



HOUSING PRICE INDEX

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House Prices Remain Depressed

The housing market remained depressed during the second quarter of 2019. According to the Kenya Bankers Association - Housing Price Index (KBA-HPI), house prices were in the negative territory for the second consecutive quarter. This is an early sign of an emerging trend, considering that previous instances of negative prices have been followed by a correction in the subsequent quarter (Figure 1).

The KBA-HPI indicated a 1.72 percent decline house prices change during the second quarter compared to 2.78 percent decline in the previous quarter.

Underlying the observed decline in house prices is the interplay between weak demand and supply

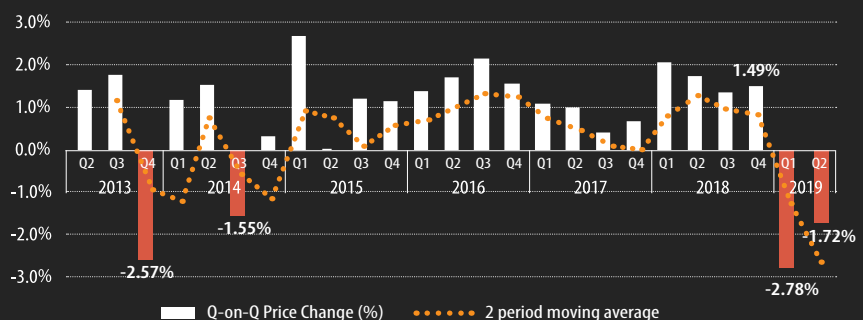
conditions on the back of limited credit. The supply side weaknesses can be inferred from reduction in the number of building approvals. Between January to June 2018 there were 2,252 approvals compared to 2,238 approvals for the period July to November 2018.

The evident increase in sales during the second quarter compared to the first quarter is more a reflection

of supply spill-overs than new units being put in the market. On the overall therefore, the housing market remained subdued.

The subdued housing market outlook is attributable to two factors. First, weak household income continues to keep demand for housing tight. Second, even with slight up-tick in private sector credit growth during the first half of the

Figure 1: Overall Q-on-Q Price Change (%):- Are Prices Looking Up?



Highlights

1 House prices remained subdued for the second consecutive quarter, registering a 1.72 percent decline during the second quarter.

2 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).

3 Continued dominance of the apartments in the housing market is a clear demonstration of the predominance of the middle-income segment of the population.

Technical Note

The index follows a Laspeyres 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.



House Price Growth Remained depressed in Quarter 2 of 2019

...continued from page 1



year, home buyers remain constrained. On account of these two factors, it is clear that credit constrains that affected both the supply and demand side of the housing market has been a dominant influence on the price evolution.

The limited availability of funding to the housing market has been on the back of increased levels of non-performing loans generally, and especially the construction sector. This factor has had a negative bearing on the risk appetite of lenders.

Based on the Laspeyres Index methodology (See Technical Note), the evolution of the KBA Housing Price

Index (KBA-HPI) rose by 21.47 per cent as at the end of Q1 of 2019 based on the moving index as is shown in Table 1 and Figure 2.

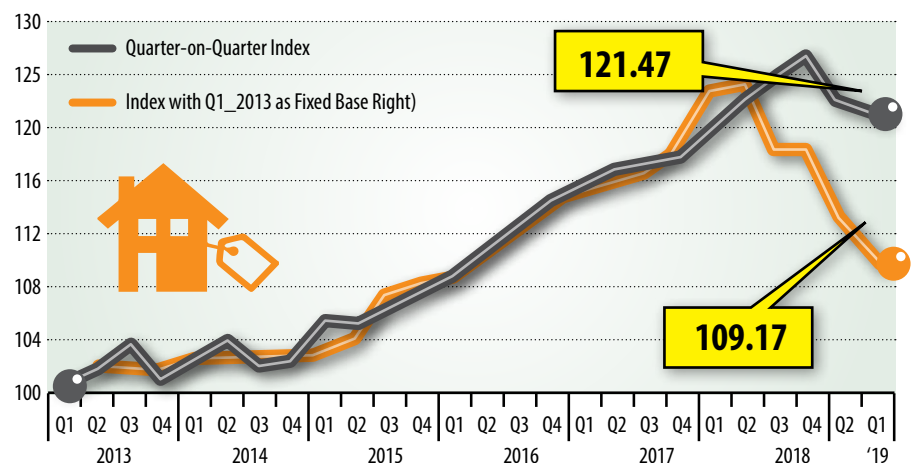
Evident in Figure 2 is the declining growth in both the moving and fixed base index. The moving base index at the end of the Q2 stood at 121.47, representing a -1.72 percent change in the growth. On the other hand, the fixed base index further declined from 114.30 in Q1 of 2019 to 109.17 in Q2 of 2019.

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
Q2_2019	109.17	121.47

* Based on Base period Q1_2013

Figure 2: KBA-HPI Evolution



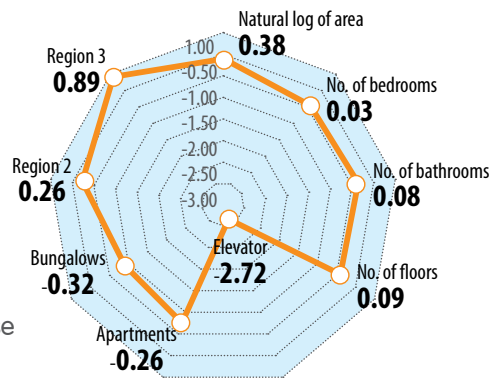
Buyer Tastes and Preferences Remain the Same in Quarter 2

The determination of the qualitative and quantitative parameters that drive the house price changes is based on the estimation of a hedonic function which allows for the development of an index tracking price changes based on the house attributes. The graphical representation of the effects of attributes are illustrated in **Figure 3** and the hedonic regression estimates for the Second Quarter of 2019 are provided in **Table 2**. For comparison purposes, results from other quarters, specifically quarter 4 of 2018 and quarter 1 of 2019 are shown in **Tables 3** and **4**.

Among the key results, a particularly strong relationship is found between the region/location and 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**). The price elasticities for the respective regions indicate a skewness to the upper income market with that segment contributing the highest elasticity of 0.89 while that of the middle-income segment is at 0.26 (**Figure 3**).

The plinth area has an elasticity of 0.38 and comes second after the region/location. This points to the fact that homeowners who seek house units with a bigger plinth area eventually must contend with a higher price. In addition, the number of bedrooms, bathrooms, and the total number of floors, have a positive effect while the presence of the elevators has a stronger negative effect on house price.

Figure 3: Effects of housing structural characteristics on property price



Sub-Regional Indices

The Inter quarter Sub-Regional indices reflects more price movements in apartment compared to prices of bungalows and maisonettes. It can be observed that the quarterly prices for apartments in low income segment (Region 1) registered the highest drop compared to those in middle income segment (Region 2) **Table 5**.

The index for low income segment and middle income segment stood at 103.58 and 102.83 respectively consistent with the faster rate of change in prices observed in the previous quarters. In terms of Maisonettes, the rate of price decline is also higher in Region 1 than in Region 3 with prices in Region 3 being characterized by narrow fluctuations an indication of a sense of stability in the region.

Apartments Sales Dominate as Maisonettes and Bungalows Wither

The outlook on the units offered reveals that in Quarter 2 of 2019, Apartments' dominance continued and was characterized by upsurge while that of Maisonette and Bungalows wither in relation to Quarter 1 of 2019. Apartments accounted for four-fifth (i.e. 81.2 percent) of the total units in Quarter 2 compared to five-eighths (62.6 percent) in the first quarter of 2019.

The continued dominance of the apartments in the housing market is a clear demonstration of the predominance of the middle-income segment of the population. From a developer's perspective, this outlook is one way of dealing with the pressure of land prices and hence the need to build further upwards.

Maisonettes accounted for one-seventh of the market's share though it registered a 10.5 percent decline from 23.4 percent in Quarter 1 to 12.9 percent in Quarter 2. The share of Bungalows also rammed down by 8.1 percent from 14.0 percent in Quarter 1 to 5.9 percent in Quarter 2 of 2019.

Figure 4: Total units offered

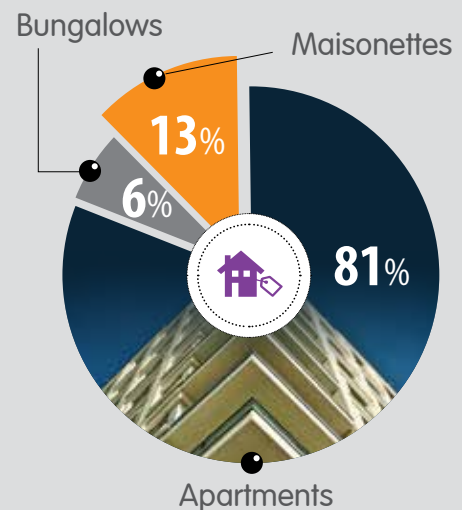


Table 2: Housing Price Index Drivers for Quarter 2_2019

Source	SS	df	MS
Model	23.071	9	2.563
Residual	5.516	261	0.021
Total	28.587	270	0.106

observations = 271
 F (18, 179) = 121.29
 Prob > F = 0.00
 R-squared = 0.807
 Adj R-squared = 0.800
 Root MSE = 0.145

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.378	0.042	9.030	0.000	0.296	0.461
No. of Bedrooms	0.035	0.040	0.860	0.391	-0.045	0.114
No. of Bathrooms	0.076	0.038	2.000	0.047	0.001	0.151
No. of Floors	0.093	0.073	1.270	0.205	-0.051	0.237
Age of house	0.161	0.152	1.060	0.291	-0.138	0.461
Locational Dummy						
Region 2	0.258	0.046	5.640	0.000	0.168	0.348
Region 3	0.893	0.056	16.070	0.000	0.783	1.002
Type of House						
Apartments	-0.260	0.083	-3.140	0.002	-0.423	-0.097
Bungalows	-0.318	0.081	-3.920	0.000	-0.478	-0.158
Maisonette	-	-	-	-	-	-
Other Drivers						
Presence of Elevator	-2.717	0.851	-3.190	0.002	-4.393	-1.041
Constant	13.783	0.230	59.870	0.000	13.329	14.236



Housing Price Index  **121.47**
 Quarter 2, 2019

Table 3: 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  **123.56**
 Quarter 1, 2019

Table 4: 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 5: Inter quarter Sub-Regional indices (Moving Base): Q1-2013 – Q2-2019

	Region 1			Region 2			Region 3		
	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes
Q1-2013	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Q2-2013	100.06	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
Q3-2016	104.81	104.92	104.02	103.62	101.51	102.62	103.07	102.59	104.29
Q4_2016	106.82	105.05	104.83	105.04	102.61	103.60	105.72	102.94	105.94
Q1_2017	108.63	105.81	104.96	106.75	102.81	104.27	107.49	103.27	106.24
Q2_2017	109.73	105.97	105.22	107.86	102.96	104.27	108.65	103.83	106.70
Q3_2017	110.04	106.08	105.63	107.93	103.17	105.08	109.38	103.94	107.08
Q4_2017	111.53	106.86	106.04	108.61	103.51	105.84	110.63	104.04	107.75
Q1_2018	112.39	107.16	108.82	110.07	105.58	108.03	111.41	107.04	110.08
Q2_2018	113.30	107.92	109.49	110.96	106.33	108.70	112.31	107.80	110.76
Q2_2019	103.58	100.58	104.35	102.83	107.41

* Definition of the Sub-regions listed overleaf ** Based on Base period Q1_2013

THE DEFINITION OF THE SUB-REGIONS



REGION 1

Athi River, Mlolongo, Mavoko, Nakuru, Ngong, Ruaka, Syokimau, Embakasi, Kahawa Wendani, Thika, Mtwapa, Utange, Kitengela, Kiambeni, 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, Membedley, 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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