



EUROPEAN HOTEL PRICE

INDEX

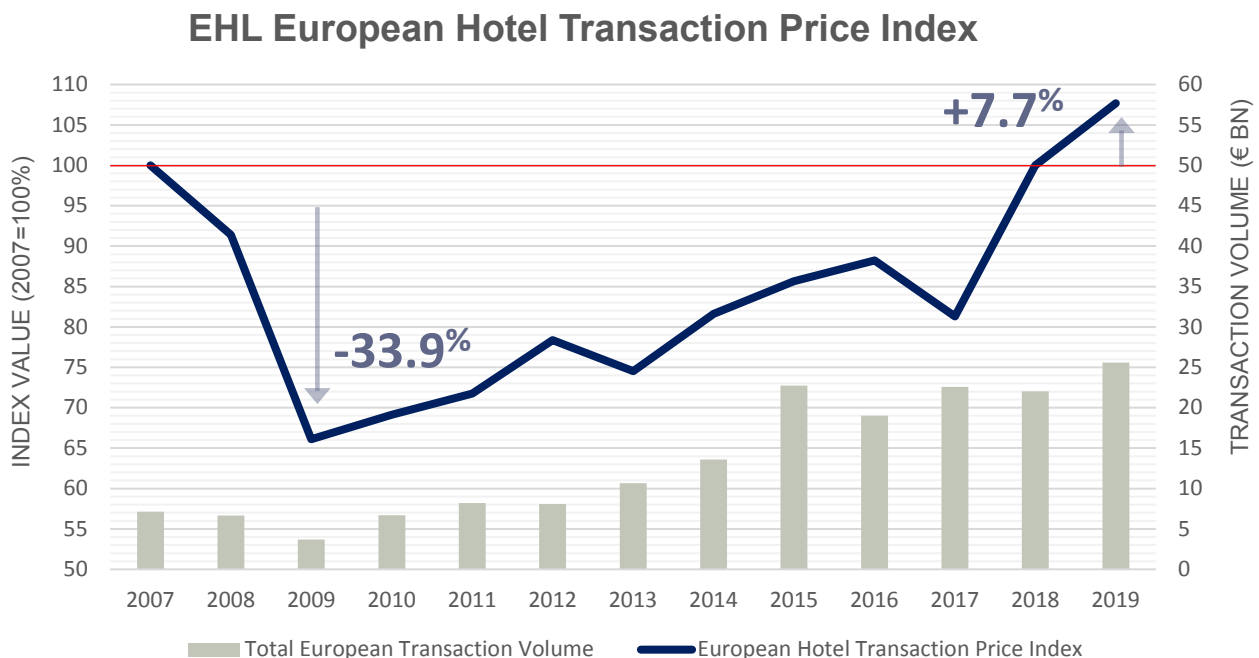
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EXECUTIVE SUMMARY

EHL’s Real Estate, Finance & Economics Institute presents the first version of the European Hotel Transaction Price Index. This project aims to contribute to increased transparency in the European hotel industry by publishing the index on an annual basis. This first version of the index is based on a total of 1247 hotel transactions across Europe since 2007. **In 2019, European hotel transactions prices increased by 7.7% vs. the prior year on the back of a record transaction volume of EUR 25.6 bn.** For the first time, the index clearly surpassed its previous peak from 2007.

The 2019 version of the index does not yet account for the impact of COVID-19. Due to the direct effects of the pandemic on global tourism and business travel, the current crisis is likely to have significant impacts on hotel transaction prices. Some lessons may be drawn from the 2009 Global Financial Crisis. The development of index reveals that, **on average, European hotel transaction prices have fallen by 33.9% compared to their previous peak in 2007.** This drawdown is comparable to the price decline experienced by US hotels over the same period. In total, it took European hotel transaction prices nine years until fully recovering to previous highs from 2007.



EHL European Hotel Transaction Price Index

| | <i>Index</i> | <i>y-o-y change in %</i> | <i>No. of obs.</i> | <i>Total Volume in € bn.</i> |
|------|--------------|------------------------------|--------------------|----------------------------------|
| 2007 | 100.0 | - | 58 | 7.1 |
| 2008 | 91.4 | -8.6% | 50 | 6.7 |
| 2009 | 66.1 | -27.7% | 47 | 3.7 |
| 2010 | 69.1 | 4.6% | 56 | 6.7 |
| 2011 | 71.7 | 3.8% | 87 | 8.2 |
| 2012 | 78.3 | 9.2% | 81 | 8.1 |
| 2013 | 74.5 | -4.9% | 110 | 10.7 |
| 2014 | 81.6 | 9.5% | 148 | 13.6 |
| 2015 | 85.6 | 4.9% | 159 | 22.8 |
| 2016 | 88.2 | 3.0% | 165 | 19.0 |
| 2017 | 81.3 | -7.9% | 160 | 22.6 |
| 2018 | 100.0 | 23.0% | 120 | 22.0 |
| 2019 | 107.7 | 7.7% | 143 | 25.6 |

A common observation in commercial real estate markets is that transaction activity drops significantly at the beginning of a crisis, as solvent owners are reluctant to sell while potential investors are cautious to buy. As a result, initial transaction activity is often limited to opportunistic investors buying from distressed sellers, often at significant discounts.

At the peak of the Global Financial Crisis in 2009, the European hotel transaction volume was almost 50% lower than in 2007 (€3.7 bn vs €7.1 bn).

Recent transaction data by Real Capital Analytics (RCA) shows that the liquidity in the European hotel transaction market has again dropped significantly. Only 113 hotels have been sold globally between April and late June, representing an 86.7% drop from the second quarter one year ago. While part of the drop may be attributed to work-from-home restrictions, it is evident that the hotel investment market is facing yet another crisis. We look forward to providing an update accounting for the impact of COVID-19 on European hotel transaction prices in the next series of the index.



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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 2019 version of the index is based on 1,247 hotel transaction across 25 European countries between 2007 and 2019. The data basis is representative of the diversity of the European hotel sector. The majority of transactions occurred in the UK (28%), Germany (22%), France (8%) and Spain (6%). 73% of transactions are from metropolises 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.



25
EUROPEAN
COUNTRIES
1 247 TRANSACTIONS

 28%

 22%

 8%

 6%

**73% TRANSACTIONS
IN METROPOLE CITIES**

64% FULL SERVICE HOTELS

38% INDEPENDENT BRANDS

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 , β_0 is the intercept of the regression model, δ_t represents the coefficients for the year dummy variables (or index values) for the respective years D_t in which the transaction takes place, β_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 δ_t for the years 2008 to 2019 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 70% in the variation of European hotel transaction prices.

CONTROL VARIABLES

| FACTOR | VARIABLE | DESCRIPTION |
|--|--------------|--|
| Location  | CITY | City-level indicator variable (e.g. Amsterdam or Brussels), which accounts for a city's price level. |
| | CBD | Indicator variable denoting whether the hotel is located in a city's central business district (CBD). |
| | RATING | User rating of the hotel's location obtained from Google travel. |
| Quality  | AGE | 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. |
| | RENOVATED | Indicator variable denoting whether the hotel was renovated within the last three years. |
| | RENOVATION | Indicator variable denoting whether the new buyer plans a renovation, implying the hotel is currently in need of renovation. |
| Size  | ROOMS | Hotel's number of rooms, included as a squared term to allow for economies of scale. |
| | FLOORS | Number of floors of the hotel building relative to the average number of floors in the city. |
| Operations  | FULL-SERVICE | Indicator variable denoting whether the hotel provides full- or limited-service. |
| | INDEPENDENT | Indicator variable denoting whether the hotel is independent or branded. |

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LIABILITY DISCLAIMER

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