



HOUSING PRICE INDEX

JULY 2016

ISSUE 07



Highlights

1 The second quarter of 2016 saw an upward but modest trend in house prices, portraying a sense of broad market stability. This is confirmed by the evolution of the KBA-HPI which had risen by about 11 percent since the index's base period of the first quarter of 2013.

2 There has been a sense of taste consistency amongst home buyers. The price movements during the quarter continued with a limited change in reference characteristics during the first Quarter of 2016 was reflected in the influencers of price movements remaining the size of the house.

3 Like the overall index, the sub-regional indices were a reflection of the market alignments in pursuit of affordability (effective demand) and the fact that home owners seem to be focusing more on attributes such as gated community, amenities such as recreational facilities, and shopping mall, among other attributes.



House Prices on an Upward but Modest Trend

The Kenya Bankers Association Housing Price Index (KBA-HPI) during the second quarter of 2016 represents a continuous but modest increase on house prices in the country. The KBA-HPI increased by 1.74 percent compared to the 1.4 percent rise during the first quarter (Figure 1).

The price rise can be characterised as modest at best, portraying a sense of broad market stability. This is confirmed by the evolution of

the KBA-HPI (Table 1) which as at the end of the second quarter of 2016 had risen by about 11 percent since the index's base period of the first quarter of 2013.

Figure 1: Overall Price Change (%)

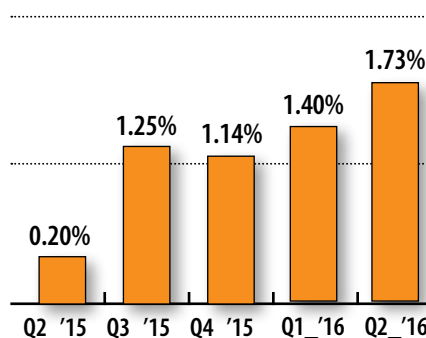


Table 1: Price Movement Series

Period	Index with a fixed base*	Index with a moving base
Q2_2014	102.29	103.45
Q3_2014	102.44	101.87
Q4_2014	102.71	102.18
Q1_2015	102.97	104.99
Q2_2015	103.88	105.01
Q3_2015	107.34	106.27
Q4_2015	108.19	107.48
Q1_2016	109.08	108.99
Q2_2016	111.28	110.87

* Based on Base period Q1_2013

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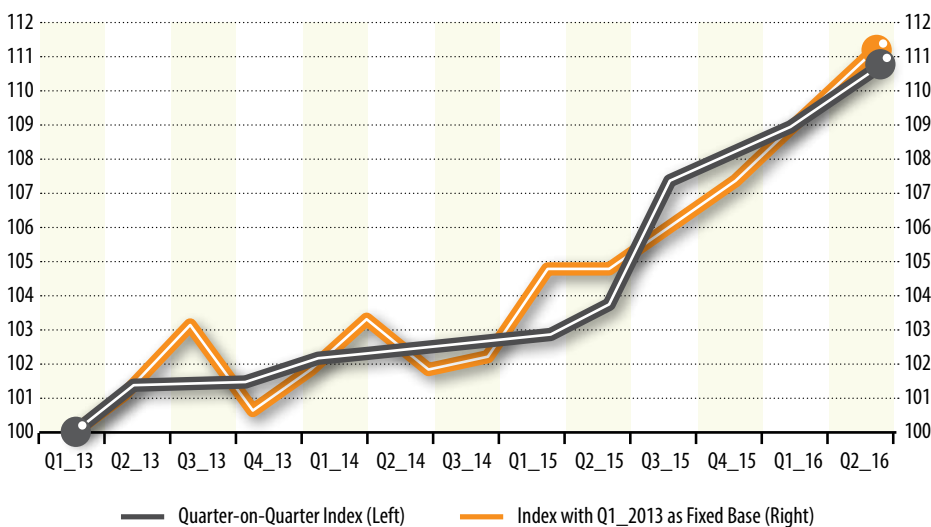


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The demand and supply market dynamics have not been subject to significant changes over the period. The supply of housing units has been in response to the broad demand characteristics in the market as reflected in three factors.

- One, the new units being put up in the market are mainly targeting the middle end of the market, with the lower end experiencing supply constraints arising mainly from the tendency of developers inclining more towards renting than selling.
- Two, the support of the financial sector generally and the banking industry in particular towards home acquisition has been enabled by a generally stable macroeconomic environment.
- Three, there has been a gradual opening up of new geographical areas for housing development in response to physical infrastructure expansion, especially transport.

Figure 2: KBA–House Price Index



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:

$$Index = \sum_{i=1}^n w_i \frac{\hat{P}_1}{\hat{P}_0} = \frac{\sum_{i=1}^n w_0 \hat{P}_1}{\sum_{i=1}^n w_0 \hat{P}_0}$$

Where; \hat{P}_1 is the shadow price from the estimated hedonic function for the current quarter;

\hat{P}_0 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.



Taste Remains Consistent

Like the first quarter, there has been a sense of taste consistency amongst home buyers. The price movements during the quarter continued with a limited change in preference characteristics during the first Quarter of 2016 was reflected in the influencers of price movements remaining to be the size of the house (as measured by plinth area, number of bedroom, bathroom, and presence of domestic staff quarters).

The search for secure neighbourhoods with adequate amenities influenced the price movement dynamics during the quarter. Thus, houses in gated communities – often highly priced given the superior ambience associated with controlled development, security, privacy and scenic value – were key influencers of the overall price movements. Similarly, proximity to social amenities such as shopping malls, tarmacked roads, schools, hospitals and presence of

parking lot among others significantly contributed to price rise in the quarter

The taste consistency is confirmed by comparing the estimates of the hedonic function in Quarter 2 of 2016 (Table 2) and the estimates of Quarter 1 of 2016 (Table 3) and Quarter 4 of 2015 (Table 4).



Factors influencing the SALE PRICES

- Presence of garage
- Proximity to a mall
- Presence of parking bay(s)
- Presence of a balcony(s)
- Presence of a gymnasium
- Master ensuite
- Presence of a borehole
- Presence of a fire place
- Presence of a garden/backyard
- Presence of a separate dining
- Number of bedrooms
- Number of bathrooms
- Type of the house
- Number of floors
- Location of the house
- Presence of DSq
- Swimming pool
- Age of the house

Sub regional Indices – market still skewed towards the upper end

The sub-regional indices based on a moving base reflects an upward, albeit modest, trajectory in the price of apartments in all the regions (Region 1, Regions 2 and Region 3).

This implies that the quarter-to-quarter price movements are on an upward trend. The fixed base index showed price grow at a slower rate across all the regions;- a pointer to the general trend towards entrenching house price stabilisation. This trajectory is consistent with the broad stability observed in the overall HPI.

Like the overall index, the sub-regional indices were a reflection of the market alignments in pursuit of affordability (effective demand) and the fact that home owners seem to be focusing more on attributes such as gated community, amenities such as recreational facilities, and shopping mall, among other attributes.



Apartments and town houses for sale at Garden City Mall, Nairobi.

An interesting insight from the sub-regional indices is that the price movements, though still modest, is more noticeable in the upper market segment, a

fact that underlies not just by the units available in this segment but also reflection of the limited supply of units to the lower end of the market.

Table 2: Housing Price Index Drivers for Quarter 2_2016

Source	SS	df	MS
Model	3977.44707	25	159.097883
Residual	143.391518	523	0.27417116

Prob > F = 0.0000
 # observations = 549
 R-squared = 0.9652
 Adj R-squared = 0.9635

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.0016	0.0001	25.09	0.000	.0014834	.0017349
No. of Bedrooms	0.1808	0.0128	14.17	0.000	.1557451	.205765
No. of Bathrooms	0.2387	0.0145	16.42	0.000	.2101692	.267172
House type	0.1218	0.0149	8.20	0.000	.0926383	.1508815
Age	0.0376	0.0091	4.11	0.000	.019622	.0554893
Time dummy Q2-16	0.0537	0.0502	1.07	0.285	-.0447664	.1522044
Locational Dummy	0.0121	0.0010	11.79	0.000	-.0140872	-.0100702
No. of floors	-0.0582	0.0088	0.01	0.000	-.0753557	-.0409572
Backyard	0.3761	0.0494	7.61	0.000	.2792465	.4729431
Balcony	0.0792	0.0444	1.78	0.075	.0079997	.1663023
DSQ	0.2939	0.0314	9.34	0.000	.2321804	.3555229
Gymn	0.4203	0.0763	5.51	0.000	.2708086	.5698887
Swimming pool	0.6035	0.0491	12.28	0.000	.5071876	.6998671
Social amenities	0.0034	0.0337	0.10	0.920	.0627787	.0695739
Master ensuite	-0.1974	0.0508	-3.88	0.000	-.2971243	-.0977321
Garage/parking	0.0866	0.0367	2.36	0.018	.0147192	.158578
Separate dining	0.4541	0.0713	6.37	0.000	.314344	.5939015
Gated community	0.1002	0.0327	3.06	0.002	.036022	.1644364
borehole	0.1662	0.0444	3.74	0.000	0.0791001	.2533072
Guestroom	2.0136	0.3570	5.64	0.000	1.313543	2.713663
Jacuzzi	-0.1124	0.0787	-1.43	0.153	-.2666759	.0418034
Elevator	-2.4008	0.1811	-13.26	0.000	-2.755859	-2.04579
Backup - generator	1.6111	0.0809	19.9	0.000	1.452338	1.769786
wooden floor	0.1493	0.1494	1	0.318	-.1436166	.4423094
Constant	14.7388	0.0523	281.63	0.000	14.63619	14.84143

Housing Price Index
 Quarter 2, 2016 **+110.87**

Table 3: Housing Price Index Drivers for Quarter 1_2016

Source	SS	df	MS
Model	110.5976	24	4.6082
Residual	50.5408	2440	0.0207

Prob > F = 0.0000
 # observations = 2465
 R-squared = 0.6833
 Adj R-squared = 0.6864

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.0016	0.0001	25.09	0.000	.0014834	.0017349
No. of Bedrooms	0.1808	0.0128	14.17	0.000	.1557451	.205765
No. of Bathrooms	0.2387	0.0145	16.42	0.000	.2101692	.267172
House type	0.1218	0.0149	8.20	0.000	.0926383	.1508815
Age	0.0376	0.0091	4.11	0.000	.019622	.0554893
Time dummy Q1-16	0.0537	0.0502	1.07	0.285	-.0447664	.1522044
Locational Dummy	0.0121	0.0010	11.79	0.000	-.0140872	-.0100702
No. of floors	-0.0582	0.0088	0.01	0.000	-.0753557	-.0409572
Backyard	0.3761	0.0494	7.61	0.000	.2792465	.4729431
Balcony	0.0792	0.0444	1.78	0.075	.0079997	.1663023
DSQ	0.2939	0.0314	9.34	0.000	.2321804	.3555229
Gymn	0.4203	0.0763	5.51	0.000	.2708086	.5698887
Swimming pool	0.6035	0.0491	12.28	0.000	.5071876	.6998671
Social amenities	0.0034	0.0337	0.10	0.920	.0627787	.0695739
Master ensuite	-0.1974	0.0508	-3.88	0.000	-.2971243	-.0977321
Garage/parking	0.0866	0.0367	2.36	0.018	.0147192	.158578
Separate dining	0.4541	0.0713	6.37	0.000	.314344	.5939015
Gated community	0.1002	0.0327	3.06	0.002	.036022	.1644364
borehole	0.1662	0.0444	3.74	0.000	0.0791001	.2533072
Guestroom	2.0136	0.3570	5.64	0.000	1.313543	2.713663
Jacuzzi	-0.1124	0.0787	-1.43	0.153	-.2666759	.0418034
Elevator	-2.4008	0.1811	-13.26	0.000	-2.755859	-2.04579
Backup - generator	1.6111	0.0809	19.9	0.000	1.452338	1.769786
wooden floor	0.1493	0.1494	1	0.318	-.1436166	.4423094
Constant	14.7388	0.0523	281.63	0.000	14.63619	14.84143

Housing Price Index
 Quarter 1, 2016 **+108.99**

Table 4: Housing Price Index Drivers for Quarter 4_2015

Source	SS	df	MS			
Model	122.6135	23	5.3310			
Residual	65.2387	2430	0.0268			

Prob > F = 0.0000
Number of obs = 2454
R-squared = 0.6527
Adj R-squared = 0.6494

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.0014	0.0001	15.82	0.000	.0012397	.0015905
No. of Bedrooms	0.0944	0.0134	7.04	0.000	.0680875	.1207115
No. of Bathrooms	0.2887	0.0157	18.41	0.000	.2579453	.3194314
House type	0.0481	0.0155	3.11	0.002	.0177831	.0784508
Age	0.0608	0.0293	2.08	0.038	.0033527	.1182440
Time dummy Q4-15	0.1605	0.0263	6.09	0.000	.2121157	.1088361
Locational Dummy	0.0047	0.0014	3.36	0.001	.0074360	.0019514
No. of floors	0.0422	0.0102	4.15	0.000	.0222495	.0621149
Backyard	0.2213	0.0935	2.37	0.018	.0379900	.4045947
Balcony	0.0579	0.0525	1.10	0.270	.0450435	.1607685
DSQ	0.3331	0.0341	9.76	0.000	.2661888	.4001048
Gymn	-0.6127	0.0860	-7.12	0.000	-.7813536	-.4440380
Swimming pool	0.5787	0.0583	9.93	0.000	.4644786	.6929535
Social amenities	0.0290	0.0299	0.97	0.032	.0877175	.0296439
Master ensuite	1.1744	0.1886	6.23	0.000	.8045586	1.544312
Garage/parking	0.0982	0.0300	3.28	0.001	.0394852	.1570119
Separate dining	-0.1921	0.1215	-1.58	0.114	-.4303595	.0461400
Gated community	0.4057	0.0382	10.63	0.000	.48051100	-.3308163
Borehole	0.0166	0.0506	0.33	0.042	.1158217	.0825459
Guestroom	-0.2037	0.1329	-1.53	0.125	-.4303595	.0461400
Jacuzzi	0.0782	0.1270	0.62	0.538	.1708965	.3273701
Elevator	0.1242	0.1112	1.12	0.264	.4779643	.7532508
Backup - generator	0.6156	0.0702	8.77	0.000	.0937753	.3422391
Constant	15.0405	0.0755	199.19	0.000	14.89241	15.18855

Housing Price Index
Quarter 4, 2015

+107.48

Table 5: Inter quarter Sub-regional index (Moving base): 2013 - 2016

	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
Q3-2015	103.54	103.04	101.02	104.81	102.99	101.51	105.54	105.43	104.08
Q4-2015	105.23	104.57	104.66	104.84	103.47	102.43	106.25	105.37	105.26
Q1-2016	105.56	106.49	104.87	104.22	103.30	102.58	107.05	105.96	105.37
Q2-2016	103.48	104.08	102.96	100.19	100.30	100.93	101.23	100.96	100.27

Table 6: Inter quarter Sub-regional index (Fixed base): 2013 - 2016

	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
Q3-2015	100.74	102.77	101.30	103.37	101.65	103.03	105.21	106.76	104.87
Q4-2015	100.92	103.01	103.09	105.75	101.98	102.62	109.31	110.61	105.32
Q1-2016	101.85	104.88	103.06	106.29	101.18	104.99	109.99	110.90	105.97
Q2-2016	102.11	105.85	104.21	106.69	101.38	105.12	112.57	110.97	106.82

* Definition of the Sub-regions listed overleaf

THE DEFINITION OF THE SUB-REGIONS



REGION 1

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



REGION 2

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



REGION 3

Kileleshwa, Kilimani, Lavington, Westlands, Spring Valley, Riverside, Milimani (Kisumu), Milimani (Nakuru), Runda, Karen, Garden Estate, Parklands, Ridgeways, Muthaiga, Loresho, Kitisuru, Adams Arcade, Nyali, Mountain View, Nyari.

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