

HOUSING PRICE INDEX

JULY 2015



Highlights

1 House Price Index represents a softening of house prices in the second quarter signalling stabilisation of the overall house price movements

2 Apartment prices appear to be moving more than those of bungalows and maisonettes. This confirms the fact that the rising middle class is preferring apartment to bungalows and maisonettes as they are relatively more affordable.

3 similarly, consistent with Quarter 1 of 2015, the demand for houses on offer was influenced by the location of the house (therefore the kind of social amenities available), a preference for gated communities (implying the importance of convenience and security), and the characteristics that will be appealing to the increasingly discerning households

4 there is a negative relationship in price movements between bungalows and the apartment prices across all the regions. This confirms the possibilities of redevelopment of old bungalows into apartments as we cited in the earlier index release.

House price movements

The second quarter of 2015 represented a softening of house prices as manifested by their increase being a marginal 0.2 percent compared to the previous quarter's 2.75 percent increase (**Figure 1**). In essence, this signals the somewhat stabilisation of the overall house prices in line with the demand-supply dynamics. In particular it is a reflection of demand adjustment for a given level of supply of housing units across all market segments, therefore is in line with the overall economic conditions.

Figure 1: Overall Price Change (%)



The slowdown in the overall economic growth from 5.7 percent in 2013 to 5.3 percent in 2014, and consequently expectations that the projected resumption of robust growth may not be realised is filtering into demand for houses, especially in the low and middle income segment. Further, the clear signs of emerging macroeconomic instability as reflected in the exchange rate volatility and inflationary pressure have necessitated the tightening of monetary policy and therefore a shift of expectations towards a high interest rates regime. This has apparently shaped the decision making of households seeking to take mortgages towards home acquisition. Indeed the financial performance of key mortgage lenders reflect stable earnings for the first half of the year, confirming the influence of demand on the softening of house prices.

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The Evolution of the KBA Housing Price Index (KBA-HPI), whose computation is based on the Laspeyers Index methodology (see Technical Note), since the first quarter of 2013 is shown in **Table 1** and **Figure 2.**

Table 1: Price Movement Series

Period	Q-on-Q Index*	With Q1_13 as Fixed Base
Q1-2013	100.00	100.00
Q2-2013	101.42	101.42
Q3-2013	103.25	101.46
Q4-2014	100.66	101.63
Q1-2014	101.86	102.13
Q2-2014	103.45	102.29
Q3-2014	101.87	102.44
Q4-2015	102.18	102.71
Q1-2015	104.99	102.97
Q2-2015	105.01	103.88

* Index with a moving base





Drivers of the price changes

The determination of the qualitative and quantitative parameters that drive the house price changes is based on the estimation of a hedonic function. The estimates of the hedonic function for Quarter 2 of 2015 are given in **Table 2** while for comparison purposes those for Quarter 1 of 2015 are given in **Table 3**.

• The estimates indicates a revealed preference of houses as influenced by their size as can be inferred from the plinth area, number of bedrooms, whether the house has a backyard and to a lesser extent whether a house has domestic staff quarters. This is consistent with what was observed in Quarter 1 of 2015.

 Similarly, consistent with Quarter 1 of 2015, the demand for houses on offer was influenced by the location of the house (therefore the kind of social amenities available), a preference for gated communities (implying the importance of convenience and security), and the characteristics that will be appealing to the increasingly discerning households.

Sub - regional Indices

The index with Q1 2013 as the fixed base indicates (Table 4) that apartment prices appear to be moving more than those of bungalows and maisonettes. This confirms the fact that the rising middle class is preferring apartment to bungalows and maisonettes as they are relatively more affordable among the three housing types. On a regional basis we however note that the prices for Region 2 and Region 3 are moving faster compared to prices in Region 1 on guarterly basis¹. This on account of the fact that in Regions 2 and 3, the crude average price is on upper level (beyond KES 25 Million for Region 3 and between 10 Million to 19 Million for Region 2) which could be a pointer to for skewed market in favour of such regions driven by effective demand.

The index based on moving base (**Table 5**) reveals a similar trend. Apartment prices seem to be changing faster across all the regions compared to maisonettes and bungalows. Comparing all the regions, prices for Regions 2 and 3seem to be in a general upward trend, confirming the



Apartment prices changed faster across the regions than maisonettes and bungalows.

skewed market in favour of areas in Regions 2 and 3. Further looking at both the moving base and the fixed base sub regional indices, it's clear that there is a negative relationship in price movements between bungalows and the apartment prices across all the regions. This confirms the possibilities of redevelopment of old bungalows into apartments as we cited in the earlier index release.

Technical Note

The index follows a Laspeyers index method. In this method, the index is computed by getting the ratio the estimated current quarter price from the hedonic method multiplied the weights of the preceding quarter to the price of the preceding quarter multiplied by the respective weights of that quarter.

The weights of the quantitative variables are obtained by getting their respective mean values. For the dummy variables however, their weights are computed as the proportions of the number of houses possessing a certain attribute to the total number of houses. Thus the index is computed by the formular:

$$Index = \sum_{i=1}^{n} w_i \frac{\overset{\Lambda}{\underset{i=1}{P}}}{\overset{\Lambda}{\underset{P}{P}}} = \frac{\sum_{i=1}^{n} w_0 \overset{\Lambda}{\underset{i=1}{P}}}{\underset{\sum_{i=1}{n}}{\overset{\Lambda}{\underset{W}{P}}} \overset{\Lambda}{\underset{P}{P}}$$

Where; P_{I} is the shadow price from the estimated hedonic function for the current quarter;

 P_{o}^{A} is the shadow prices from the estimated hedonic function for the preceding quarter;

and w_0 are the weights of the respective variables for the preceding quarter.



¹ See The definition of sub-regions on page 5



Table 2: Housing Price Index Quarter 2_2015

				Number of obs =	1549
Source	SS	df	MS	F(19, 1529) =	383.22
Model	778.397411	19	40.9682848	Prob > F =	0.0000
Residual	163.459877	1529	0.106906395	R-squared =	0.8264
Total	941.857289	1548	0.608434941	Root MSE =	0.8243

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Con1	. Interval]
LN AREA	0.2714414	0.0143168	18.96	0.000	0.2433587	0.2995241
Bedrooms	0.1374258	0.0230495	5.96	0.000	0.0922137	0.1826378
Bathrooms	0.0564309	0.025917	2.18	0.030	0.005594	0.1072676
Age	-0.1169339	0.0135849	-8.61	0.000	-0.1435809	-0.0902869
Floors	-0.0906218	0.0093981	-9.64	0.000	-0.1090563	-0.0721872
Location	0.0822811	0.0034404	23.92	0.000	0.0755327	0.0890294
Backyard	-1.800684	0.1141361	-15.78	0.000	-2.024564	-1.576804
Balcony	0.398455	0.0386545	10.31	0.000	0.3226336	0.4742763
Dsq	-0.0822993	0.0312342	-2.63	0.409	-0.1435657	-0.0210329
Gymn	0.4789688	0.070293	6.81	0.000	0.341088	0.6168496
Spool	0.362732	0.0549305	6.60	0.000	0.254985	0.4704791
Socialammenities	0.1356015	0.0238121	5.69	0.000	0.0888937	0.1823092
Garageparking	0.6958917	0.0304572	22.85	0.000	0.6361493	0.7556341
Masterensuite	0.2534526	0.0289325	8.76	0.000	0.196701	0.3102043
Separatedining	0.0405952	0.0588494	0.69	0.490	0.074839	0.1560293
Gatedcommunity	0.9606869	0.067051	14.33	0.000	0.8291653	1.092209
Borehole	0.2260852	0.0393166	5.75	0.000	0.1489652	0.3032053
Guestrm	0.0622523	0.1664845	0.37	0.709	-0.2643099	0.3888145
Jaccuzi	0.0464504	0.068501	0.68	0.498	-0.0879155	0.1808162
Constant	12.96218	0.1020273	127.05	0.000	12.76205	13.16231

Housing Price Index Quarter 2, 2015





Table 3: Housing Price Index Quarter 1 _2015

SS (Model) = 474.3157 SS (Residual) = 40.72043 MS (Model) = 21.55980 MS (Residual) = 0.05128	77 36 98	df (Model) df (Residual) Prob > F obs	= 22 = 794 = 0.0000 = 817	R-squared = 0.9209 Adj R-squared = 0.9187			
LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. l	nterval]	
LN Area	0.0436	0.0507	0.86	0.3910	-0.0560	0.1431	
Bedrooms	0.1247	0.0228	5.48	0.0000	0.0800	0.1694	
Bathrooms	-0.2129	0.0450	-4.73	0.0000	-0.3012	-0.1245	
Туре	-0.0079	0.0440	-0.18	0.8580	-0.0943	0.0786	
Age	-0.2982	0.1821	-1.64	0.1020	-0.6556	0.0592	
DQ_1	0.1861	0.1139	1.63	0.0000	0.7626	1.2097	
Location	0.0136	0.0094	1.45	0.1470	-0.0048	0.0320	
Floors	0.0935	0.0166	5.62	0.0000	0.0609	0.1261	
Back-yard	-0.5335	0.1781	-3.00	0.0030	-0.8831	-0.1838	
Balcony	-0.8108	0.1153	-7.03	0.0000	-1.0371	-0.5844	
Detached S quarters	0.7534	0.0726	10.38	0.0000	0.6109	0.8959	
Gymn	-0.4471	0.1603	-2.79	0.0050	-0.7619	-0.1328	
Swimming pool	0.7755	0.0976	7.94	0.0000	0.5838	0.9671	
Social ammenities	0.7637	0.0747	10.22	0.0000	0.9104	0.6170	
Garage parking	0.2289	0.1415	1.62	0.1060	-0.0488	0.5067	
Master en-suite	0.0569	0.0618	0.92	0.3580	0.0645	0.1783	
Separate dining	0.5519	0.1108	4.98	0.0000	0.3344	0.7694	
Gated Community	-0.2268	0.1321	-1.72	0.0860	-0.4860	0.0324	
Guest room	0.0333	0.1675	0.20	0.8430	-0.2955	0.3620	
Jaccuzi	1.5442	0.2466	6.26	0.0000	1.0601	2.0283	
Elevator	0.0358	0.0960	0.37	0.7090	-0.1525	0.2242	
Back-up generator	0.1223	0.1598	0.77	0.4440	-0.1914	0.4360	
Wooden floor	0.7613	0.2672	2.85	0.0050	0.2367	1.2858	
Constant	15.8070	0.3440	45.95	0.0000	15.1317	16.4822	

Housing Price Index Quarter 1, 2015



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	Region 1			Region 2			Region 3			
	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes	
Q1-2013	100	100	100	100	100	100	100	100	100	
Q2-2013	100.063	100.04	100.60	100.05	100.61	100.10	100.01	100.93	100.03	
Q3-2013	99.67	100.40	99.40	102.44	100.99	100.49	98.56	105.20	102.09	
Q4-2013	100.74	102.82	99.38	101.80	100.82	98.81	103.75	103.95	100.32	
Q1-2014	100.45	99.38	99.67	101.63	100.91	100.91	97.70	102.58	102.58	
Q2-2014	100.50	99.67	99.54	100.75	101.75	101.27	96.70	102.74	103.32	
Q3-2014	99.41	100.31	100.33	100.63	101.27	99.91	98.90	102.98	100.56	
Q4-2014	97.48	99.29	105.21	97.82	101.98	99.61	104.54	104.36	100.62	
Q1-2015	95.20	101.54	100.95	98.67	102.01	100.25	104.67	104.92	100.71	
Q2-2015	102.92	102.78	100.53	101.11	102.05	100.77	105.23	104.91	102.51	

Table 4: Inter Quarter Index (Moving Base) – 2013 - 2015

FIXED BASE INDEX (Q1-2013) - 2013 - 2015

	Region 1			Region 2			Region 3		
	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes
Q1-2013	100	100	100	100	100	100	100	100	100
Q2-2013	100.06	100.04	100.60	100.05	100.61	100.11	100.01	100.93	100.03
Q3-2013	99.02	99.67	99.67	100.09	102.44	102.44	99.65	104.13	98.10
Q4-2013	99.86	100.74	100.74	98.88	101.53	101.80	100.32	103.45	103.45
Q1-2014	99.57	100.55	100.55	99.41	101.46	101.01	100.24	102.20	100.11
Q2-2014	99.62	100.34	97.76	100.98	102.07	101.39	100.82	102.18	101.47
Q3-2014	99.94	100.04	97.88	100.51	101.06	104.15	99.19	102.29	99.74
Q4-2014	99.74	100.52	98.93	100.48	100.19	102.15	100.07	104.09	99.41
Q1-2015	95.39	101.32	100.19	100.13	100.741	101.67	100.05	104.52	99.50
Q2-2015	99.41	102.95	101.41	101.90	100.81	100.01	103.23	104.70	100.95

THE DEFINITION OF THE SUB-REGIONS



REGION 1

Athi River, Mlolongo, Mavoko, Nakuru, Ngong, Ruaka, Syokimau, Embakasi, Kahawa Wendani. Thika, Mtwapa, Utange, South C, Kitengela, Kiembeni, Nyeri, Likoni, Eldoret, Ruiru, kilifi.Thika road (Kasarani, Roysambu, Ruaraka).



REGION 2

Thindigua (Kiambu Road), Kiambu, South B, Kabete, Komarock, Imara Daima, Membley, Buruburu, Rongai, Waiyaki Way (Uthiru, Kinoo, Kikuyu, Regen), Mbagathi road, Ngong Road, Langata.



REGION 3

Kileleshwa, kilimani, Lavington, Westlands, Spring Valley, Riverside, Milimani (Kisumu), Milimani (Nakuru), Runda, Karen, Garden Estate, Parklands, Ridge Ways, Muthaiga, Loresho, Kitsuru, Adam Arcade, Nyali, Mountainview

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