EXECUTIVE SUMMARY

EHL’s Institute of Real Estate, Finance & Economics is pleased to present the first update of the European Hotel Transaction Price Index that was initially launched last year. In 2020, European hotel transaction prices decreased on average by 11.1% vs. the prior year. The total transaction volume recorded by Real Capital Analytics (RCA) decreased to EUR 10.5 bn, which is 59% lower than the record transaction volume of 2019.

To date, the impact of the Covid-19 crisis on the European hotel real estate sector is significantly smaller than the -30% drop associated with the 2009 global financial crisis. This may be surprising, given the fact that the global pandemic has hit the hospitality industry at its core. Besides the outlook for a recovery on the back of accelerating vaccination campaigns, two major factors have contributed to the relatively modest price declines so far. First, government support for hotel staff and owners in many countries has preserved a more severe wave of bankruptcies and forced selling in the European hotel real estate sector. Secondly, liquidity interventions by central banks and policy makers have led to record high stock market indices and record low bond yields in the credit markets. As a result, cash rich investors are waiting on the sidelines, ready to invest in higher yielding investment alternatives such as hotels.
On a cautious note, governmental support programs will eventually expire. Moreover, business travel and international travel may be structurally challenged for sustained periods of time. The fundamental recovery of the hotel real estate sector may thus be more bumpy than implied by current transaction price levels. We look forward to providing the next update of the European Hotel Transaction Price Index in spring 2022.

To the best of our knowledge, this is the first transaction-based price index of the European hotel investment market documenting a significant decline of hotel prices following the Covid-19 pandemic. In our sample, the average transaction price per hotel room in 2020 increased by 17% compared to 2019. However, rather than an increase in the price level, this surprising result reflects the higher quality of hotels transacted in 2020. In fact, our 2020 hotel transaction sample is characterized by a higher share of full service vs. limited service hotels, more transactions in the central business districts of a city, and significantly higher location ratings.

The hedonic regression methodology that is the basis for our European Hotel Transaction Price Index allows for the estimation of yearly hotel transaction price levels, while controlling for the qualitative attributes of the hotels sold in a particular year. In turn, we report year-over-year price changes for a constant quality set of hotels.
DATA AND DESCRIPTIVE STATISTICS

The EHL Hotel Transaction Price Index is based on the whole spectrum of European hotel transactions recorded in RCA’s commercial real estate transaction data base. To increase the reliability of our index estimates, we focus on confirmed transaction prices of single-hotel transactions from cities with at least five transaction observations.

The 2020 version of the index is based on 1,334 hotel transaction across 26 European countries between 2007 and 2020. The data basis is representative of the diversity of the European hotel sector. The majority of transactions occurred in the UK (27%), Germany (21%), France (9%) and Spain (7%). 73% of transactions are from metropoles with more than 500,000 inhabitants, with the remaining transactions occurring in smaller cities. The share of full-service hotels as opposed to limited-service hotels is 64%. Most hotels are associated with major brands, while only 38% of them are independent.

How we increased the reliability of the index estimates

1. Our empirical approach requires us to clearly attribute an individual hotel’s price to its specific characteristics. We thus remove all portfolio transactions to exclusively focus on single-hotel transactions.

2. We remove all observations where the transaction price has been “appraised” or is based on "street talk”.

3. We only take into account hotel transactions from cities with at least five observations in total, in order to be able to estimate a city’s price level reasonably well.
METHODOLOGY

The European Hotel Transaction Price index is estimated based on the following hedonic regression model:

\[ \ln(P_{i,t}) = \beta_0 + \sum_t \delta_t D_t + \sum_j \beta_j H_{i,j} + \varepsilon_{i,t} \]

Where \( \ln(P_{i,t}) \) is the natural logarithm of the transaction price for hotel \( i \) sold in year \( t \), \( \beta_0 \) is the intercept of the regression model, \( \delta_t \) represents the coefficients for the year dummy variables (or index values) for the respective years \( D_t \) in which the transaction takes place, \( \beta_j \) represents the coefficients on the effect of the vector of hedonic price attributes \( H_j \), \( \varepsilon_{i,t} \) is the error term.

Hedonic regression-based real estate indices pool all observations throughout the sample period and use year-dummy variables \( D_t \) to estimate the transaction price level in a specific year relative to the base year. We define 2007 as the base year of the index. The estimated coefficients \( \delta_t \) for the years 2008 to 2020 thus represent the change in the price level for each year relative to 2007.

To understand the merits of hedonic regression-based indices, consider a simplistic “average transaction price per room”-index as the counter example. In years with many upscale hotel transactions in expensive cities such as London or Paris, such an index will tend to record unusually high levels of average transaction prices. In the given example, this is however largely because of the specific characteristics of the transaction sample in that period, and not necessarily because of the general hotel transaction price level in that year. Note that the latter should be the ultimate objective of a well-constructed index.

The hedonic regression approach circumvents this problem by explicitly taking into account the characteristics (e.g. Parisian full-service hotel in a strong location) of any hotel sold in a given year through the vector \( H_{i,j} \). As all the hedonic factors are thus implicitly held constant, any changes in price levels is captured only through the year-dummy variables \( D_t \). The table on the next page contains a description of the hedonic factors we control for.

**Overall the model explains 68% in the variation of European hotel transaction prices.**
# CONTROL VARIABLES

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>VARIABLE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
<td>CITY</td>
<td>City-level indicator variable (e.g. Amsterdam or Brussels), which accounts for a city’s price level.</td>
</tr>
<tr>
<td></td>
<td>CBD</td>
<td>Indicator variable denoting whether the hotel is located in a city’s central business district (CBD).</td>
</tr>
<tr>
<td></td>
<td>RATING</td>
<td>User rating of the hotel’s location obtained from Google travel.</td>
</tr>
<tr>
<td>Quality</td>
<td>AGE</td>
<td>Hotel’s age in years, included in the model as a squared term to allow for non-linear aging effects. Moreover, we employ an indicator variable denoting whether the hotel was built before 1930.</td>
</tr>
<tr>
<td></td>
<td>RENOVATED</td>
<td>Indicator variable denoting whether the hotel was renovated within the last three years.</td>
</tr>
<tr>
<td></td>
<td>RENOVATION</td>
<td>Indicator variable denoting whether the new buyer plans a renovation, implying the hotel is currently in need of renovation.</td>
</tr>
<tr>
<td>Size</td>
<td>ROOMS</td>
<td>Hotel’s number of rooms, included as a squared term to allow for economies of scale.</td>
</tr>
<tr>
<td></td>
<td>FLOORS</td>
<td>Number of floors of the hotel building relative to the average number of floors in the city.</td>
</tr>
<tr>
<td>Operations</td>
<td>FULL-SERVICE</td>
<td>Indicator variable denoting whether the hotel provides full- or limited-service.</td>
</tr>
<tr>
<td></td>
<td>INDEPENDENT</td>
<td>Indicator variable denoting whether the hotel is independent or branded.</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENTS

We are grateful to RCA for providing access to their transaction database for the production of the index. We would also like to thank Prashant Das, Emmanuel Jurczenko, and Remy Rein who have been instrumental in the early development of the index. Moreover, we are grateful to Andri Rabetanety, Emna M’Seddi, Evgenia Kozorez, as well as Sarah Faure for providing excellent research assistance in the production of the index.

LIABILITY DISCLAIMER

The European Hotel Transaction Price index is produced by EHL’s Real Estate, Finance & Economics Institute as a free service to practitioners and academics on an as-is, best-effort basis with no warranties or claims regarding its usefulness or implications. The reported indices for any year should be regarded as preliminary and subject to revision. All opinions expressed reflect the current assessment of the author. No warranty is given with regard to the content of these opinions and prognoses. In particular, no liability can be assumed for future economic and technical developments. Data information contained in this publication can change in the future without prior notice.

ABOUT THE AUTHOR

Dr. René-Ojas Woltering, is Assistant Professor of Real Estate Finance at Ecole hôtelière de Lausanne. He teaches Real Estate Finance at the undergraduate level, as well as Hospitality Real Estate Finance and Investments at the graduate level. He holds a doctoral degree in Business Administration from the University of Regensburg. His research focuses on investment strategies, real estate investment vehicles and hotels as an asset class.

His research publications have appeared in scholarly journals such as the Journal of Banking and Finance, Real Estate Economics, the Journal of Real Estate Finance and Economics, and the Journal of Real Estate Research. Dr. Woltering has gained valuable experience in the real asset management, investment management and consulting industries. He is also an awardee of several finance & investment competitions.