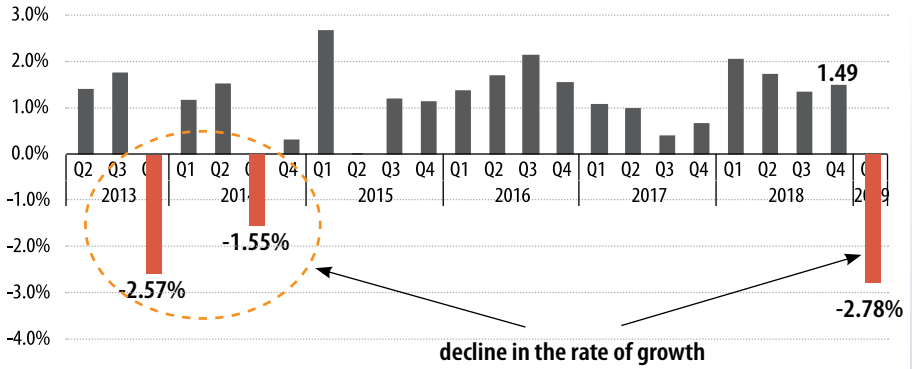
HOUSING PRICE INDEX

MAY 2019 ISSUE 18

House price growth softens to a five-year low

The Kenya Bankers Association - Housing Price Index (KBA-HPI) reveals that growth in house price declined by 2.78 percent during the first quarter of 2019. This is the third time the index has reported a decline in the growth of house prices, the last such instances having been registered during the last quarter of 2013 and the third quarter of 2014 respectively (**Figure 1**).

Figure 1: Overall Price Change (%)



The observed decline during the quarter is against the backdrop of the evolution of the growth in house prices depicting a generally stable market. The average quarterly increase in house prices since the first quarter of 2013 – the base period for the KBA-HPI – is 0.87 percent. The price decline during the first quarter of 2019 while indicating the sustenance of a general trend observed since the second quarter of 2018 is seen as tentative, and could be a pointer to a depressed market if sustained. The last decline was followed by a reversal in the form of growth in house prices in the subsequent quarter. Underlying the slowdown in prices seen during the first quarter of 2019 are supply-side and demand-side market attributes.

On the supply side, the market was apparently influenced by two factors. First, the rate of growth of credit to the

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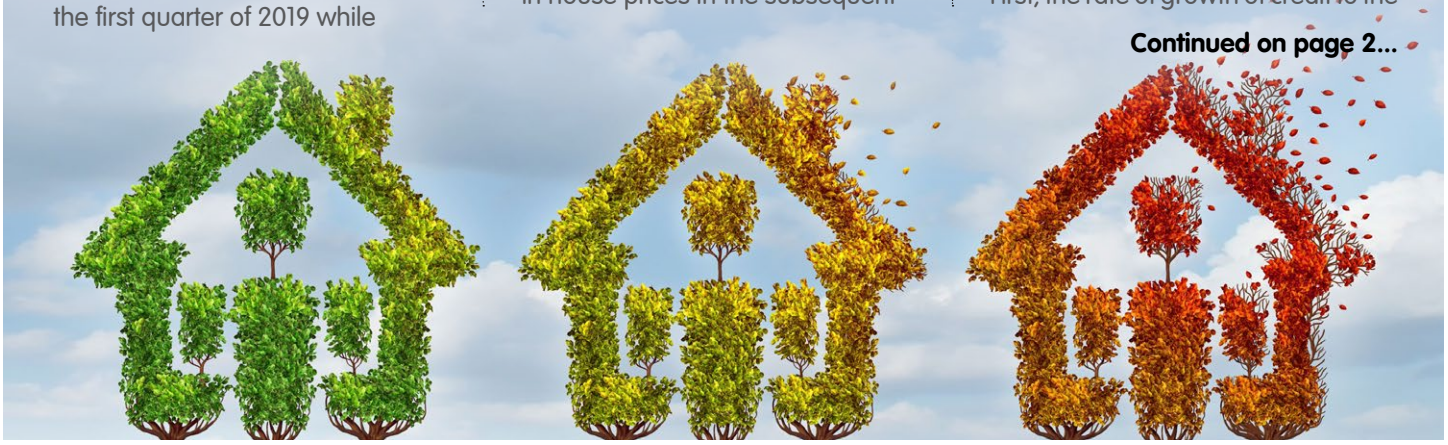

Highlights

1 The Kenya Bankers Association - Housing Price Index (KBA_HPI) reveals that house price growth declined to its lowest during the first quarter of 2019.

2 Buyers showed a distinct preference the number of bedrooms and bathrooms and other factors as opposed to overall plinth area.

3 Apartments maintain its previous dominance in the housing market accounting for a relatively high share of sold units at 62.62 percent.

House Price Growth Softens to a Five-year Low

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building and construction sector during the period July 2017 to June 2018 was modest at best averaging 1.2 percent. The influence of the credit supply to this sector, a good proxy of availability of funding for housing construction, manifested itself in supply constraints after a period of about a year.

Second, cement consumption during the period July 2017 to November 2018 was on a general declining trend. Underlying this consumption trend was a decline in cement production from 553,631 metric tonnes in July 2017 to 460,967 metric tonnes in November 2018.

On the demand side, the cautionary stance of households in view of the prevailing economic conditions and the squeezed household budgets continued to exert a drag on the housing market. This partly due to the challenges facing prospective home buyers to access bank credit. Therefore, the supply/demand imbalances observed since the second quarter of 2018 is evidently persistent.

Based on the Laspeyres Index methodology (See **Technical Note**), the evolution of the KBA Housing Price Index (KBA-HPI) rose by 23.56 percent as at the end of Q1 of 2019 based on the fixed based index as is shown in **Table 1** and **Figure 2**.

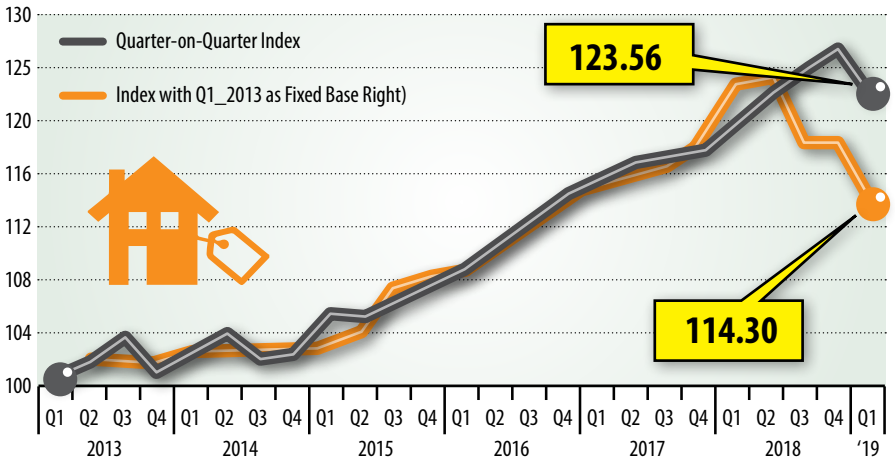
Evident in **Figure 2** is the declining growth in both the moving and fixed base index. The moving base index at the end of the Q1 of 2019 stood at 123.56, representing a 2.78 percent decline in the growth. On the other hand, the fixed base index declined from 119.48 in Q4 of 2018 to 114.30 in Q1 of 2019.

Table 1: Price Movement Series

Period	Index with a fixed base	Index with a moving base
Q1_2017	115.92	116.37
Q2_2017	116.67	117.52
Q3_2017	117.59	118.01
Q4_2017	119.19	118.81
Q1_2018	123.83	121.29
Q2_2018	124.78	123.42
Q3_2018	119.38	125.10
Q4_2018	119.48	126.995
Q1_2019	114.30	123.56

* Based on Base period Q1_2013

Figure 2: KBA–HPI Evolution



Technical Note

The index follows a Laspeyers index method. In this method, the index is computed by getting the ratio of 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 formula:

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

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.

Buyers' Tastes preferences maintained, though the effect of social amenities muted

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 the first quarter of 2019 are provided in **Table 2**. For comparison purposes, results from other quarters and more importantly the second, third and fourth quarter of 2018 are presented in **Table 3**, **4** and **5** respectively.

Based on the hedonic regression estimates we make several observations. First, unlike in the previous quarter where buyers exhibited strong preferences for the plinth area, during the first quarter of 2019, the plinth area had a negative elasticity coefficient though statistically insignificant.

Second, even with the plinth area having no influence on house prices, the number of bedrooms and bathrooms had a significant positive effect. This indicates a trade-off between the size of the house and the attributes of how many people it can potentially accommodate. Third, consistent with our observation in the previous quarters, region/location matters in the determination of house prices. All else being equal, the prices of houses in the upper market (**Region 3**) and middle income (**Region 2**) segments were on average higher compared to lower income segments (**Region 1**).

Interestingly, the elasticity on the upper market segment is established to be positive and higher compared to units in other segments. This suggests that enabling increased housing supply in desirable locations will result in improved amenity relative to supplying new housing in less desirable locations.

Further, house type – Apartments, Bungalows and Maisonettes – is also a predictor of house prices. Lastly, unlike in the previous quarters, attributes especially being in a gated community, the presence of a back-up generator and the presence of a garage/parking had a muted effect on house price movements. This points to the homeowner's taste inconsistency compared to other periods as confirmed by the hedonic function estimates in Quarter 4 of 2018 (**Table 2**) and the estimates of Quarter 3 of 2018 (**Table 3**) and Quarter 2 of 2018 (**Table 4**).

Property Mix – Apartments Dominates, Maisonette and Bungalows Slightly Up

Apartments maintained dominance in the housing market accounting for 62.6 percent of the total units sold. Even with the observed dominance, the share of apartments sold during the quarter reduced by 13.7 percent from 76.3 percent in the fourth quarter of 2018. This was a pointer to subdued market activity. The share of Maisonettes was up by 11.8 percent from 11.6 percent in the fourth quarter of 2018 to 23.4 percent in the first quarter of 2019. On the other hand, the share of Bungalows marginally rose by 1.9 percent to account for 14.0 percent of the house units sold in the market.

The dominance of apartments is an indication that the housing market is predominantly in the middle income segment of the population. This is a structural market feature that would potentially change with the implementation of the Affordable Housing Programme.

Figure 3: Total units offered

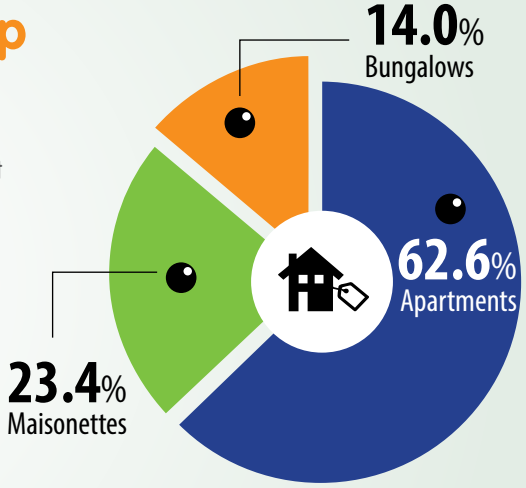


Table 2: Housing Price Index Drivers for Quarter 1_2019

Source	SS	df	MS
Model	192.671	12	16.056
Residual	16.264	255	0.064
Total	**208.934**	**267**	**0.783**

 # observations = 268
F (18, 179) = 251.74
Prob > F = 0.00
R-squared = 0.92
Adj R-squared = 0.92
Root MSE =0.25

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Plinth area	-0.022	0.041	-0.540	0.592	-0.102	0.058
No. of Bedrooms	0.324	0.032	9.990	0.000	0.260	0.388
No. of Floors	0.452	0.105	4.290	0.000	0.244	0.659
No. of Bathrooms	0.268	0.054	4.930	0.000	0.161	0.376
Age of house	0.161	0.152	1.060	0.291	-0.138	0.461
Locational Dummy						
Region 2	0.114	0.100	1.140	0.255	-0.083	0.312
Region 3	0.390	0.074	5.250	0.000	0.243	0.536
Type of House						
Apartments	0.878	0.125	7.050	0.000	0.633	1.124
Bungalows	0.343	0.112	3.070	0.002	0.123	0.563
Maisonette	-	-	-	-	-	-
Other Drivers						
Elevator	-1.393	0.580	-2.400	0.017	-2.534	-0.251
Presence of Borehole	-3.314	0.583	-5.690	0.000	-4.462	-2.166
Presence of DSQ	-0.130	0.195	-0.670	0.504	-0.514	0.253
Gated Community	0.000	(omitted)				
Generator	0.000	(omitted)				
Garage Parking	0.000	(omitted)				
Constant	13.339	0.307	43.520	0.000	12.735	13.942
Constant	14.33	0.41	34.83	0.00	13.52	15.14

Housing Price Index
Quarter 1, 2019 **123.56**

Table 3: Housing Price Index Drivers for Quarter 4_2018

Source	SS	df	MS
Model	141.512	18	7.862
Residual	22.877	179	0.128
Total	**164.389**	**197**	**0.834**

 # observations = 198
F (18, 179) = 61.51
Prob > F = 0.00
R-squared = 0.861
Adj R-squared = 0.849
Root MSE =0.358

LN VALUE	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Plinth area	0.17	0.09	1.94	0.05	0.35	0.00
No. of Bedrooms	0.66	0.05	13.85	0.00	0.57	0.75
Number of floors	-0.14	0.12	-1.18	0.24	-0.37	0.09
No. of Bathrooms	0.22	0.11	2.11	0.04	0.01	0.43
Age of House	-0.01	0.03	-0.01	0.99	-0.05	0.05
Locational Dummy						
Region 2	0.30	0.10	2.84	0.01	0.09	0.50
Region 3	1.23	0.20	6.05	0.00	0.83	1.63
House type						
Bungalow	-0.44	0.15	-2.97	0.00	-0.73	-0.15
Apartments	-0.73	0.38	-1.91	0.06	-1.48	0.03
Maisonette	-0.49	0.18	-2.65	0.01	-0.85	-0.12
Other Drivers						
Presence of backyard	0.58	1.90	0.31	0.76	-3.16	4.32
Presence of DSQ	1.75	0.78	2.25	0.03	0.22	3.28
Presence of Gymn	-1.74	1.52	-1.14	0.26	-4.75	1.27
Swimming Pool	0.07	0.42	0.17	0.87	-0.76	0.90
Prox to social amenities	1.22	0.39	3.10	0.00	1.99	0.44
Parking/garage	0.83	0.25	3.25	0.00	0.32	1.33
Presence of balcony	0.37	0.28	1.31	0.19	-0.19	0.94
Master Ensuite	-0.02	0.31	-0.06	0.95	-0.63	0.59
Separate dining	-0.06	0.34	-0.16	0.87	-0.73	0.62
Elevator/ Lift	1.86	1.31	1.42	0.16	-0.72	4.44
Wooden floor	-0.81	1.46	-0.56	0.58	-3.69	2.07
Constant	14.33	0.41	34.83	0.00	13.52	15.14

Housing Price Index
Quarter 4, 2018 **126.995**

Table 4: Housing Price Index Drivers for Quarter 3_2018

Source	SS	df	MS
Model	12.6014	14	0.9001
Residual	1.1612	22	0.0528

Prob > F = 17.05
observations = 36
R-squared = 0.9156
Adj R-squared = 0.8619

LN VALUE	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Ln Plinth Area	0.087	0.133	0.66	0.519	-0.189	0.364
Number of Bedrooms	0.172	0.080	2.15	0.043	0.006	0.339
Number of Floors	-0.142	0.063	-2.26	0.034	-0.272	-0.012
Number of Bathrooms	0.231	0.102	2.27	0.034	0.020	0.443
Age of House	-0.051	0.025	-2.05	0.053	-0.103	0.001
House Type	0.041	0.091	0.45	0.659	-0.148	0.230
Presence of Backyard	0.966	0.348	2.78	0.011	0.245	1.688
Presence of Balcony	-0.011	0.177	-0.06	0.949	-0.379	0.356
Presence of Gym	-0.137	0.313	-0.44	0.666	-0.785	0.512
Master-Ensuite	0.485	0.226	2.14	0.043	0.016	0.954
Separate Dining Area	0.268	0.203	1.32	0.201	-0.154	0.690
Within Gated Community	0.199	0.252	0.79	0.438	-0.323	0.720
Presence of Wooden Floor	-0.602	0.345	-1.74	0.095	-1.317	0.114
Location Dummy	0.191	0.098	1.95	0.064	-0.012	0.394
Constant	13.900	0.804	17.29	0.000	12.233	15.567

Housing Price Index
Quarter 3, 2018

125.10

Table 5: Housing Price Index Drivers for Quarter 2_2018

Source	SS	df	MS
Model	412.7318	18	22.9296
Residual	0.0298	407	12.1156

Prob > F = 770.27
observations = 426
R-squared = 0.9715
Adj R-squared = 0.9702

LN VALUE	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Plinth area	0.8227	0.0519	15.85	0.000	0.7206555	0.9247546
Number of Bedrooms	-0.0327	0.0305	-1.07	0.283	-0.0925902	0.0271577
Number of Bathrooms	0.0958	0.0281	3.41	0.001	0.0405794	0.1510979
House type	0.8766	0.0717	12.23	0.000	0.7356745	1.01752
Locational Dummy	-0.0008	0.0033	-0.25	0.806	-0.0072477	0.0056356
Number of floors	0.1782	0.0534	3.34	0.001	0.073147	0.2831537
Presence of Backyard	0.8857	0.0964	9.19	0.000	0.6962634	1.075204
Presence of Balcony	0.3809	0.0770	4.95	0.000	0.2294663	0.5322862
Presence of DSQ	-0.3834	0.2491	-1.54	0.124	-0.8730004	0.1062068
Presence of Gym	0.2888	0.0930	3.11	0.002	0.1060066	0.4716663
Swimming pool	-0.5119	0.1236	-4.14	0.000	-0.7548346	-0.2690207
Garage/parking	1.6248	0.2475	0.57	0.000	-2.111349	1.138297
Master en suite	1.6963	0.2118	8.01	0.000	1.279843	2.112751
Separate dining	-0.3465	0.1795	-1.93	0.054	-0.6993735	0.0064055
Gated community	-0.0253	0.0258	-0.98	0.327	-0.0760263	0.025374
Presence of borehole	0.2787	0.0584	4.77	0.000	-0.3935313	-0.1639539
Presence of geyser closet	-1.1303	0.2968	-3.81	0.000	-1.71367	-0.5468541
Presence of Elevator	0.0436	0.0934	0.47	0.641	-0.1400402	0.2271589
Constant	8.6755	0.3871	22.41	0.000	7.914595	9.436404
Presence of Guestroom	-0.2369	0.2552	-0.93	0.354	-0.7383697	0.2645607
Presence of Elevator	-0.3491	0.2314	-1.51	0.132	-0.8037293	0.1055392
Backup - generator	-0.8324	0.4576	-1.82	0.769	-1.731368	0.0666132
Constant	10.2103	0.5476	18.65	0.000	9.134414	11.28626

Housing Price Index
Quarter 2, 2018

123.42

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, Membley, 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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KENYA BANKERS ASSOCIATION
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