TOURISM ECONOMICS

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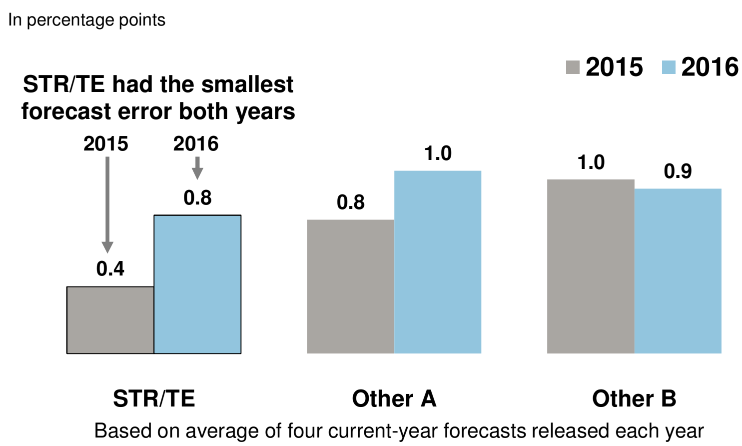
LODGING FORECAST ACCURACY

2016 ASSESSMENT

JUNE 2017

We recently revisited our previous forecasts for US lodging industry performance to assess accuracy. This evaluation shows that the STR and Tourism Economics (STR/TE) 2015 and 2016 forecasts proved more accurate than the two forecast publications that we considered as benchmarks (referenced here as Other A and Other B). In terms of current-year RevPAR, the four STR/TE forecasts published during 2016 predicted growth within 0.8 percentage points of actual, on average, while the two benchmark publications had larger average errors (0.9 and 1.0 percentage points). Similarly, the STR/TE current-year forecasts published during 2015 had an average forecast error of just 0.4 percentage points, well below both benchmark publications (0.8 and 1.0 percentage points).

Fig. 1: Current-year RevPAR growth, absolute forecast error



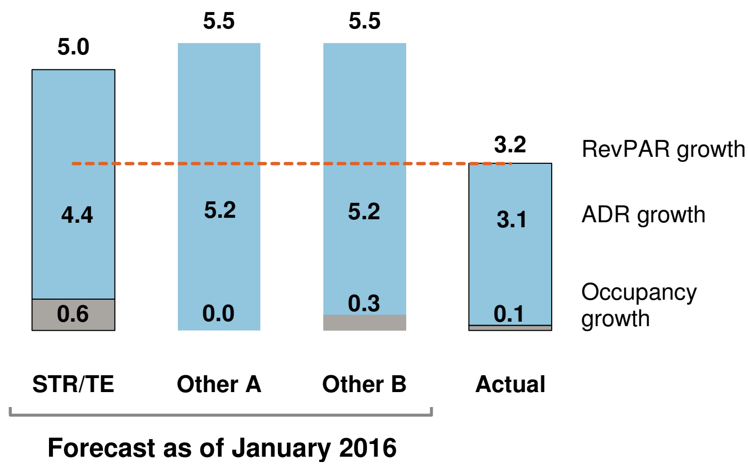
Source: STR, Inc.; Tourism Economics

Overall, we found that the STR/TE forecast was most frequently the best forecast. Among current-year forecasts, the STR/TE forecast was the most accurate – or tied with the most accurate – six out of eight instances, and among next-year forecasts, the STR/TE forecast was the most accurate in four out of eight instances.

EVALUATION OF 2016 CURRENT-YEAR FORECAST PERFORMANCE

In January 2016, the STR/TE forecast anticipated RevPAR growth would slow to 5.0% in 2016.[1] This outlook was more conservative than either of the other industry benchmarks, which both anticipated 5.5% growth. The STR/TE forecast proved to be closer to the actual RevPAR growth of 3.2%, as summarized in Figure 2.

Fig. 2: January forecast of 2016 performance



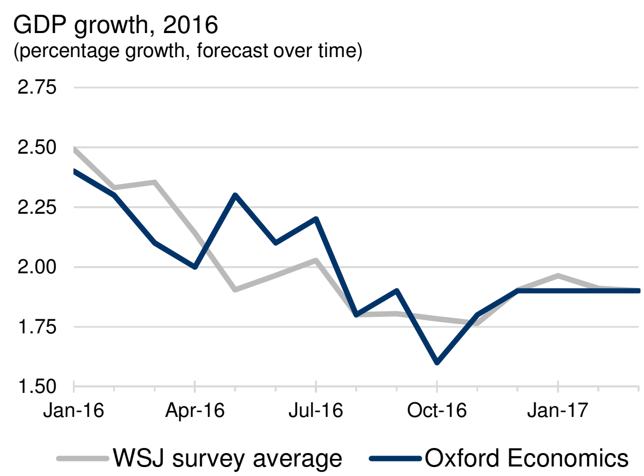
Source: STR, Inc.; Tourism Economics

As had been the case in 2015, STR/TE's January outlook for 2016 ADR growth was more restrained than the other forecast publications. However, it still proved optimistic, as ADR growth slowed from 4.5% in 2015 to 3.1% in 2016. Demand, which had exceeded expectations in both 2014 and 2015, disappointed in 2016, reaching its slowest pace post-recession. As a result, actual demand growth (1.7%) was below STR/TE's forecast (2.3%). However, actual supply growth (1.5%) was also slightly slower than expected (1.7%), and this partly offset the impact to occupancy.

Forecast accuracy depends not only on the initial outlook for the year, but also on updates during the year to incorporate actual lodging results and the evolving macroeconomic outlook. As was the case in 2015, economic conditions in 2016 turned out to be weaker than initially anticipated, contributing to forecast reductions. At the start of the year, Oxford Economics, the parent company of Tourism Economics, anticipated 2.4% GDP growth in 2016 on an annual average basis (as well as a fourth-quarter-over-fourth-quarter basis), which was slightly below the consensus outlook (2.5%), as shown in Figure 3. This outlook eased as the year progressed, dropping to 1.9% by year-end. This 50 basis-point decrease from forecast to actual GDP growth was similar to the 60 basis-point decrease in STR/TE's lodging demand growth expectations during the year.

[1] The February 2016 forecast was initially released in January 2016 at the Americas Lodging Investment Summit and is referred to as the January forecast in the text of this document.

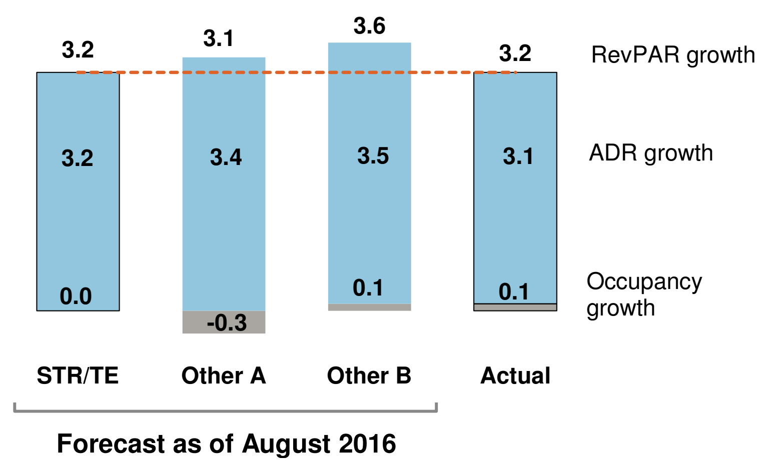
Fig. 3: Evolution of GDP assumptions



Note: Graph shows monthly releases of estimated 2016 Q4/Q4 GDP growth.
Source: Wall Street Journal; Tourism Economics

As a result of softening economic conditions, as well as weaker than anticipated ADR growth, the STR/TE RevPAR outlook decreased incrementally as the year progressed. By the August forecast release, the STR/TE RevPAR outlook had decreased to 3.2%, which ultimately matched the actual results, as shown in Figure 4.

Fig. 4: August forecast of 2016 performance



Source: STR, Inc.; Tourism Economics

We also assessed forecast accuracy by chain scale, as shown in Figure 5. Similar to 2015, the largest differences between forecast and actual were in the luxury and upper upscale segments. RevPAR growth proved weaker than initially forecast across all segments.

Fig. 5: Forecast of 2016 growth

	Forecast release month				Actual
	2016-Feb	2016-May	2016-Aug	2016-Nov	2016
US					
Supply	1.7%	1.7%	1.6%	1.6%	1.5%
Demand	2.3%	2.1%	1.6%	1.6%	1.7%
Occupancy	0.6%	0.4%	0.0%	0.0%	0.1%
ADR	4.4%	4.0%	3.2%	3.1%	3.1%
RevPAR	5.0%	4.4%	3.2%	3.1%	3.2%
RevPAR by chain scale					
Luxury	4.9%	4.2%	2.3%	1.6%	1.3%
Upper Upscale	5.2%	4.3%	2.9%	2.2%	1.9%
Upscale	4.3%	3.6%	2.6%	2.4%	2.1%
Upper Midscale	4.5%	3.8%	2.7%	2.3%	2.3%
Midscale	4.0%	2.9%	2.5%	2.2%	2.4%
Economy	4.6%	3.6%	2.8%	2.8%	3.0%
Independent	5.1%	4.9%	3.6%	4.2%	4.6%

Note: Percentages reflect forecasted growth of the annual average from 2015 to 2016. Actual 2016 is based on STR data as of May 2017.
Source: STR, Inc.; Tourism Economics

EVALUATION OF PAST TWO YEARS

As a final stage in our forecast evaluation, we reviewed our forecast track record during the past two years. Our assessment of "current-year" forecast performance is shown in Figure 6. We calculated the absolute forecast error for each published forecast as the absolute value difference between forecasted RevPAR growth and actual RevPAR growth. Additionally, we counted the number of times each publication had released the most accurate forecast in a given quarter (i.e. the closest to the actual result for the year). We performed a similar analysis of "next-year" forecast performance as shown in Figure 7.

Overall, we found that the STR/TE forecast was most frequently the best forecast. Among current-year forecasts, the STR/TE forecast was the most accurate – or tied with the most accurate – six out of eight instances, and among next-year forecasts, the STR/TE forecast was the most accurate in four out of eight instances.

As expected, current-year forecast accuracy improved as year-to-date results become available. The average absolute forecast error for current-year forecasts released in January by the three publications was 1.5 percentage points, and this narrowed for later forecast releases (May 1.0 percentage points, August 0.5, November 0.3).

Fig. 6: Forecast track record: Current-year RevPAR growth

RevPAR growth in percentage points; most accurate forecast highlighted

	STR/TE	Other A	Other B	Actual
2015				
January	**6.4**	7.4	7.6	6.2
May	**6.6**	7.0	7.2	6.2
August	**6.8**	6.9	7.2	6.2
November	**6.5**	**6.5**	6.7	6.2
2016				
January	**5.0**	5.5	5.5	3.2
May	4.4	4.6	**4.2**	3.2
August	**3.2**	3.1	3.6	3.2
November	3.1	2.9	**3.2**	3.2
Count as most accurate	**6**	1	2	
Average absolute error by year				
2015	**0.4**	0.8	1.0	
2016	**0.8**	1.0	0.9	

Note: The count as most accurate is the number of quarterly forecasts in which a given forecast publication was the most accurate of the three (or tied). Average absolute error is the absolute value difference between forecasted and actual growth as reported in May of the following year.
Source: STR, Inc.; Tourism Economics

Fig. 7: Forecast track record: Next-year RevPAR growth

In percentage points; most accurate forecast highlighted

	STR/TE	Other A	Other B	Actual
2014 forecast of 2015 growth				
January	4.7	NA	**7.5**	6.2
May	4.9	**6.4**	7.1	6.2
August	5.2	6.9	**6.7**	6.2
November	**6.2**	7.4	7.1	6.2
2015 forecast of 2016 growth				
January	**5.9**	NA	6.6	3.2
May	**5.8**	6.1	6.8	3.2
August	6.0	**5.9**	6.3	3.2
November	**5.7**	**5.7**	6.1	3.2
Count as most accurate	**4**	3	2	
Average absolute error by year (excludes January forecast)				
2014	0.8	**0.7**	0.8	
2015	**2.6**	2.7	3.2	

Note: The Other A publication did not release a next-year outlook in its January releases, and the average error by year is calculated excluding the January outlook for all three publications.
Source: STR, Inc.; Tourism Economics

BACKGROUND

Tourism Economics has worked with STR to develop a suite of models to accurately track and forecast hotel performance across selected markets worldwide. Robust equations have been econometrically estimated that closely follow past movements in hotel performance as measured by STR data. These equations are used to forecast hotel performance using economic forecasts from Oxford Economics' global macroeconomic database, and Oxford Economics' and Tourism Economics' global city and region forecasts.

The US and chain scale forecast results presented in this assessment are published as a quarterly subscription product by STR, Inc. Additional information is available online through STR or Tourism Economics.

June 15, 2017

All data shown in tables and charts are STR, Inc. and Tourism Economics' own data, except where otherwise stated and cited in footnotes.

The modelling and results presented here are based on information provided by third parties, upon which Tourism Economics has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

To discuss the report further please contact:

Adam Sacks adam.sacks@tourismeconomics.com
Aran Ryan aran.ryan@tourismeconomics.com

Tourism Economics an Oxford Economics company
303 W. Lancaster Ave, Suite 2E, Wayne, PA 19087
Tel: +1 610-995-9600
www.tourismeconomics.com