S&P Dow Jones Indices

A Division of S&P Global

Halifax House Price Index Family 2019 (HHPI2019)

Benchmark Statement

Mar 2024

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General Disclosures

Benchmark family name	Halifax House Price Indices 2019 (**HHPI2019**)
Benchmark administrator	**IHS Markit Benchmark Administration Ltd**. (**IMBA UK**)
Date of initial publication of this document	12 November 2020
Date of last update to this document	13 March 2024
ISIN (where available)	There are presently no ISINs available or accessible for the benchmarks covered by this Benchmark Statement.
Determination by contributions of input data	The administrator receives contributions of "input data" (as defined by the **BMR**) in relation to this family of benchmarks. The HHPI utilizes data relating to approved mortgage transactions (**Mortgage Offer Data**) entered into by Lloyds Banking Group (**LBG**). The Mortgage Offer Data is provided by LBG, the parent entity of Halifax.
Qualification of the benchmark family	The HHPI2019 indices are administered as significant benchmarks.

Market or Economic Reality of the Benchmark

General description of the market or economic reality

The HHPI2019 is a barometer of UK house prices based on LBG Mortgage Offer Data and has historical data back to January 1983. The HHPI2019 Methodology was developed to better reflect the current structure of the UK housing market and, in particular, changes in the mix of UK housing stock in terms of both geographical and physical housing attributes.

Geographical boundaries of the market or economic reality

The HHPI measures house prices across the UK. A headline, UK aggregate HHPI2019 measure is produced each month alongside monthly measures for Wales, Scotland and Northern Ireland, and nine English Regions.

Other relevant information relating to the market or economic reality

The HHPI2019 is derived from mortgage transaction data from a single provider (LBG) that is one of the UK's largest mortgage lenders, with mortgage offers comprising around 15%–20% of the total UK mortgage market.

Potential Limitations of the Benchmark

Circumstances in which we would lack sufficient input data to determine the benchmark according to the methodology

The statistical reliability of the HHPI2019 would be compromised if an extreme event caused an unexpectedly sharp decline in the volume of Mortgage Offer Data in any given month and in turn the volume of mortgage transactions that were available for input into the HHPI2019 model.

During the period in which the HHPI2019 has been produced, volumes of Mortgage Offer Data have only once (during UK government-imposed lockdowns in response to the Covid-19 global pandemic) been at a level that has led to considerable challenges in producing all HHPI2019 benchmarks. In a scenario where the number of mortgage transactions received from LBG fell below general statistical standard guidelines and to the extent that this might have a material impact on the statistical integrity of the HHPI2019, the Index Committee would make a decision as to whether the family of benchmarks should be published.

For a publication in this scenario the Administrator would make HHPI2019 users aware that the family of benchmarks (or individual benchmarks that are part of the family) has been based on an unusually low volume of transactions and the factors that had driven this. The Index Committee may also consider consulting with users around temporary changes to the methodology to address data sufficiency, e.g. inclusion of mortgage transaction data from earlier periods in the calculation of the model. The accuracy of the data inputs would not be affected by any extreme event and quality checks are in place to verify data quality.

The Index Committee serves as the index governance body tasked with ensuring that:

- The index objective is clearly stated, and the index is expected to achieve its objective.
- The procedures documented in the methodology are transparent and clearly described.
- The eligible universe, selection criteria and weighting method for constituents are fully detailed and described.
- All aspects of an index – data, calculation, maintenance, presentation and governance – are consistent with IMBA's practices and any exceptions are explicitly discussed and decided upon by the Index Committee.

Circumstances in which the degree of liquidity of the underlying market becomes insufficient to ensure the integrity and reliability of the benchmark determination according to the methodology

See above.

Exercise of Expert Judgment and Discretion

Position of each function or body that may exercise discretion in the calculation of a benchmark and governance thereof

These indices are rules based and do not typically permit the use of discretion unless there are exceptional circumstances that are not addressed by either the index rules or an administrator policy. Such scenarios may include (but are not limited to):

- Failure of data providers;
- Significant changes to the underlying market;
- Action by governmental or regulatory bodies that causes market disruption; and
- Events beyond human control.

In the event that IMBA needs to take action or make a decision that has not been foreseen by the methodology or associated policy, the Index Committee conveys and makes a determination that is consistent with the objective of the index in question and that causes minimal disruption to index stakeholders.

Ex-post evaluation process

As above, the exercise of judgment or discretion in the calculation of the HHPI2019 would need to be approved by the Index Committee prior to the publication of the HHPI2019 to ensure that no conflict of interest arises and the index continues to reflect the underlying economic reality. A record of the Index Committee decision detailing the nature of the expert judgment or exercised discretion is maintained.

Methodology Changes and Benchmark Cessations

The methodology

1. The HHPI2019 methodology is applied to produce a number of standardised indices covering different categories of houses (all, new and existing) and of buyers (first-time buyers and former owner-occupiers). Index levels are provided to registered users on a monthly basis for the UK as a whole and on a quarterly basis for UK regions. Monthly data are also available for all UK regions. Licensed users receive the HHPI2019 data updates through a Secure File Transfer Protocol site. The need for "standardisation" arises out of the fact that no two houses are alike: they may differ according to a variety of quantitative and qualitative **Property Characteristics** relating to the physical attributes of the houses themselves or to their locations. Thus, analyses of average house price differences between one region and another, or of changes in average prices over time, are not based on the comparison of like with like if the "characteristics-mix" of houses traded is not standardised. The problem of comparability cannot be tackled without information about the Property Characteristics, as well as the price, of each house included in the Mortgage Offer Data. Given the great variety of combinations of Property Characteristics possessed by houses and given also a desire to measure their influence at regional, as well as at national levels, it was necessary to establish a data-capturing system large enough to provide representative coverage of all house transactions in each region of the UK. As a leading mortgage lender in the UK, Lloyds Banking Group has been in an ideal position for well over three decades to obtain large-scale representative data which are used in the HHPI2019 model. The HHPI2019 Methodology was developed to better reflect the current structure of the UK housing market and, in particular, changes in the mix of UK housing stock in terms of both geographical and physical housing attributes compared to the original 1983 model (HHPI1983).

2. The methodology is subject to at least annual review.

3. All underlying Mortgage Offer Data comes from a single source – LBG. The data comprise approved mortgage transaction data for mortgages granted by LBG in the latest month. The Mortgage Offer Data not only records the price of each property, but also defined Property Characteristics such as location, age of property and the number of habitable rooms. The HHPI2019 is calculated using what is known as a **Hedonic Price Regression**. In this hedonic approach to price measurement, goods are valued not for themselves as such but for the set of attributes which they possess. In the case of housing, prices will reflect the valuation placed by purchasers on the particular set of locational and physical attributes (or characteristics) possessed by each house. Pre-defined exclusion criteria determine which mortgage transactions are included in the model and which are excluded. Once included, there is no prioritization of the mortgage transaction data. The volumes of mortgage transactional data used in the model for HHPI2019 is closely monitored on a monthly basis. The model does not use any extrapolation for missing data.

4. The exercise of Expert Judgment or Discretion governed as described above. When applied, the exercise of judgment or discretion in the calculation of the HHPI2019 is determined by diagnostics derived from a monthly monitoring pack that are used to review the performance of the HHPI2019 model and the coefficients of each of the Property Characteristics that are used in the hedonic regression model that calculates the family of benchmarks. This analysis is then used to determine any exercise of judgment or discretion in the calculation of the family of benchmarks. Any proposal around the exercise of judgment or discretion would need to be approved by the Index Committee prior to the publication of the HHPI2019 family of benchmarks.

5. During the period in which the HHPI2019 has been produced, volumes of Mortgage Offer Data have only once (during UK government-imposed lockdowns in response to the Covid-19 global pandemic) been at a level that has led to considerable challenges in producing all HHPI2019 benchmarks. In a scenario where the number of mortgage transactions received from LBG fell below general statistical standard guidelines and to the extent that this might have a material impact on the statistical integrity of the HHPI2019, the Index Committee would make a decision as to whether the family of benchmarks

should be published. For a publication in this scenario IMBA would make HHPI2019 users aware that the family of benchmarks (or individual benchmarks that are part of the family) has been based on an unusually low volume of transactions and the factors that had driven this. The Index Committee may also consider consulting with users around temporary changes to the methodology to address data sufficiency, e.g. inclusion of mortgage transaction data from earlier periods in the calculation of the model. The accuracy of the data inputs would not be affected by any extreme event and quality checks are in place to verify data quality.

6. Any errors detected in the data would be raised with LBG – the sole provider of data – and resolved as quickly as possible. If necessary, publication of the family of benchmarks would be delayed while the errors were resolved. If a re-determination of any benchmark was required, this would be republished alongside a clear explanation to all users of the reason for the re-determination and the difference between the initially published and re-determined data. Further details of the *HHPI2019 Restatement Policy* are available here.

7. The identification of potential limitations of the benchmark, including its operation in illiquid or fragmented markets and the possible concentration of inputs is covered above.

The HHPI2019 methodology, as described in the index methodology (as amended, replaced or substituted from time to time) is available on the website, www.spglobal.com/spdji/en.

Rationale for adopting the methodology

The core aim of HHPI2019 is to provide a robust measure of changes in residential property prices. The key elements of the methodology of the HHPI2019 benchmarks are the sources of input data and the rules for inclusion / exclusions.

Sources of input data - The sole source of data for HHPI2019 remains Lloyds Banking Group (LBG). As a leading mortgage lender in the UK, LBG are in an ideal position to provide not only price information related to property transactions but also several attributes related to the type (detached, semi-detached, terraced etc.), size (bedrooms, floor space in square metres), age (new/old), and location. These attributes are key to conducting the hedonic regression technique used to create a "standardised" UK property and subsequently generate HHPI2019 house price indices. Note the hedonic regression technique is a common statistical approach used in the calculation of house price indices around the world.

Rules for inclusion / exclusions of input data - Several types of mortgage approval transactions are excluded from index generation. These are typically viewed as properties not subject to the typical survey process, agreed prices that do not represent "free" or "normal" market transactions, or those properties not used for residential purposes. Examples here would include re-mortgages, business use, capital raising mortgages and discounted mortgages relative to market value e.g. the "Right-to-Buy" scheme.

A notable feature of the HHPI2019 methodology is a weighting system based on the chain-linking approach used by statistical agencies around the world. The approach reflects the idea that the mix of properties and property features is not necessarily constant and can change between periods. With this in mind, the HHPI2019 uses a basket of attributes fixed to a 12-month period and subsequently updated once a year using three years of LBG transactional data. An exception here is the regional weights for the UK level indices, which are calculated using external data from the Land Registry, HMRC and the Office for National Statistics (ONS). This is to help guard against any regional biases that may be present in the LBG transactional dataset.

Possible impact of changes to, or the cessation of the benchmarks upon the financial contracts, financial instruments that reference the benchmark or the measurement of the performance of investment funds

The HHPI2019 is used primarily for capital and impairment purposes, including for assessment of the quality of mortgages on a lenders' books and variances in Loan to Value (LTV) ratios resulting from

changes in UK house prices. The HHPI2019 is used in a similar way (i.e. calculating LTV) in large lenders' Covered Bonds Programmes. The impact of a cessation of the HHPI2019 would be that users would need to look to other sources of UK house price data against which to assess their mortgage lending and may have a direct impact on investors with positions in financial contracts or financial instruments referencing the HHPI2019. We are aware of a small number of financial instruments which directly use the HHPI2019 as the determinant. Those product issuers would also need to consider alternative sources of UK house price data in order to settle those instruments.

Where it consults, will make reasonable efforts to address stakeholder concerns expressed in response to consultations and to allow for reasonable advance notice for stakeholders to accommodate changes, unwind existing positions in contracts/instruments referencing the benchmark, or seek an appropriate substitute benchmark.

There may be circumstances where external factors beyond the control of IMBA could lead to short-term changes or the termination of the Index, e.g. where a continuous disruption of the underlying market or an underlying data point requires a change to the methodology or impacts the viability of the index. In such cases, IMBA may shorten the notice period as is appropriate to the urgency of the situation.

Further details of the *S&P Dow Jones Indices Index Cessation Policy* can be found here.

Key Terms

BMR	means the retained EU law version of the Benchmarks Regulation ((EU) 2016/1011) that has applied in the UK from the end of the Brexit transition period (11pm on 31 December 2020).
Board	means the Board of Directors of IMBA UK.
ESG	means Environmental, Social, Governance.
Hedonic Price Regression	in this hedonic approach to price measurement, means that goods are valued not for themselves as such but for the set of attributes which they possess.
HHPI2019	means Halifax House Price Index 2019 (HHPI2019).
IHS Markit Benchmark Administration Ltd. (IMBA)	means the administrator, which is the UK entity authorised by the FCA responsible for the daily provision of the HHPI2019.
Index Committee	means the committee with responsibility for overseeing day to day administration of the HHPI2019.
Internal Oversight Committee	means the Internal Oversight Committee, the independent function which coordinates and directs IMBA's benchmark oversight function.
LBG	means Lloyds Banking Group.
Mortgage Offer Data	means approved mortgage transactions entered into by LBG. This covers all data relating to the property on which a mortgage has been offered. This information will include the price of the property against which the mortgage is being offered as well as the Property Characteristics such as type (detached, semi-detached, terraced, flat, bungalow), size, age and location.
Property Characteristics	mean the variety of characteristics used by the index to determine a standardised house in the UK which, when taken together, help to explain the majority of the variation in house prices.

Additional Information

Updates to this Benchmark Statement

This Benchmark Statement will be updated whenever the information it provides is no longer correct or sufficiently precise and at least where:

(a) there is a change in the type of the benchmark;

(b) there is a material change in the methodology for determining the benchmark or, where the Benchmark Statement refers to a family of benchmarks, in the methodology for determining any benchmark within the family of benchmarks.

This Benchmark Statement will be updated at least every two years.

Further Information

For more information, including methodology documents please visit https://www.spglobal.com/spdji/en/.

Appendix I - Consideration of ESG Factors

Type of benchmark family	Other benchmarks
Name of the benchmarks	HHPI2019 Indices
Does the benchmark pursue ESG objectives?	No
Where the answer to the above question is negative,is any EU Climate Transition Benchmark or EU Paris-Aligned Benchmark available in the portfolio of IMBA UK or does IMBA UK have benchmarks that pursue ESG objectives or benchmarks that take into account ESG factors?	Yes

Appendix II - Disclosure of the Alignment with the Objectives of the Paris Agreement

Does the benchmark align with the target of reducing carbon emissions or the attainment of the objectives of the Paris Agreement?	No
The temperature scenario, in accordance with international standards, used for the alignment with the target of reducing GHG emissions or attaining of the objectives of the Paris Agreement.	Not applicable. The benchmarks do not pursue the objective of seeking to reduce carbon emissions or attaining the objectives of the Paris Agreement and therefore a temperature scenario is not relevant to the benchmarks.
The name of the provider of the temperature scenario used for the alignment with the target of reducing GHG emissions or the attainment of the objectives of the Paris Agreement.	Not applicable
The methodology used for the measurement of the alignment with the temperature scenario.	Not applicable
The hyperlink to the website of the temperature scenario used.	Not applicable
Date on which information has last been updated and reason for the update.	Not applicable

Disclaimer

Performance Disclosure/Back-Tested Data

Where applicable, S&P Dow Jones Indices and its index-related affiliates ("S&P DJI") defines various dates to assist our clients in providing transparency. The First Value Date is the first day for which there is a calculated value (either live or back-tested) for a given index. The Base Date is the date at which the index is set to a fixed value for calculation purposes. The Launch Date designates the date when the values of an index are first considered live: index values provided for any date or time period prior to the index's Launch Date are considered back-tested. S&P DJI defines the Launch Date as the date by which the values of an index are known to have been released to the public, for example via the company's public website or its data feed to external parties. For Dow Jones-branded indices introduced prior to May 31, 2013, the Launch Date (which prior to May 31, 2013, was termed "Date of introduction") is set at a date upon which no further changes were permitted to be made to the index methodology, but that may have been prior to the Index's public release date.

Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index's launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using "Backward Data Assumption" (or pulling back) of ESG data for the calculation of back-tested historical performance. "Backward Data Assumption" is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as "product involvement") were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on "Backward Data Assumption" please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific data points and relevant time period for which backward projected data was used. Index returns shown do not represent the results of actual trading of investable assets/securities. S&P DJI maintains the index and calculates the index levels and performance shown or discussed but does not manage any assets.

Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the Index or investment funds that are intended to track the performance of the Index. The imposition of these fees and charges would cause actual and back-tested performance of the securities/fund to be lower than the Index performance shown. As a simple example, if an index returned 10% on a US $100,000 investment for a 12-month period (or US $10,000) and an actual asset-based fee of 1.5% was imposed at the end of the period on the investment plus accrued interest (or US $1,650), the net return would be 8.35% (or US $8,350) for the year. Over a three-year period, an annual 1.5% fee taken at year end with an assumed 10% return per year would result in a cumulative gross return of 33.10%, a total fee of US $5,375, and a cumulative net return of 27.2% (or US $27,200).

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