

bra Real Estate Index (braREX)

Methodology

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Introduction

The bra Real Estate Index (braREI) is designed to be a reliable and consistent benchmark for commercial real estate prices in the Nigeria. The index measures the change in real estate prices by property sector and geographic region. The bra Real Estate Indices comprises real estate indices: national composite, geographic regions and national property sectors.

Partnership

The indices are maintained and published under agreements between Brickfield Road Associates and other real estate firms.

Highlights

The bra Real Estate Indices are computed using a stock value, or market capitalization-weighted, methodology. This approach, the accepted standard for index construction, utilizes average transaction prices per square foot and commercial real estate stock data to derive index levels.

Transaction prices for closed sales/rent/lease are collected and filtered to remove extremely high-and-low prices. The prices are compiled and derived mean prices are combined with weighting factors based on the size, in square feet, of commercial stock in the reference year to calculate the indices. Divisors are used to permit adjustments for changes in stock data and other necessary index adjustments.

Eligibility Criteria

To be eligible to be included in the bra Real Estate Indices, property sales/rent/lease must be identified as closed transactions in the defined commercial real estate regions and sectors. Closed commercial transactions are those where the escrow has closed and the title has been transferred to the new owner. There are no transactions included in the index that are appraisals, just listed, sales/rent/lease pending, or in escrow.

Index Construction

The bra Real Estate Index is based on commercial real estate sales/rent/lease transaction prices. These indices are constructed to account for movements in commercial real estate prices at the property sector and regional level.

Approaches

The indices are calculated monthly, using a three-month moving average. Commercial real estate sale transactions are aggregated into rolling three-month periods for the calculation of constant quality mean prices per square foot. Commercial stock weights are, then, applied to calculate each index. In each reporting period, the index is based on three months of closed transactions. The typical lag from transaction close to data reporting is three months.

Index Calculations

Composite real estate index is analogous to cap-weighted equity indices, where the aggregate value of the commercial real estate stock represents the total capitalization of the regions or property types included in the index. A constant quality average price per square foot is calculated monthly for each metro group by sector, using average algorithm.

Property Sector Definitions

Transactions are also classified by property sector. The braREX is based on a refined set of property classifications as follows:

- **Apartments:** includes flat, block of flats, detached house, semi-detached house, semi-detached house with boys' quarter, terrace house, duplex, bungalow, etc.
- **Office:** includes Central Business District or suburban office properties, shopping mall, block of flats, detached house, semi-detached house, duplex, bungalow, etc
- **Retail:** includes grocery-drug anchored centres, power centres, factory outlets, big box retail, hotel, stand-alone retail grocery, auto and hardware stores over 10,000 square feet, super luxury stand-

alone, drug and pharmacy stand-alone, bank branches, entertainment, gas stations, and video stores.

- **Warehouse:** includes warehousing and distribution facilities over 20,000 square feet, manufacturing, truck terminals, services centres, laboratory, production studios, showrooms, cold storage and auto repair.

Index Construction Process

The bra Real Estate Indices (braREX) is based on closed transaction prices. Real estate price data are collected and screened for reasonableness and to eliminate duplicate records. Transactions that do not meet completeness standards are eliminated. Closed transactions with extreme prices per square foot are excluded from the final calculations. Transaction data are collected at the beginning of each month for the prior four months. For example, in early December transactions data are collected and include closed transactions for the months of August, September, October, and November. This includes all new transactions data that occurred and were reported for these months. The earliest possible transaction included in the December collection is one with an August 1st transaction date. The following illustrates data collection dates and 3-month rolling, closed sales/rent/lease by month.

Index Calculation

The braREX is a market capitalization-weighted index. The approach is similar to the calculation of stock market indices. [Prices per square foot for real estate properties are analogous to stock prices, and the number of square feet in a region or of a particular property type is analogous to a company's shares outstanding.](#) A divisor, or scale factor, is used so that the stock values can be adjusted without causing discontinuities in the index.

The basic calculation is:

$$Index = \frac{\sum P_i * S_i}{Divisor} \quad (1)$$

Where:

P_i = Price per square foot of property type/region/metro group i

S_i = Square feet of property type i

The initial value of the divisor is established when the base period value of the index is set. For these indices the base period is January 2010 and the base value is 100. Stock values are updated periodically based on data provided. When these values are updated, the divisor is recalculated to prevent any jumps in the index level associated with revised stock values. braREX is a family of indices covering property types, regions and a national index. While the regions and property types are described as sub-indices, each index is calculated from the underlying property stock and price data as shown in equation (1) above.

Index Maintenance

Index Restatement

Restatements to the real estate indices will only be made in extreme circumstances such as market disruptions, data collection failures or catastrophic events.

Base Date

The indices have a base value of 100 on January 2010.

Commercial Stock Data Updates

Reference year commercial stock (in square feet) used to calculate national, regional and sector level composite indices are updated every five years, when new metro/county level inventory data have been made available.

Index Governance

Index Committee

The bra Real Estate indices are maintained and governed by the bra Index Committee. Three members are appointed by bra, two members are appointed by bra; Brickfield Road Associates designates the Committee Chairman. The Index Committee has full discretion over index policy including calculations, revisions, restatements, methodology and any other matters related to the braREX to determine how the indices are calculated. Brickfield Road Associates considers information about changes to the bra Real Estate indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

Data Quality Control

Data Quality and Filtering

Closed transactions used in the braCREX are collected and processed on a monthly schedule. Data sources include commercial vendors, brokerage firms, appraisers, mortgage brokers, and publicly traded operating companies.

Data Review and Verification

Transaction data are reviewed to identify and eliminate duplications (the same properties that have been reported by two or more data sources). Validation tests are conducted on random samples of transactions at the national, regional and property sector level to verify price, property size, use classification, and location. Extreme values (outliers) are eliminated from final mean price calculations.

Minimum Sample Size

Minimum sample sizes for each region and property sector are determined to maintain acceptable statistical precision. If the sample size is deemed too small, the Index Committee will be notified and will review conditions. The Index Committee will determine when index calculation can resume with acceptable precision. In the interim the Index Committee may decide, among other options, to publish the previous index value, expand the data sample over a longer averaging time period, combine two or more property types or regions, or suspend publication.

Index Policy

Announcements

Announcements of index levels are made monthly and press releases are posted at www.bra-limited.com, and are released to major news services.

Index Dissemination

The bra Real Estate Indices are published monthly immediately after the index is calculated.



bra Contact Information

Index Management

Abiodun Akinkunmi, Ph.D.

abbie@bra-limited.com

Oguntoyinbo, Bolanle F., MSc (Economics)

boguntoyinbo@bra-limited.com

Chairman of the Index Committee

+234 1 773 8300

+234 1 773 8300

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