hyatt. However, Marriott has a sizeable $1,533m and $13,028m lead over its largest U.S. rival, Hilton (NYSE: HLT), in terms of total revenue and market cap (LTM), respectively.[13] Industry rivalry is **higher outside the U.S.**, where hoteliers are likelier to be independent, and Marriott has only ~3% market share. Worldwide, **online travel agents** fuel industry rivalry by allowing guests to compare hotel options (particularly prices) and book rooms.

We expect **Marriott's efforts** to retain its top spot to be effective, though rivalry will stay high:

- Marriott is continuing its **global expansion**, especially in the Asia-Pacific region, planning to reach a thousand hotels in Asia by the end of 2020. Marriott also announced plans to add 40 properties and 8+ thousand rooms in Africa by end of 2023 (*We therefore also adjusted the percentage of revenue among international properties coming for the Middle East and Africa up five percentage points in our model)*.[14]

[12] Marriott International, 2018 Form 10-K, p. 9.
[13] Historical data from Capital IQ, accessed October 4, 2019.
[14] Marriott, "Marriott International Expects to add 40 new properties across Africa by 2023," September 23, 2019.

- In April 2019, Marriott re-negotiated its agreement with online travel agent **Expedia**, which receives 750m visitors monthly, giving Marriott greater control over its online booking channels. Further, having Expedia as its exclusive optimized wholesale distributor will give Marriott an advantage over its rivals when the deal takes effect on October 15, 2019[15].
- Marriott is differentiating itself via **green initiatives**, such as discontinuing its use of plastic straws in 2018 and its use of single-use plastic toiletry bottles last month.

ii. Threat of Substitutes: High

Home-sharing

Home-sharing poses a threat to the industry. With over 7 million cumulative listings (compared to Marriott's 1.3m total rooms) in over 100 thousand cities,[16] Airbnb grew by over 1 million listings from July 1, 2018, to May 15, 2019.[17] Dogru et al. (2019) established a **negative relationship** between the supply of active cumulative Airbnb listings of entire homes and hotel RevPAR, ADR, and occupancy across all hotel segments (low, middle, and high-end). A 1% increase in Airbnb supply generates a 0.02%, 0.01%, and 0.01% reduction in RevPAR, ADR, and occupancy, which is significant given Airbnb's total listings.

Marriott CEO Arne Sorenson stated during Marriott's 2Q 2019 earnings call that home-sharing "is here to stay"[18] and that Marriott clients have tried Airbnb but consider it a "crapshoot". He claimed clients want loyalty linkage, but Airbnb guests can collect Delta Skymiles for stays, though they cannot redeem them through Airbnb.[19] He also referenced a service quality gap, but Airbnb's new Business[20], Plus, and Luxe tiers should serve that need. Interestingly, bookings of luxury Airbnb listings priced at over $1,000/night increased by over 60% in 2018, suggesting Airbnb is a viable substitute for Marriott's premium/luxury segments, not just its lower-cost options.[21] In April 2019, Marriott entered the home-sharing market with the launch of its **Homes & Villas** brand, which has 2,500 homes.[22] Results are pending.

Regtech firms like HostCompliance, with which San Francisco government officials shut down 4,760 unauthorized hosts (almost 50% of the supply) in 208, threaten Airbnb's expansion.[23]

Telecommunications

Advancements in telecommunications technology (including platforms such as Webex, Skype, Zoom, Cisco, etc.) provide business and leisure travelers an increasingly appealing and cost-effective alternative to in-person travel.

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[15] Marriott News Center, "Expedia Group Signs Industry-First Agreement to become Optimized Distributor of Marriott International Wholesale Rates," September 9, 2019.
[16] Airbnb Newsroom: Fast Facts. https://press.airbnb.com/fast-facts/, accessed September 14, 2019.
[17] Airbnb Newsroom, "Airbnb's Growth and Summer Travel Updates," May 24, 2019.
[18] Marriott International, Second Quarter 2019 Earnings Conference Call Transcript, August 6, 2019, p. 12-14.
[19] Airbnb, "Delta SkyMiles® Airbnb partnership program": https://www.airbnb.com/help/article/1545/delta-skymiles%C2%AE-airbnb-partnership-program, accessed October 4, 2019.
[20] Airbnb, "Airbnb Introduces New Search Capabilities for Business Trips," July 22, 2019.
[21] Airbnb, "Airbnb Luxe Reimagines Luxury Travel," June 25, 2019.
[22] "Marriott International Launches Home Rentals In Over 100 Markets," Marriott International News Center, April 29, 2019.
[23] Douglas Bell, "Meet The Virtual Robocop Taking On Airbnb, Just As They Prepare For IPO," Forbes, August 31, 2019.

iii. Threat of New Entrants: Medium

Brand recognition, licensing, regulation, and financial capital are barriers to entry across the industry.[24] Given Marriott's size and reputation, however, the threat to Marriott is relatively small.

iv. Bargaining Power of Buyers: Low

Hotel rooms are commoditized, so although individual guests can switch easily between hotels (considering many hotels allow free cancellation up to 6pm on the day of check-in), guests generally do not have the power to negotiate room prices. In the case of group, government, or corporate booking arrangements, buyers may have more bargaining power over room prices.

v. Bargaining Power of Suppliers: Medium

Food and beverage, furniture, appliance, and online travel agents (OTAs) are key **suppliers** in this industry.[25] Marriott's new, larger volume post-Starwood merger has increased its leverage in OTA supplier negotiations (such as the Expedia agreement).[26] The industry relies heavily on **direct labor**. About 22 thousand of Marriott's 176 thousand employees are in unions, and labor disruptions occurred in some U.S. locations in 2018. However, Marriott resolved the contract negotiations and labor disputes. Employee relations are currently positive.

3. FIRM-LEVEL ANALYSIS

A. Business Model Overview

Marriott is a "worldwide operator, franchisor, and licensor of hotel, residential, and timeshare properties under numerous brand names at different price and service points."[27] **Figure 3** displays room percentages by geography and quality tier. Almost 90% of rooms fall within the *select* ("mirror the comfort of home") and *premium* ("sophisticated and thoughtful amenities and services") tiers. **Figure 4** also displays a room breakdown by geography and ownership type. It sheds light on Marriott's asset-light business model, as only 1% of rooms are owned/leased.

These data are used to forecast revenue by geographic region (Marriott does not report such statistics.) Given that a negligible fraction of Marriott's rooms are owned, real-estate fluctuations do not enter into valuation.

[24] "IBISWorld Industry Report: Global Hotels & Resorts," July 2019, p 24.
[25] Rachel Hyland, "Feeling at home: Industry revenue growth will slow down amid volatility in global markets," Hotels & Motels in the US, IBISWorld Industry Report 72111, April 2019, p. 14.
[26] Marriott International, FY 2018 Form 10K, p. 9.
[27] Marriott International, FY 2018 Form 10K, p. 3.

Figure 3: Systemwide Room Breakdown by Quality Tier as of Year-End 2018

	North America	Europe	Middle East & Africa	Asia Pacific	Caribbean & Latin America	Total
Luxury	3.2%	1.1%	0.9%	2.8%	0.6%	**9%**
Premium	26.0%	5.2%	2.3%	9.3%	2.2%	**45%**
Select	35.8%	2.5%	1.2%	3.4%	1.1%	**44%**
Residences, Timeshares	1.9%	0.1%	0.0%	0.2%	0.2%	**2%**
Total	**67%**	**9%**	**4%**	**16%**	**4%**	**100%**

Note: For a description of each tier, see Marriott International, Form 10K, p. 5. Room counts include company-operated and franchised properties.
Source: Author calculations of room counts as of Dec 31, 2018 as reported in Marriott International, Form 10K, pp. 6-7.

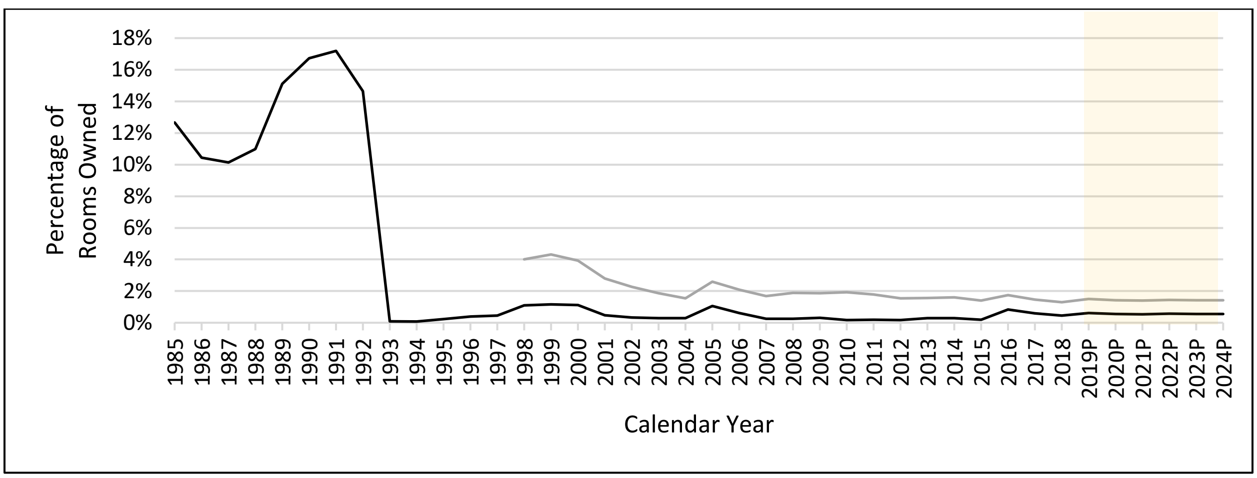
Figure 4: Systemwide Room Breakdown by Ownership Type as of Year-End 2018

	North America	Asia Pacific	Other Intl	Timeshare	Total
Managed	19%	14%	9%	0%	**42%**
Owned/Leased	1%	0%	1%	0%	**1%**
Franchised/Licensed	45%	2%	6%	2%	**55%**
Other	1%	0%	1%	0%	**2%**
Total	**66%**	**16%**	**17%**	**2%**	**100%**

Note: The discrepancy in North America % of rooms (67% in Figure 3 versus 66% in Figure 4) reflects a discrepancy in the 2018 10K.
Source: Author calculations of room counts as of Dec 31, 2018 as reported in Marriott International, Form 10K, p. 27.

Marriott's asset-light structure discussed in Section 2 *is not a new strategy,* as shown in **Figure 5.** We *don't forecast any material changes going forward.*

Figure 5: Percentage of Rooms Owned and Owned/Leased By Year



Note: Projections reflect moving 3-year historical arithmetic averages. Given the 2016 Starwood acquisition, a longer-term historical trend may not be relevant.
Source: Historical data from Marriott International, Investor Fact Book, June 2019.

B. Revenue Segmentation

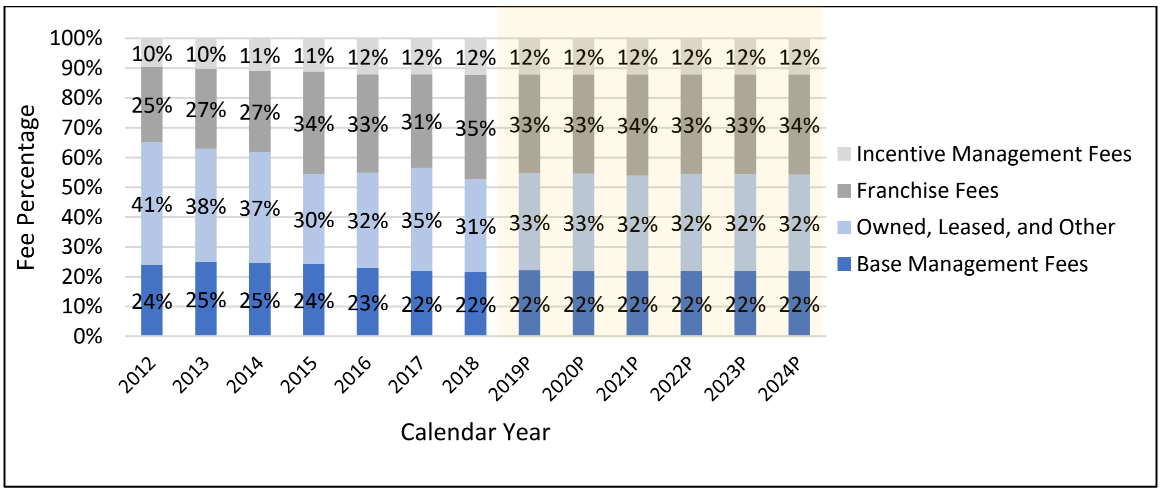
i. <u>Marriott Revenue Streams</u>

Marriott generates the following revenue streams[28]:

- Base management fees: A percentage of managed hotels' revenues
- Incentive management fees: A percentages of managed hotels' profits
- Franchise Fees: Initial application fee and ongoing royalty fees (based on a percentage of "certain revenues")
- Owned, leased, and other revenues: Nightly fees

Figure 6 breaks down revenue by stream type since 2012. Incentive management fees and franchise fees have steadily increased as a proportion of revenue due to a continued gradual decline in owned/leased properties.[29] We *do not expect* this trend to continue at the same pace, however, since incentive management and franchise fees have been relatively stable since 2016.

Figure 6: Gross Revenue Breakdown by Revenue Stream



Note: Revenue is gross of contract investment amortization. Projections reflect a 3-year historical moving average.
Source: Historical data from Capital IQ.

C. Company Drivers

The hotel industry is driven primarily by leisure and business travel. Researchers estimate (2019) that leisure accounts for 69% of industry revenue in the U.S. market[30] and 75% in the global market.[31]

***To predict 2H 2019 growth in the industry**, we therefore primarily consider consumer sentiment (**forward-looking indicators** directly linked to future spending).*

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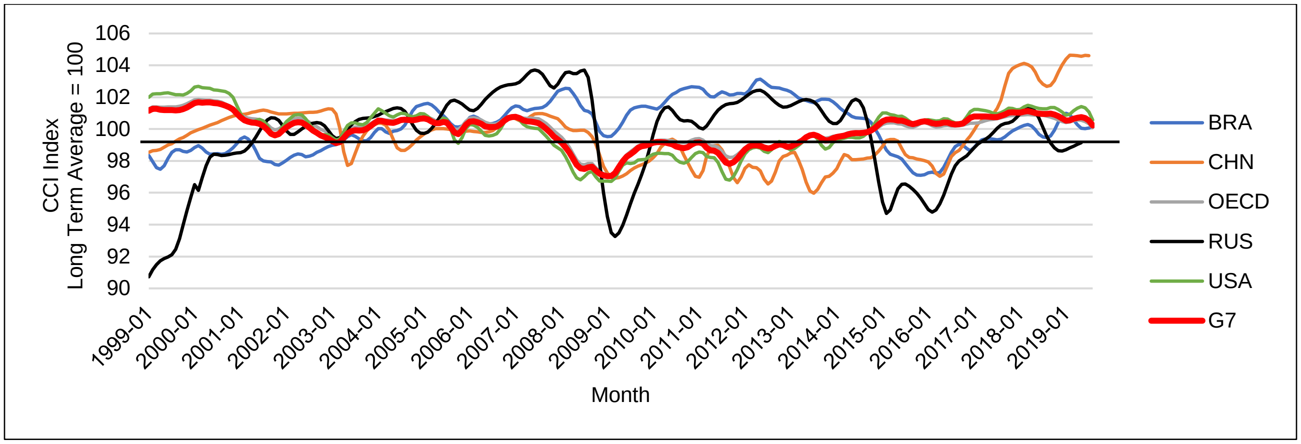
[28] Aligned with Capital IQ, we do not categorize *cost reimbursement* as part of revenue. For this reason, our revenue data differs from the figures in Marriott's 10k. By removing cost reimbursement, we avoid obfuscating actual money earned from operating activities with mere cost repayment.
[29] For a year-by-year breakdown of rooms by ownership type, see Marriott Fact Book, June 2019, p. A-9.
[30] Rachel Hyland, "Feeling at home: Industry revenue growth will slow down amid volatility in global markets," Hotels & Motels in the US, IBISWorld Industry Report 72111, April 2019.
[31] "IBISWorld Industry Report: Global Hotels & Resorts," July 2019.

i. <u>Consumer Sentiment</u>

The consumer confidence index is a *forward-looking* measure of consumers' "inclin[ation] to spend money on major purchases *in the next 12 months*."[32] That is, CCI is a *leading indicator* of future economic activity (**Figure 7**). Given representation in Marriott's key regions—North America, Asia, and Europe—G7 is an appropriate signal for Marriott's revenue.

Figure 7: G7 Consumer Confidence Has Declined Since 2017



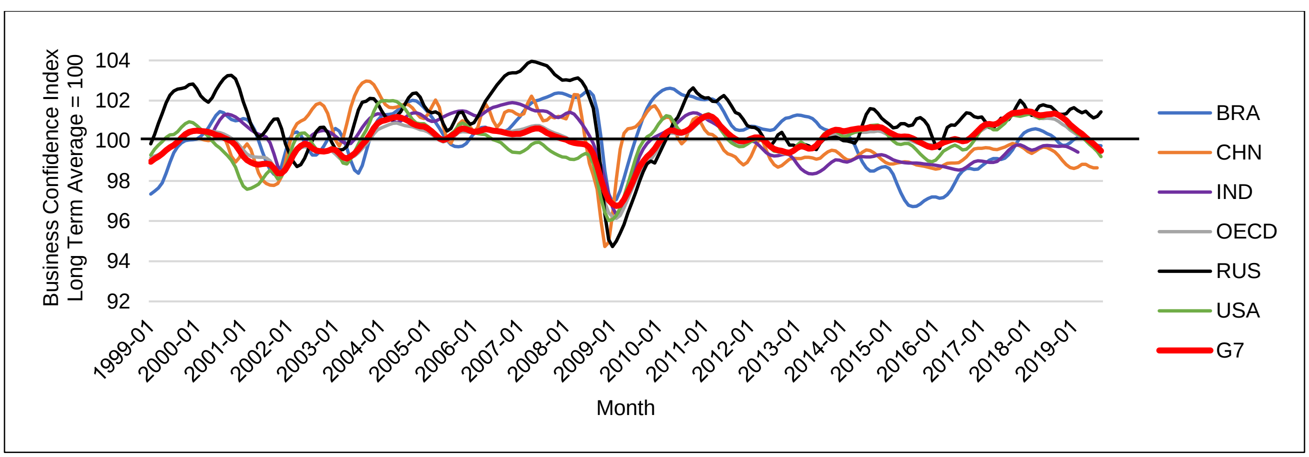
Note: CCI is amplitude adjusted such that long-term average = 100.
Source: OECD Data, sourced from "Main Economic Indicators: Business tendency and consumer opinion surveys," accessed September 11, 2019.

ii. <u>Business Confidence</u>

Business travel comprises roughly a quarter of the global market. The (a) downward trend and (b) confidence now below historical norms are also red flags for future growth (**Figure 8**).

Interestingly, regression analysis shows that business confidence, unlike consumer confidence, is not a strong predictor of future Marriott revenue growth. Therefore, we excluded it from our 2H 2019 forecast. For an extended discussion, see Section 4.B.

Figure 8: G7 Business Confidence Has Seen Steep Decline Q4 2018



Note: BCI is amplitude adjusted such that long-term average = 100. Shaded region represents timing since 2012 for reference with the above industry trends analysis. India data not available.
Source: OECD Data, sourced from "Main Economic Indicators: Business tendency and consumer opinion surveys," accessed September 11, 2019,

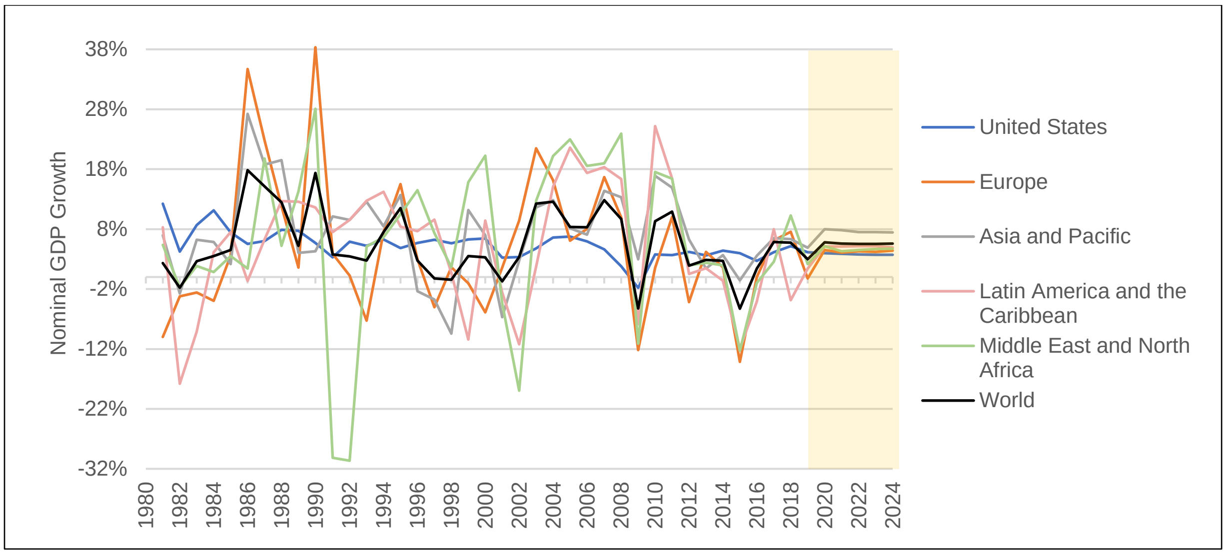
[32] OECD, "Definition of Consumer confidence index (CCI)," https://data.oecd.org/leadind/consumer-confidence-index-cci.htm, accessed Sept. 11, 2019.

iii. GDP Growth

Academic research (2012) estimates that the U.S. hotel industry has an income elasticity of demand of 0.56 in the short run and 0.62 in the long run (with wide variation depending on the price category of the hotel).[33] Put differently, a one percent increase in income corresponds with a 0.56-0.62 increase in demand of hotels. The International Monetary Fund's World Economic Outlook (April 2019) paints a picture of slowed or flat growth across all regional economies through 2024 (**Figure 9**).

These nominal GDP projections are used to forecast regional revenues for the DCF valuation.

Figure 9: Regional GDP Growth Projected to Decrease for U.S., Increase Elsewhere through 2024



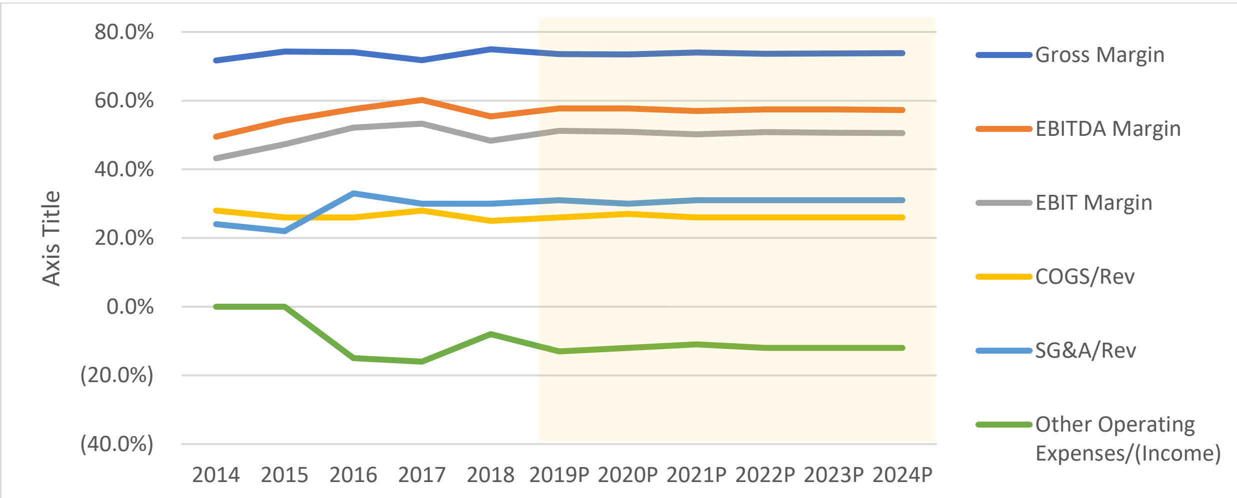
Note: Shaded area/asterisks represent projections. Comparison of past five years growth (2014-2018) to future five years growth (2019-2024)
Source: IMF, World Economic Outlook (2019), DataMapper, accessed September 23, 2019.

[33] Jack Corgel, Jamie Lane, and Mark Woodworth, "Hotel Industry Demand Curves," *Journal of Hospitality Financial Management* 20, no. 1, 2012.

D. Cost Forecasts

Cost forecasts represent a three-year moving average of historical figures (prior data excluded due to 2016 Starwood acquisition). **Figure 10** shows relatively stable margins and costs for 2016-2018.

Figure 10: Margin Analysis



E. Risk Factors

- **GDP Growth, Consumer Sentiment, and Factors Impacting Global Travel.** Lower than forecasted GDP growth rates and/or consumer sentiment could impact travel spending, potentially hurting Marriott's profitability. Global trade and political tensions could also have a direct or indirect impact on Marriott's expansion into emerging markets.

- **CEO Arne Sorenson's Health.**[34] Although Mr. Sorenson is optimistic about his treatment outlook for Stage 2 pancreatic cancer, he says he is not taking his future for granted. He is in a window between chemotherapy and surgery, and continues to provide updates on his health during earnings calls and in interviews. He has indicated that Marriott has a succession plan in place, although there is no talk of it being needed. He is working on a reduced schedule.

- **Continued Growth of Home Sharing.** The home-sharing market is an increasing risk, especially given Airbnb's 50+% revenue growth in 2017[35] recently reported 40% revenue growth in 2018.[36] Marriott's Homes & Villas brand is still nascent with 2,500 homes, and if it fails to gain traction, it could leave Marriott vulnerable to the home-sharing industry, which is innovating rapidly and growing exponentially.

- **Marriott continues diverting resources to the Starwood integration and data security incident**. If these activities persist for too long, it could put success of other projects at risk.

[34] Jeremy Hobson & Allison Hagan. "Marriott CEO Says Cutting Out Single-Use Toiletries Will Save 500 Million Plastic Bottles Per Year." WBUR. Sept. 23, 2019.
[35] Heather Somerville, "Airbnb had 'substantially more' than $1 billion in quarterly revenue," *Reuters*, November 16, 2018.
[36] Katie Roof, "Airbnb's First-Quarter Financials Show Strong Growth Rate, Cash Reserves," *Wall Street Journal*, August 19, 2019.

4. CONSTRUCTING DCF MODEL TO VALUE MARRIOTT

A. Forecasts

Marriott forecasts are shown in **Figure 11.** Revenue and cost forecast assumptions are outlined in Section 4.B-4.C. The assumptions underlying these forecasts are outlined in **Figure 12.**

Figure 11: Dollar Forecasts for DCF

	Historical					Forecasts					
Mid-Year Adjustment For DCF	-	-	-	-		12/31/2019	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Revenue	$2,741	$2,856	$3,473	$4,997	$5,215	$5,379	$5,591	$5,804	$6,023	$6,251	$6,489
North America	$1,834	$1,911	$2,324	$3,344	$3,490	$3,146	$3,186	$3,205	$3,232	$3,254	$3,280
Europe	$243	$253	$307	$442	$462	$797	$833	$864	$888	$904	$911
Asia and Pacific	$431	$450	$547	$787	$821	$853	$963	$1,104	$1,255	$1,432	$1,632
Middle East and Africa	$121	$126	$153	$220	$230	$266	$278	$289	$297	$302	$305
L.A. and Caribbean	$112	$116	$141	$203	$212	$316	$330	$342	$352	$358	$361
COGS	$775	$733	$901	$1,411	$1,306	$1,420	$1,485	$1,509	$1,586	$1,644	$1,701
SG&A	$659	$634	$1,152	$1,483	$1,587	$1,672	$1,700	$1,779	$1,850	$1,912	$1,989
Other Operating Expenses/(Income)	$0	$0	($509)	($789)	($425)	-$692	-$686	-$644	-$727	-$738	-$757
D&A	$123	$139	$119	$229	$226	$221	$243	$247	$255	$268	$277
EBIT	$1,184	$1,350	$1,810	$2,663	$2,521	$2,757	$2,849	$2,913	$3,060	$3,166	$3,280
EBIT(1-t)	$819	$923	$1,180	$1,302	$2,050	$2,241	$2,316	$2,368	$2,487	$2,574	$2,666
Plus: D&A	$123	$139	$119	$229	$226	$221	$243	$247	$255	$268	$277
Less: Capex	411	305	199	240	556	$380	$420	$488	$461	$491	$518
Less: Inc. in Net Wk.Cap.	($316)	($437)	($680)	($727)	($162)	($285)	($13)	($168)	($165)	($115)	($162)
FCF	$847	$1,194	$1,780	$2,018	$1,882	$2,367	$2,153	$2,295	$2,447	$2,466	$2,588
Terminal Value											$56,788

Figure 12: Forecast Assumptions for DCF

	Historical					Forecasts						
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
Revenue Growth	-	4.2%	21.6%	43.9%	4.4%	3.1%	4.0%	3.8%	3.8%	3.8%	3.8%	***See revenue forecast model below***
COGS/Rev	28%	26%	26%	28%	25%	26.4%	26.6%	26.0%	26.3%	26.3%	26.2%	*3-year moving avg*
SG&A/Rev	24%	22%	33%	30%	30%	31.1%	30.4%	30.6%	30.7%	30.6%	30.6%	*3-year moving avg*
Other Operating Expenses/(Income)	0%	0%	-15%	-16%	-8%	-12.9%	-12.3%	-11.1%	-12.1%	-11.8%	-11.7%	*3-year moving avg*
D&A/Rev	4%	5%	3%	5%	4%	4.1%	4.3%	4.3%	4.2%	4.3%	4.3%	*3-year moving avg*
EBIT/Rev	43%	47%	52%	53%	48%	51.2%	51.0%	50.2%	50.8%	50.6%	50.5%	*3-year moving avg*
EBITDA/Rev	50%	54%	58%	60%	55%	57.7%	57.8%	57.0%	57.5%	57.4%	57.3%	*3-year moving avg*
Debt/EBITDA	2.78	2.65	4.26	2.74	3.24	3.41	3.13	3.26	3.27	3.22	3.25	*3-year moving avg*
Net Debt/EBTIDA	2.70	2.59	3.83	2.61	3.13	3.19	2.97	3.10	3.09	3.05	3.08	*3-year moving avg*
Capital Expenditure/Rev	15%	11%	6%	5%	11%	7%	8%	8%	8%	8%	8%	*3-year moving avg*
Net Working Capital/Total Assets	-18%	-27%	-10%	-13%	-14%	-12%	-13%	-13%	-13%	-13%	-13%	*3-year moving avg*
Total Assets / Rev	2.49	2.13	6.95	4.77	4.54	5.42	4.91	4.96	5.10	4.99	5.02	*3-year moving avg*
Total Assets	$6,833	$6,082	$24,140	$23,846	$23,696	$29,164	$27,467	$28,787	$30,707	$31,193	$32,548	*Based on total asset/revenue projection*
Net Working Capital	($1,208)	($1,645)	($2,325)	($3,052)	($3,214)	-$3,499	-$3,512	-$3,680	-$3,845	-$3,961	-$4,123	*Based on Net WC /Total Assets projection*
Net Debt	$3,667	$4,011	$7,648	$7,855	$9,031	$9,897	$9,610	$10,238	$10,687	$10,955	$11,443	*Based on CapEx/Revenue projection*
Total Debt	$3,771	$4,107	$8,506	$8,238	$9,347	$10,586	$10,104	$10,771	$11,306	$11,544	$12,069	*Based on Net Debt/EBTIDA projection*
EBITDA	$1,358	$1,547	$1,998	$3,010	$2,888	$3,104	$3,230	$3,306	$3,462	$3,588	$3,717	*Based on EBITDA/Rev projection*

B. Marriott Revenue Forecast for 2019[37]

To forecast 2019 revenue, we applied Marriott's revenue growth rate from the first half of 2018 to the first half of 2019 (accounting for seasonality), and adjusted downward to account for declining consumer confidence.

To determine the downward adjustment, we applied the following methodology:

1. We took the level change in the six-month average of G7 country consumer confidence (amplitude adjusted, long-term average = 100) index from 1H 2019 to 1H 2018 (0.41).[38]
2. We regressed the natural log of Marriott revenue data against 1-year lagged[39] G7 country consumer confidence index level, using annual data from the post-Great Recession era (2010+). Regression results are displayed in **Figure 13.** The coefficient on *cci_lagged* suggests that a one-point increase in the 1-year lagged CCI index results in a 20% increase in Marriott revenue (statistically significant at the 10% level).

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[37] As of the writing of this report (10/1), Marriott has not released Q3 financial data.
[38] We look exclusively to consumer confidence based on (a) prior empirical findings showing that three-quarters of hotel and motels global industry revenue comes from non-business travel and (b) very little additional explanatory power (calculated as the change in adjusted r-squared) and no statistical significance when included in a multi-variable regression. The G7 Index given representation in in North America (U.S. and Canada), Asia (Japan), and Europe (Germany, France, Italy) /United Kingdom. While not fully comprehensive, we believe it is a fair representation of Marriott consumers.
[39] 12-month Lagged data are used to reflect the fact the consumer confidence is "[a]n indicator above 100 signals a boost in the consumers' confidence towards the future economic situation, as a consequence of which they are less prone to save, and more inclined to spend money on major purchases **in the next 12 months"** (bold added for emphasis). *See* https://data.oecd.org/leadind/consumer-confidence-index-cci.htm,

Figure 13: Marriott Revenue vs. 1-Year Lagged G7 Consumer Confidence Index 2010-2018

```
. regress lnrev cci_lagged, r

Linear regression                          Number of obs     =          9
                                           F(1, 7)           =       5.23
                                           Prob > F          =     0.0560
                                           R-squared         =     0.4709
                                           Root MSE          =     .21668

------------------------------------------------------------------------------
             |               Robust
       lnrev |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  cci_lagged |   .2012411    .087981     2.29   0.056    -.0068009    .4092832
       _cons |  -11.90881   8.762664    -1.36   0.216    -32.62922    8.811596
------------------------------------------------------------------------------
```

3. We multiplied the coefficient (20%) by the consumer confidence level change identified in Step 1 (0.41) for a predicted change in the growth rate. **Figure 14** displays the steps.

Figure 14: 2019 Revenue Forecast Mechanics

2019 Marriott Forecast		
Revenue growth rate from 1H 2018 to 1H 2019	2.5%	
2H 2018 - 1H 2019 CCI Growth	0.23	*The average of monthly CCI decline 0.23 points from 1H 2018 to 1H 2019*
2019 2H Downward Adjustment	5%	=20.1% (coeff. of cci_lagged) * 0.23. Reflects downward adjusted *1H actual growth, given decline in CCI (G7 countries) in 2H 2018*
Expected Growth Rate from 1H 2019 to 2H 2019	2.4%	*= 2.5% * (100%-5%)*

C. Marriott Revenue Forecast for 2020-2024

Given that Marriott is driven primarily by macroeconomic drivers (see Section 2), we forecast revenue by region and aggregate up. While Marriott does not disclose detailed region-level revenues, we estimate using the following procedure:

1. Project the percentage of total revenues generated from each region, based on historical trends. We use a moving two-year historical average, since data prior to 2016 lacked proper comparability given the Starwood acquisition that year. See **Appendix 1** for more details.

Figure 15: Proportion of Revenue by Region

	Historical	Forecasts					
Country Weights for Revenue Forecast	2018	2019	2020	2021	2022	2023	2024
North America	60.7%	58.5%	57.0%	55.2%	53.7%	52.1%	50.6%
Asia and Pacific	14.1%	15.9%	17.2%	19.0%	20.8%	22.9%	25.1%
Europe	14.5%	14.7%	14.6%	14.5%	14.2%	13.8%	13.3%
Middle East and Africa	4.9%	5.2%	5.5%	5.7%	5.9%	6.1%	6.2%
Latin Am. & Caribbean	5.8%	5.7%	5.6%	5.5%	5.3%	5.1%	4.8%

Note: North America and Asia and Pacific for 2018 are actual figures. Marriott aggregates Europe, Middle East and Africa, and Latin America and the Caribbean in an "Other International." As a result, each of these "sub-region" proportions are estimated by considering their total number of rooms and the RevPAR for company operated rooms. See Appendix 1 for full details.
Source: MAR, Form 10K, 2018, p. 81.

2. Next, we applied a *downward adjusted* GDP growth rate for each region using the current forecasts by the International Monetary Fund (April 2019).

Figure 16: Nominal GDP Forecasts

	2019P	2020P	2021P	2022P	2023P	2024P
North America	4.2%	4.0%	3.9%	3.7%	3.7%	3.7%
Asia Pacific	4.9%	8.0%	7.8%	7.5%	7.5%	7.5%
Caribbean and L.A	1.4%	5.1%	5.1%	5.1%	5.2%	4.9%
Europe	-0.3%	4.5%	4.1%	4.3%	4.2%	4.4%
M.E. and North Africa	2.2%	5.1%	4.3%	4.5%	4.7%	4.7%

Source: IMF, World Economic Outlook (2019), DataMapper, accessed September 11, 2019.

3. Downward adjustments help account for new entrants into the industry and competition from substitutes like Airbnb (see Section 2). We therefore discount actual GDP growth as displayed in **Figure 17**. The different adjustments displayed reflect outside analysis suggesting that the hotel industry is mature in developed economies like the U.S and "growing" on a global basis.[40] **Figure 18** shows the growth rates after downward adjustments.

Figure 17: Percentage of Actual GDP Growth Used in DCF Model

Regions	***Annual Change***	**2020**	**2021**	**2022**	**2023**	**2024**
US and Europe	0% p.p.	75%	75%	75%	75%	75%
Asia & Pacific, M.E. & Africa, L.A. and Caribbean	-2 p.p.	90%	88%	86%	84%	82%

Note: p.p = percentage points

Figure 18: Revenue Forecasts by Region—Downward Adjusted GDP Forecasts

	Historical					Forecasts					
Nominal GDP	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
U.S.	$17,522	$18,219	$18,707	$19,485	$20,494	$21,345	$22,198	$23,060	$23,923	$24,813	$25,729
Growth		4.0%	2.7%	4.2%	5.2%	4.2%	4.0%	3.9%	3.7%	3.7%	3.7%
Post Down. Adj.						3.1%	3.0%	2.9%	2.8%	2.8%	2.8%
Europe	$22,290	$19,136	$19,141	$20,316	$21,846	$21,791	$22,769	$23,696	$24,712	$25,743	$26,875
Growth		-14.1%	0.0%	6.1%	7.5%	-0.3%	4.5%	4.1%	4.3%	4.2%	4.4%
Post Down. Adj.						-0.2%	3.4%	3.1%	3.2%	3.1%	3.3%
Asia and Pacific	$25,831	$25,688	$26,597	$28,316	$30,116	$31,583	$34,103	$36,769	$39,524	$42,487	$45,661
Growth		-0.6%	3.5%	6.5%	6.4%	4.9%	8.0%	7.8%	7.5%	7.5%	7.5%
Post Down. Adj.						3.7%	7.2%	6.9%	6.4%	6.3%	6.1%
Middle East and Africa	$5,987	$5,270	$5,054	$5,457	$5,247	$5,321	$5,593	$5,877	$6,179	$6,498	$6,818
Growth		-12.0%	-4.1%	8.0%	-3.9%	1.4%	5.1%	5.1%	5.1%	5.2%	4.9%
Post Down. Adj.						1.1%	4.6%	4.5%	4.4%	4.3%	4.0%
Latin America and Caribbean	$3,204	$2,811	$2,783	$2,853	$3,146	$3,214	$3,379	$3,524	$3,684	$3,856	$4,038
Growth		-12.3%	-1.0%	2.5%	10.3%	2.2%	5.1%	4.3%	4.5%	4.7%	4.7%
Post Down. Adj.						1.6%	4.6%	3.8%	3.9%	3.9%	3.9%

Note: Yellow highlights reflect GDP after downward adjustments. GDP in nominal USD.
Source: Nominal GDP growth (not downward adjusted) from GDP forecasts from IMF Datamapper, accessed September 13, 2019.

Further support of the yellow highlighted rates shown in **Figure 18** are room count figures by region, displayed in **Figures 19 A-B** (same scale used for ease of comparison), which show room count growth far exceeding revenue per available room premium for domestic rooms.

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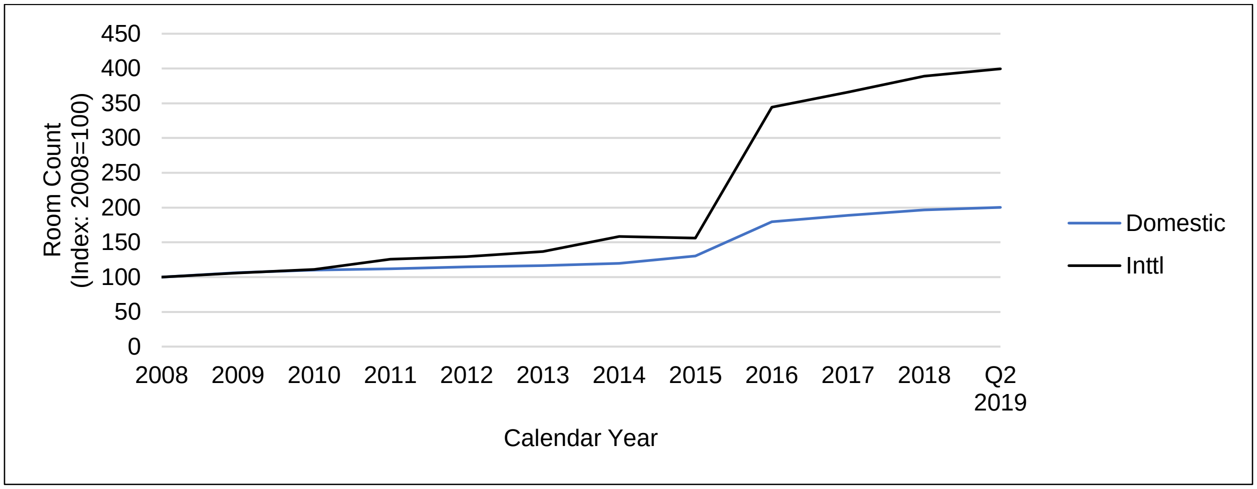
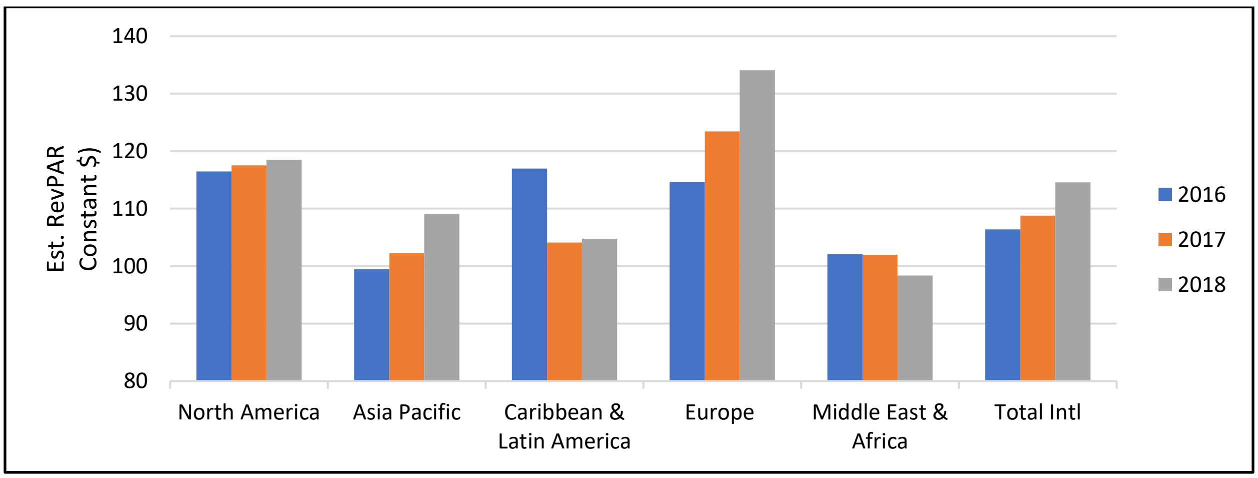
[40] IBISWorld Industry Report: Global Hotels & Resorts," July 2019 and Rachel Hyland, "Feeling at home: Industry revenue growth will slow down amid volatility in global markets," Hotels & Motels in the US, IBISWorld Industry Report 72111, April 2019.

Figure 19-A: Marriott Room Count Growth, U.S. versus International



Note: Total Room Count. 2016 spike form the acquisition of Starwood Hotels & Resorts Worldwide in September 2016.
Source: Marriott International, 2019 2Q Investor Factbook.

Figure 19-B: Revenue Per Available Room, U.S. versus International, 2016-2018



Note: Data reflect Comparable Systemwide International Properties (the set of comparable properties may change by year).
Source: Marriott International, Form 10K, 2018, p. 28.

D. WACC

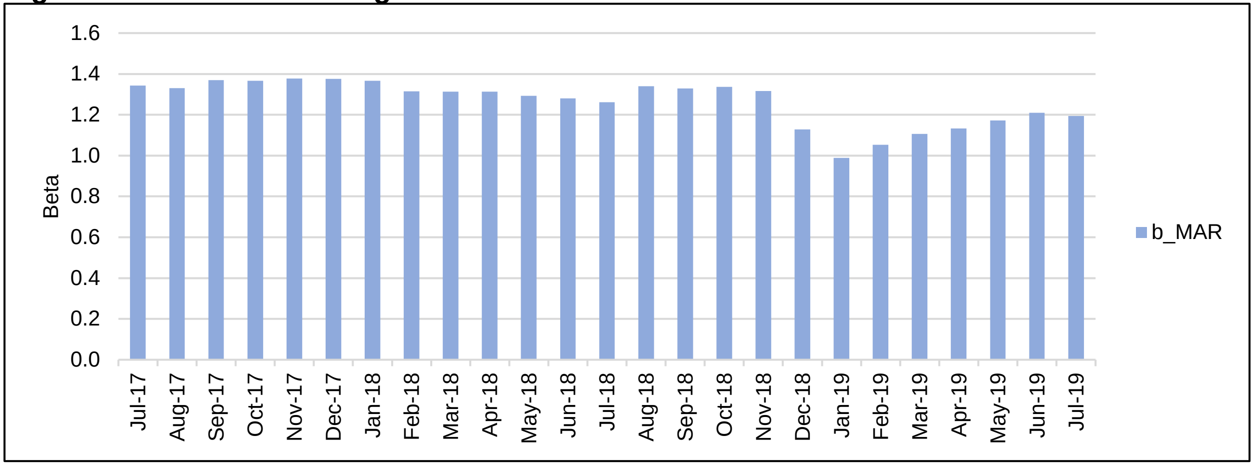
We used the WACC approach since net debt is not constant across time. The net debt as of 2015 was $4.0B versus 11.15B as of Q2 2019.[41]

Given increasing globalization, we also produced a 3-year rolling beta estimation over this 5-year period (see **Figure 20**).

[41] Data from Capital IQ, accessed September 2019. Data only reflects H, HLT, MAR, STAY, VAC.

Using the CAPM model, we used the levered beta (1.23) and found that the cost of equity capital is 8.97%. (See **Figure 20** for a rolling 36 month rolling beta). Because there is no consistent trend in the betas, we use the 5-year estimate for WACC calculation.

Figure 20: 36-Month Rolling Beta



We assume the current capital to be the target capital structure—21% debt and 79% equity.[42] Next, we calculate the cost of debt by taking the pooled latest-FY interest expense and dividing by the latest-FY total debt, which comes to 3.64%. We use the 2018 ETR of 18.7% to get an after-tax cost of debt of 2.96%. Our estimated WACC is 7.67%, which we round to 7.7% to avoid confusion about the implied precision about this estimate **(Figure 21)**.

Figure 21: WACC Calculation

Capital Structure			
Debt to Total Capitalization	22%		
Equity to Total Capitalization	78%		
Cost of Debt		**Cost of Equity**	
Cost of Debt	3.64%	Risk Free Rate	1.64%
ETR (2018)	19%	Market Risk Premium	5.96%
After Tax Cost of Debt	2.96%	Levered beta	1.23
		Cost of Equity	8.97%
WACC	**7.67% ≈ 7.7%**		

Note: The Rf and market risk premium (Rm – Rf) is data are from Kenneth R. French's data library. French notes, "Rm-Rf, the excess return on the market, value-weight return of all CRSP firms incorporated in the US and listed on the NYSE, AMEX, or NASDAQ that have a CRSP share code of 10 or 11 at the beginning of month t, good shares and price data at the beginning of t, and good return data for t minus the one-month Treasury bill rate (from *Ibbotson Associates) See.*https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html. Total returns are from Compustat Daily Updates – Security Monthly, accessed September 24, 2019.

E. Determining Terminal Growth Rate

Recent research from the OECD projects the long-term *real* GDP growth rate will settle at 2%.[43] The IMF (April 2019) projects that by 2024, global inflation (average consumer prices) will slow to 3.4% (versus an average of 5.6% since 1994).[44] We conservatively assume that inflation will

[42] This assumption is further supported by MAR's capital structure to be roughly similar to the pooled capital structure of comparables (i.e., Hilton, Hyatt, Marriott Vacations Worldwide at 25% Debt and 75% equity). We also conducted the comparables WACC, which came out to 7.14% *See* Section 5.D for sensitivity analysis regarding WACC.
[43] Yvan Guillemette and David Turner, "The Long View: Scenarios for the World Economy to 2060," OECD, July 2018.
[44] IMF, World Economic Outlook, April 2019, Data Mapper, https://www.imf.org/external/datamapper/PCPIPCH@WEO/WEOWORLD.

ultimately slow to the current long-run inflation projections of the IMF's group of "Major Advanced Economies,"[45] which is 2%. This suggests a long-term global nominal GDP growth rate of 4%. We adjust our perpetuity growth rate down to 3% to account for new entrants in the global economy and the strong threat of substitutes.

F. Mid-Year Adjustment

Marriott revenues are relatively evenly distributed throughout the year. In 2018, the lowest quarter had 23.64% of revenue and the highest quarter 26.10%. To avoid implicitly assuming all cash flows are received at year-end, the mid-year convention is applied, and therefore discount at June 30 of each year back to October 1, 2019.

G. Back-Testing Results

Back-testing our model implies a strong fit with an average positive differential (backtest / actual revenue) of 0.2% in 2018 and 3% in 2015 (2016-2017 excluded due to Starwood acquisition). In our back-test, we applied actual GDP growth figures from the IMF, the same downward adjustment as in 2020, actual financials for country weights by revenue in 2018 and estimated international revenue weights for 2015 based on profits. See Appendix 2 for details.

[45] The G7: Canada, France, Germany, Italy, Japan, United Kingdom, United States

5. VALUATION

Figure 22 reports our final valuation, which is an equity value weighted by the probability of our baseline (60%), upside (15%), and downside (35%) scenarios. The downside scenario probability reflects economists' opinions of the chance of recession (33.6% as of August 2019).[46]

Figure 22: Final Valuation

	Assigned Probability	Equity Valuation
Baseline Case	50%	$39,028
Upside Case	15%	$43,953
Downside Case	35%	$34,897
Weighted Avg		$38,321
Current Market Cap		$40,643
Valuation / Current Market Cap		94%
Recommendation		HOLD

[46] Harriet Torry, "Economists See Greater Chance of September Rate Cut, WSJ Survey Says," Wall Street Journal, August 8, 2019.

A. Baseline

Assumptions		
Date	10/1/2019	*=Date of Valuation*
Mid-Year Adj. for FCF 2020-2024	TRUE	
Cash Flows in Nominal or Real terms	NOMINAL	
Effective Tax Rate	18.7%	*= 2018 Effective Tax Rate*
Future 2019 FCF (% of Total 2019 FCF)	*25.00%*	*=Faction of year remaining*
WACC	7.7%	*=See table below*
Terminal Growth Rate	3%	*=See Five Forces analysis (2024 terminal year)*
Enterprise Value	$50,178	*=XNPV using WACC, FCF for XNPV Values, and Forecasts Dates from 10/1/19 to 6/30/2024 in Green*
Less: Net Debt	$11,150	*=Latest Net Debt value as of Q2 2019*
Equity Value	$39,028	*=EV - Net Debt*
Current Market Capitalization	$40,643	*=Market Cap as of 10/1/19*
Equity Value / Mkt Cap	**96%**	

	Historical					Forecasts					
Mid-Year Adjustment For DCF	-	-	-	-		12/31/2019	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Revenue	$2,741	$2,856	$3,473	$4,997	$5,215	$5,376	$5,589	$5,802	$6,022	$6,250	$6,488
North America	$1,834	$1,911	$2,324	$3,344	$3,490	$3,144	$3,185	$3,204	$3,231	$3,254	$3,280
Europe	$243	$253	$307	$442	$462	$790	$819	$841	$857	$865	$864
Asia and Pacific	$431	$450	$547	$787	$821	$853	$962	$1,104	$1,254	$1,432	$1,632
Middle East and Africa	$121	$126	$153	$220	$230	$280	$307	$334	$358	$380	$399
L.A. and Caribbean	$112	$116	$141	$203	$212	$309	$315	$320	$321	$319	$314
COGS	$775	$733	$901	$1,411	$1,306	$1,420	$1,485	$1,509	$1,585	$1,644	$1,701
SG&A	$659	$634	$1,152	$1,483	$1,587	$1,672	$1,699	$1,778	$1,849	$1,912	$1,988
Other Operating Expenses/(Income)	$0	$0	($509)	($789)	($425)	-$692	-$686	-$644	-$727	-$738	-$757
D&A	$123	$139	$119	$229	$226	$221	$243	$247	$255	$268	$277
EBIT	$1,184	$1,350	$1,810	$2,663	$2,521	$2,755	$2,848	$2,912	$3,059	$3,165	$3,279
EBIT(1-t)	$819	$923	$1,180	$1,302	$2,050	$2,240	$2,315	$2,367	$2,487	$2,574	$2,666
Plus: D&A	$123	$139	$119	$229	$226	$221	$243	$247	$255	$268	$277
Less: Capital Expenditure	411	305	199	240	556	$380	$420	$488	$461	$491	$518
Less: Inc. in Net Working Capital	($316)	($437)	($680)	($727)	($162)	($283)	($13)	($168)	($166)	($116)	($163)
FCF	$847	$1,194	$1,780	$2,018	$1,882	$2,365	$2,152	$2,295	$2,447	$2,466	$2,588
Terminal Value											$56,708
				FCF for XNPV		$591	$2,152	$2,295	$2,447	$2,466	$59,295

** Future FCF remaining in 2019*

B. Upside

In our upside case, we adjusted the three key Marriott FCF drivers below.

UPSIDE SCENARIO		Explanation
GDP Growth Rates	110.00% (of baseline growth rates)	*GDP growth rates are 10% above baseline forecasted values*
EBIT Margin	53.3%	*EBIT Margin is increased for all years 2020-2024 to the highest value in last 3 years*
Terminal Growth Rate	3.10%	*10 basis points above baseline forecast*

Assumptions		
Date	10/1/2019	*=Date of Valuation*
Mid-Year Adj. for FCF Calculation 2020-2024	TRUE	
Cash Flows in Nominal or Real terms	NOMINAL	
Effective Tax Rate	18.7%	*= 2018 ETR*
Future 2019 FCF (% of Total 2019 FCF)	*25.00%*	*=Faction of year remaining*
WACC	7.7%	*=See table below*
Terminal Growth Rate	3.10%	*=10 basis points above baseline forecast*
Enterprise Value	$55,103	*=XNPV using WACC, FCF for XNPV Values, and Forecasts Dates from 10/1/19 to 6/30/2024 in Green*
Less: Net Debt	$11,150	*=Latest Net Debt value as of Q2 2019*
Equity Value	$43,953	*=EV - Net Debt*
Current Market Capitalization	$40,643	*=Market Cap as of 10/1/19*
Equity Value / Mkt Cap	**108%**	

	Historical					Forecasts					
Mid-Year Adjustment For DCF	-	-	-	-		12/31/2019	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Revenue	$2,741	$2,856	$3,473	$4,997	$5,215	$5,376	$5,610	$5,846	$6,089	$6,343	$6,609
North America	$1,834	$1,911	$2,324	$3,344	$3,490	$3,144	$3,197	$3,228	$3,267	$3,302	$3,341
Europe	$243	$253	$307	$442	$462	$790	$822	$848	$867	$878	$880
Asia and Pacific	$431	$450	$547	$787	$821	$853	$966	$1,112	$1,268	$1,453	$1,662
Middle East and Africa	$121	$126	$153	$220	$230	$280	$308	$336	$362	$386	$407
Latin America and Caribbean	$112	$116	$141	$203	$212	$309	$317	$322	$325	$324	$319
D&A	$123	$139	$119	$229	$226	$221	$244	$249	$258	$272	$282
EBIT	$1,184	$1,350	$1,810	$2,663	$2,521	$2,755	$2,990	$3,115	$3,245	$3,380	$3,522
EBIT(1-t)	$819	$923	$1,180	$1,302	$2,050	$2,240	$2,431	$2,533	$2,638	$2,748	$2,863
Plus: D&A	$123	$139	$119	$229	$226	$221	$244	$249	$258	$272	$282
Less: Capital Expenditure	411	305	199	240	556	$380	$421	$492	$467	$499	$527
Less: Increase in Net Working Capital	($316)	($437)	($680)	($727)	($162)	($283)	($27)	($182)	($181)	($132)	($180)
FCF	$847	$1,194	$1,780	$2,018	$1,882	$2,365	$2,280	$2,472	$2,611	$2,653	$2,798
Terminal Value											$62,716
				FCF for XNPV		$591	$2,280	$2,472	$2,611	$2,653	$65,514

C. Downside

In our downside case, we adjusted the three key Marriott FCF drivers below.

DOWNSIDE SCENARIO		Explanation
GDP Growth Rates	90.00% (of baseline growth rates)	*GDP growth rates are 10% below baseline forecasted values*
EBIT Margin	48.3%	*EBIT Margin is decreased for all years 2020-2024 to the lowest value in last 3 years*
Terminal Growth Rate	2.90%	*10 basis points below baseline forecast*

Assumptions		
Date	10/1/2019	*=Date of valuation*
Mid-Year Adjustment for FCF Calculation 2020-2024	TRUE	*=Cash flows are relatively steady Q1-Q4, assume CF occur mid-year*
Cash Flows in Nominal or Real terms	NOMINAL	
Effective Tax Rate	18.7%	*=2018 ETR*
Future 2019 FCF (% of Total 2019 FCF)	*25.00%*	*=Faction of year remaining*
WACC	7.7%	*=See table below*
Terminal Growth Rate	2.90%	*=10 basis points below baseline forecast*
Enterprise Value	$46,047	*=XNPV using WACC, FCF for XNPV Values, and Forecasts Dates from 10/1/2019 to 6/30/2024 in Green*
Less: Net Debt	$11,150	*=Latest Net Debt value as of Q2 2019*
Equity Value	$34,897	*=EV - Net Debt*
Current Market Capitalization	$40,643	*=Market Cap as of 10/1/2019*
Equity Value / Mkt Cap	**86%**	

	Historical					Forecasts					
Mid-Year Adjustment For DCF	-	-	-	-		12/31/2019	6/30/2020	6/30/2021	6/30/2022	6/30/2023	6/30/2024
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Total Revenue	$2,741	$2,856	$3,473	$4,997	$5,215	$5,376	$5,567	$5,759	$5,955	$6,158	$6,369
North America	$1,834	$1,911	$2,324	$3,344	$3,490	$3,144	$3,173	$3,180	$3,195	$3,206	$3,220
Europe	$243	$253	$307	$442	$462	$790	$815	$835	$848	$852	$848
Asia and Pacific	$431	$450	$547	$787	$821	$853	$959	$1,096	$1,241	$1,411	$1,602
Middle East and Africa	$121	$126	$153	$220	$230	$280	$306	$331	$354	$375	$392
L.A. and Caribbean	$112	$116	$141	$203	$212	$309	$314	$317	$317	$314	$308
D&A	$123	$139	$119	$229	$226	$221	$242	$246	$253	$264	$271
EBIT	$1,184	$1,350	$1,810	$2,663	$2,521	$2,755	$2,691	$2,784	$2,879	$2,977	$3,079
EBIT(1-t)	$819	$923	$1,180	$1,302	$2,050	$2,240	$2,188	$2,263	$2,340	$2,420	$2,503
Plus: D&A	$123	$139	$119	$229	$226	$221	$242	$246	$253	$264	$271
Less: Capital Expenditure	411	305	199	240	556	$380	$418	$484	$456	$484	$508
Less: Inc. in Net Working Capital	($316)	($437)	($680)	($727)	($162)	($283)	$0	($154)	($151)	($100)	($145)
FCF	$847	$1,194	$1,780	$2,018	$1,882	$2,365	$2,012	$2,178	$2,287	$2,300	$2,412
Terminal Value											$51,704
				FCF for XNPV		$591	$2,012	$2,178	$2,287	$2,300	$54,116

D. Sensitivity Analysis

In addition to our upside and downside cases that include varied projections for GDP forecasts and EBIT Margins, we present a sensitivity analysis through which we shift three core factors: WACC, Terminal Growth, and (again) EBIT Margin. The figures below present our implied equity value as a percentage of current market capitalization (October 1, 2019) for each factor (i.e., 100% indicates that our modelled equity value is exactly equal to current market capitalization).

Legend:

>110%	Buy
90-110%	Hold
<90%	Sell

Figure 23: WACC and Terminal Growth

	Terminal Growth						
WACC	**2.00%**	**2.25%**	**2.50%**	**2.75%**	**3.00%**	**3.25%**	**3.50%**
6.50%	106%	112%	119%	128%	137%	148%	161%
6.75%	99%	104%	111%	118%	127%	136%	147%
7.00%	92%	98%	103%	110%	117%	125%	135%
7.25%	87%	91%	97%	102%	109%	116%	124%
7.50%	82%	86%	90%	96%	101%	108%	115%
7.75%	77%	81%	85%	90%	95%	100%	107%
8.00%	73%	76%	80%	84%	89%	94%	99%
8.25%	69%	72%	75%	79%	83%	88%	93%
8.50%	65%	68%	71%	75%	78%	82%	87%

Figure 24: EBIT Marginal and Terminal Growth

	Terminal Growth						
EBIT Margin	**2.00%**	**2.25%**	**2.50%**	**2.75%**	**3.00%**	**3.25%**	**3.50%**
48%	77%	80%	84%	89%	94%	99%	106%
49%	79%	83%	87%	91%	97%	102%	108%
50%	81%	85%	89%	94%	99%	105%	111%
51%	83%	87%	92%	96%	102%	108%	114%
52%	86%	90%	94%	99%	104%	110%	117%
53%	88%	92%	96%	101%	107%	113%	120%

6. APPENDIX 1: Forecasting Revenue by Region

Figure 25: Revenue by Business Segment

	2016	**2017**	**2018**
North America	2081	2837	2834
Asia Pacific	357	621	659
Other International	741	1148	1175

Note: Revenues exclude cost reimbursements.
Source: Marriott Intl, 2018 10K, p. 81

Figure 26: Estimated Sub-Revenue by "Other Intl" Sub-Regions in 2018

	Out of Total in 2018	***Out of 100% in 2018***	2019	2020	2021	2022	2023	2024	1st Column
Caribbean and L.A.	14%	23%	22%	22%	21%	21%	20%	20%	*[Region RevPAR*Total Rooms in Region] / [Total Intl RevPar*Total Intl Rooms]*
Europe	34%	58%	57%	57%	56%	56%	55%	55%	
Middle East and Africa	11%	19%	20%	21%	22%	23%	24%	25%	
	59%	100%	100%	100%	100%	100%	100%	100%	

Note: RevPAR figures were estimated using company-operated rooms. The percentage of international revenue from Middle East and Africa is set to increase by one percentage point per year from 2019-2024, whereas the two other regions are set to decline by 0.5 percentage point per year during the same period. This reflects Marriott's expansion plans in Africa described in Section 2.b.i.
Source: Author calculations based on data from business segment revenue data from Marriott Intl, 2018 10K, p. 81 and RevPAR data from Marriott Intl, Investor Fact Book, June 2019.

Figure 27: Proportion of Total Revenue by Region Forecasts

	Historical			Forecasts					
% of Total Revenue	2016	2017	2018	2019	2020	2021	2022	2023	2024
North America	65.5%	61.6%	60.7%	58.48%	56.99%	55.22%	53.65%	52.06%	50.55%
		-5.9%	-1.4%	-3.67%	-2.55%	-3.11%	-2.83%	-2.97%	-2.90%
Asia Pacific	11.23%	13.48%	14.12%	15.9%	17.2%	19.0%	20.8%	22.9%	25.1%
		20.1%	4.7%	12.38%	8.55%	10.47%	9.51%	9.99%	9.75%
Caribbean and Latin America	5.3%	5.7%	5.8%	5.7%	5.6%	5.5%	5.3%	5.1%	4.8%
		6.9%	1.0%	-0.32%	-1.71%	-2.40%	-3.27%	-4.25%	-5.27%
Europe	13.5%	14.4%	14.5%	14.7%	14.6%	14.5%	14.2%	13.8%	13.3%
		6.9%	1.0%	1.03%	-0.35%	-0.99%	-1.83%	-2.78%	-3.77%
Middle East and Africa	4.5%	4.8%	4.9%	5.2%	5.5%	5.7%	5.9%	6.1%	6.2%
		6.9%	1.0%	7.18%	5.48%	4.57%	3.49%	2.30%	1.11%
Total Revenue	100%	100%	100%	100%	100%	100%	100%	100%	100%

% of Total Revenue	2016								
Asia Pacific	11.2%	13.5%	14.1%	15.87%	17.22%	19.02%	20.83%	22.91%	25.15%
		20.1%	4.7%	12.38%	8.55%	10.47%	9.51%	9.99%	9.75%
Other International	23.31%	24.92%	25.17%	26.17%	26.82%	27.68%	28.47%	29.33%	30.19%
		6.9%	1.0%	3.96%	2.48%	3.22%	2.85%	3.03%	2.94%
International	34.5%	38.4%	39.3%	41.5%	43.0%	44.8%	46.3%	47.9%	49.4%
		11.2%	2.3%	5.67%	3.59%	4.12%	3.49%	3.44%	3.15%

	Historical	Forecasts					
% of Total Revenue	2018	2019	2020	2021	2022	2023	2024
Caribbean and Latin America	5.8%	6.0%	6.1%	6.3%	6.5%	6.7%	6.9%
Europe	14.5%	15.1%	15.5%	16.0%	16.5%	17.0%	17.4%
Middle East and Africa	4.9%	5.1%	5.2%	5.3%	5.5%	5.7%	5.8%
Other Intl Revenue	25.2%	26.2%	26.8%	27.7%	28.5%	29.3%	30.2%

7. APPENDIX 2: Back-Test

	2014	2015	2016	2017	2018	2019	2020
Forecasted Revenue		$2,781	-	-	$5,205		5591
Actual Revenue	$2,741	$2,856	$3,473	$4,997	$5,215	$5,379	$5,591
% Deviation		**3%**			**0.2%**		

Country Weights for Revenue Forecast				Historical	Forecasts					
	20.15	2016	2017	2018	2019	2020	2021	2022	2023	2024
North America	84%	65%	62%	61%	58%	57%	55%	54%	52%	51%
Asia and Pacific	5%	11%	13%	14%	16%	17%	19%	21%	23%	25%
Europe	5%	13%	14%	15%	15%	15%	15%	14%	14%	13%
Middle East and Africa	2%	5%	5%	5%	5%	5%	6%	6%	6%	6%
Latin America and Caribbean	3%	5%	6%	6%	6%	6%	6%	5%	5%	5%

2020-2024 Forecasts

	Historical					Forecasts					
Nominal GDP (USD)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
U.S.	$17,522	$18,219	$18,707	$19,485	$20,494	$21,345	$22,198	$23,060	$23,923	$24,813	$25,729
Growth		4.0%	2.7%	4.2%	5.2%	4.2%	4.0%	3.9%	3.7%	3.7%	3.7%
Downward Adjustment		3.0%	2.0%	3.1%	3.9%	3.1%	3.0%	2.9%	2.8%	2.8%	2.8%
Europe	$22,290	$19,136	$19,141	$20,316	$21,846	$21,791	$22,769	$23,696	$24,712	$25,743	$26,875
Growth		-14.1%	0.0%	6.1%	7.5%	-0.3%	4.5%	4.1%	4.3%	4.2%	4.4%
Downward Adjustment		-10.6%	0.0%	4.6%	5.7%	-0.2%	3.4%	3.1%	3.2%	3.1%	3.3%
Asia and Pacific	$25,831	$25,688	$26,597	$28,316	$30,116	$31,583	$34,103	$36,769	$39,524	$42,487	$45,661
Growth		-0.6%	3.5%	6.5%	6.4%	4.9%	8.0%	7.8%	7.5%	7.5%	7.5%
Downward Adjustment		-0.4%	2.7%	4.8%	4.8%	3.7%	7.2%	6.9%	6.4%	6.3%	6.1%
Middle East and Africa	$5,987	$5,270	$5,054	$5,457	$5,247	$5,321	$5,593	$5,877	$6,179	$6,498	$6,818
Growth		-12.0%	-4.1%	8.0%	-3.9%	1.4%	5.1%	5.1%	5.1%	5.2%	4.9%
Downward Adjustment		-9.0%	-3.1%	6.0%	-2.9%	1.1%	4.6%	4.5%	4.4%	4.3%	4.0%
Latin America and Caribbean	$3,204	$2,811	$2,783	$2,853	$3,146	$3,214	$3,379	$3,524	$3,684	$3,856	$4,038
Growth		-12.3%	-1.0%	2.5%	10.3%	2.2%	5.1%	4.3%	4.5%	4.7%	4.7%
Downward Adjustment		-9.2%	-0.7%	1.9%	7.7%	1.6%	4.6%	3.8%	3.9%	3.9%	3.9%

Adjustments to GDP Growth	**2015-2018**
US and Europe	75%
Asia & Pacific, M.E. & Africa, L.A. and Caribbean	90%

Note: 2016-2017 back-test excluded due to Starwood acquisition. Country rev weights are actual for North America and Asia and Pacific for 2016-2018 (others estimated). 2015 North America country weight is actual, while other regional weights are estimated based on their respective percentage of total profits.

Source: Marriott Intl, Form 10Ks, 2016-2018

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