



HOUSING PRICE INDEX

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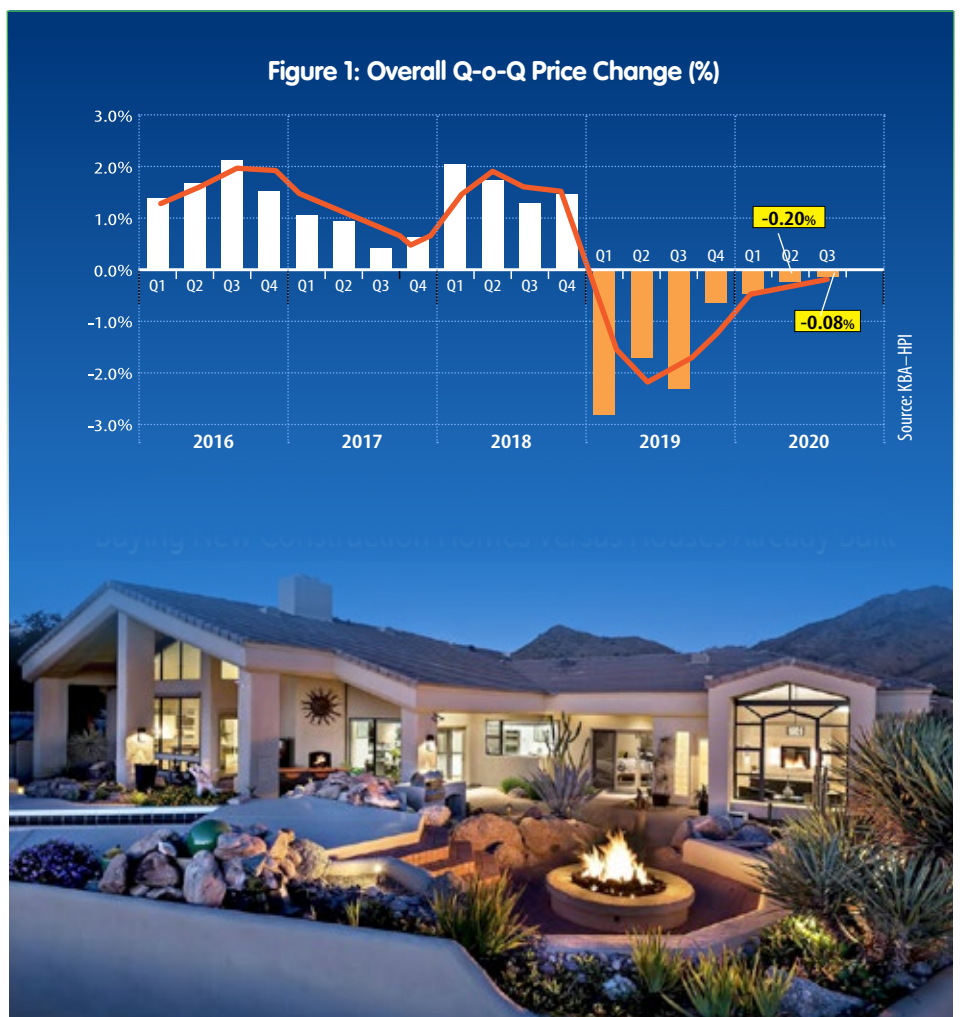
House Price Deceleration Flattens Off

The rate of growth of house price has been on a decelerating but stable path, albeit still stuck in the negative territory.

According to the Kenya Bankers Association - House Price Index (KBAHPI), house prices contracted by 0.08 percent in the third quarter, a marginal improvement from the 0.20 percent contraction in the second quarter of 2020.

Housing price fundamentals, just like prices of non-house goods, substantially depend on the state of the economy. The precipitous softening of the economy and the attendant fall in consumption expenditure, the ensuing income uncertainty and low consumer sentiments induced by the COVID-19 pandemic is having adverse effects on the housing market. This effect is seen on both the demand and supply-side of the market.

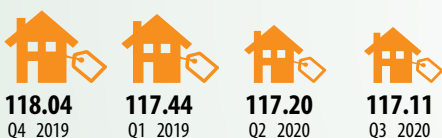
On the demand side, activity remains weak, as inferred from the levelling off of concluded house sales. Even so, demand for houses remains heterogeneous. Demand for apartments shrank by 63 percent, while demand for bungalows and maisonettes expanded by 9 percent and 72 percent, respectively.



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The Numbers at a Glance

1 Growth in House prices remained subdued in Quarter 3 of 2020.



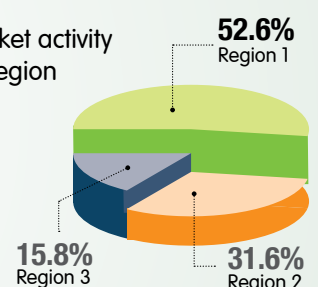
* Based on Base period Q1_2013

2 The main prices drivers were sensitive to:

- Plinth area (size)
- No. of Bedrooms
- No. of Bathrooms
- Location (Region)



3 Market activity by region



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 by 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:

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

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_i are the weights of the respective variables for the preceding quarter.



House Price Deceleration Flattens Off in Q3 of 2020

...continued from page 1

The relatively stronger demand at the top end of the market more than offset the decline in the lower segment, hence providing support for the house price stability that the KBA-HPI reports.

Further, and as we have argued before, during periods of a sharp contraction in economic activity house prices either remain flat or decline slightly. The fact that the decline is not as sharp is attributable to the slow response of both buyers and sellers in response to the declining economic prospects. This provides the cushioning to house prices, hence their stable levels. It is noteworthy that the supply side weaknesses continue to reveal themselves in indicators such as cement production and consumption

Based on the Laspeyres Index methodology (See **Technical Note**), the deceleration of house price growth is flattening off a sign a market now characterised by stability albeit still in the negative territory (**Figure 2**).

The KBA-HPI index based on the moving base stood at 117.11 in quarter three compared to 117.20 in the prior

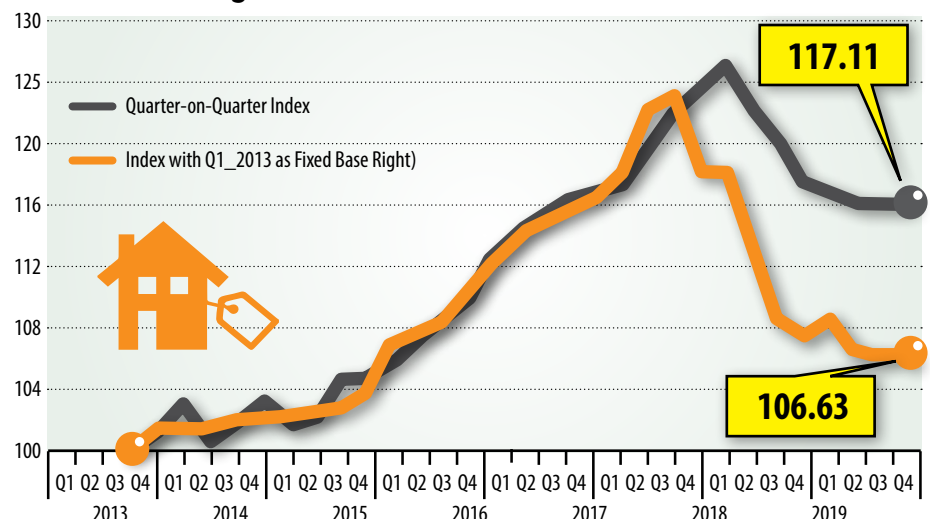
quarter. Based on the fixed base, the index stood at 106.63 compared to 106.66 in the second quarter.

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	127.00
Q1_2019	114.30	123.56
Q2_2019	109.17	121.47
Q3_2019	108.02	118.76
Q4_2019	107.86	118.04
Q1_2020	106.87	117.44
Q2_2020	106.66	117.20
Q3_2020	106.63	117.11

* Based on Base period Q1_2013

Figure 2: KBA – House Price Index Evolution



Main Price Drivers Remain Unchanged

In choosing a house, buyers consider a variety of attributes, including the plinth area, number of rooms, type of house, location, and other attributes.

The development of the quarter-on-quarter index-tracking changes in house prices is based on estimating a hedonic function. The hedonic regression estimates for the third quarter of 2020 are provided in **Table 2 (See Appendix)**. For comparison purposes, the first and second

quarter estimates are presented in **Table 3 and 4 (See Appendix)**.

The drivers of house prices in third-quarter 2020 were broadly stable and consistent with those of prior quarters with the type of house and its regional location dominantly influential thus underpinning the observation in previous house price evolution that neighbourhood attributes continue to play a significant role.



Apartments Continue to Dominate

Homebuyers' preferences continued to be dominated by apartments and mainly concentrated in Region 1. This further supports hedonic price estimates of the shift in buyers' preference to reflect their affordability.

The apartments accounted for approximately 43 percent, maisonnettes and bungalows accounted for 21 percent and 33 percent respectively, while townhouses accounted for 2 percent

of the concluded sales in the third quarter.

In terms of regional distribution, region 1 and region 2 accounted for 53 percent and 32 percent respectively, while region 3 accounted for 16 percent of the concluded transactions. Transactions are still happening in low volumes, as is the nature of this niche market, thus reinforcing the earlier observations of buyers' search for affordability.

Figure 3: Housing Market Activity by Region and House Type

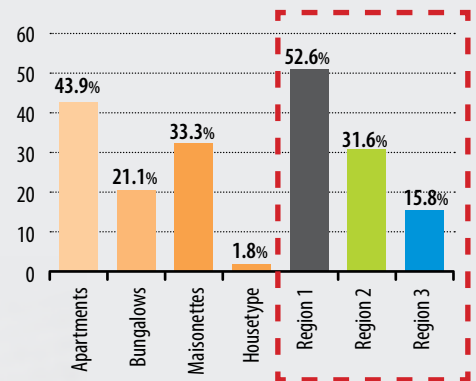
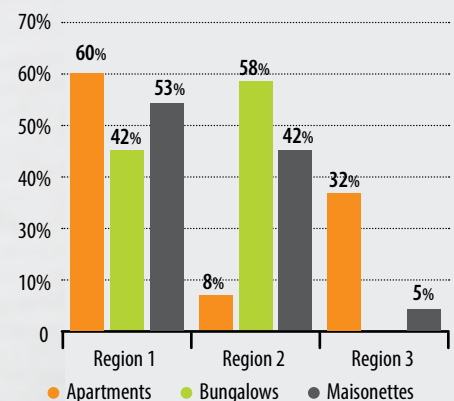


Figure 3(b): Housing Activity Concentrated within Region 2



Source: KBA-HPI

Table 2: Housing Price Index Drivers for Quarter 3 of 2020

Source	SS	df	MS
Model	6.25	8	0.78
Residual	3.78	48	0.08
Total	10.04	56	0.18

No. of Obs. = 57
 F(8, 48) = 9.92
 Prob > F = 0.00
 R-squared = 0.62
 Adj R-squared = 0.56
 Root MSE = 0.28

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Constant	15.32	0.64	23.8	0.00	14.03	16.61
Plinth area (LN)	-0.04	0.09	-0.44	0.66	-0.22	0.14
No of bedrooms	0.05	0.08	0.72	0.48	-0.10	0.21
No of bathrooms	0.27	0.08	3.3	0.00	0.11	0.43
No of floors	0.02	0.13	0.19	0.85	-0.24	0.29
Regional Dummy						
Region1	-0.19	0.09	-1.98	0.05	-0.37	0.00
Region3	0.35	0.14	2.42	0.02	0.06	0.64
House Type Dummy						
Apartment	0.09	0.53	0.17	0.86	-0.98	1.16
Maisonnette	0.28	0.15	1.88	0.07	-0.02	0.57



Housing Price Index
 Quarter 3, 2020  **117.11**

Table 3: Housing Price Index Drivers for Quarter 2 of 2020

Source	SS	df	MS
Model	8.35	8.00	1.04
Residual	6.02	81.00	0.06
Total	14.37	89.00	0.07

No. of Obs. = 90
 F(8, 81) = 14.060
 Prob > F = 0.000
 R-squared = 0.581
 Adj R-squared = 0.540
 Root MSE = 0.273

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Constant	14.323	0.581	22.400	0.000	11.866	14.180
Plinth area (LN)	0.358	0.084	4.270	0.000	0.191	0.525
No. of bedrooms	0.294	0.063	4.690	0.000	0.169	0.418
No. of bathrooms	-0.180	0.084	-2.150	0.035	-0.348	-0.013
No. of floors	0.003	0.058	0.060	0.955	-0.112	0.118
House Type Dummy						
housetype 1	-0.180	0.310	-0.580	0.564	-0.797	0.438
housetype 2	-0.168	0.146	-1.150	0.252	-0.458	0.122
Regional Dummy						
Region 1	0.003	0.119	0.020	0.982	-0.233	0.239
Region 3	0.454	0.151	3.000	0.004	0.153	0.754



Housing Price Index
 Quarter 2, 2020  **117.20**

Table 4: Housing Price Index Drivers for Quarter 1 of 2020

Source	SS	df	MS
Model	70.88	10	7.09
Residual	7.83	136	0.06
Total	78.70	146.00	0.54

No. of Obs. = 147
 $F(12, 255) = 123.130$
 Prob > F = 0.000
 R-squared = 0.901
 Adj R-squared = 0.893
 Root MSE = 0.240

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
plinth area	0.100	0.058	1.720	0.088	-0.015	0.214
No. of bedrooms	0.516	0.180	2.860	0.005	0.159	0.873
No. of bathrooms	0.127	0.160	0.800	0.427	-0.189	0.444
No. of floors	-0.782	0.075	-10.400	0.000	-0.930	-0.633
Locational Dummy						
Region 2	-0.087	0.087	-0.990	0.323	-0.260	0.086
Region 3	0.459	0.104	4.420	0.000	0.253	0.664
Type of House						
Bungalows	-1.215	0.303	-4.010	0.000	-1.814	-0.616
Maisonette	-0.269	0.263	-1.020	0.308	-0.788	0.250
Other Drivers						
Presence of generator	0.439	0.142	3.100	0.002	0.159	0.719
presence of a gate house	-0.240	0.254	-0.950	0.345	-0.742	0.261
Constant	14.381	0.615	23.370	0.000	13.163	15.600



Housing Price Index
 Quarter 1, 2020  **117.44**

3

Table 5: Inter quarter Sub-Regional indices (Moving Base): Q2-2013 – Q3-2020

	Region 1			Region 2			Region 3		
	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes
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
Q3_2019	100.97	114.91	98.75	95.66	99.22	99.84	99.36	.	102.67
Q4_2019	102.6	87.15	101.27	.	.	101.16	99.04	.	.
Q1_2020	103.07	101.38	103.91	102.03	100.14	102.35	99.96	104.29	103.92
Q2_2020	103.04	101.22	104.85	102.10	100.57	102.14	99.91	.	103.86
Q3_2020	102.57	101.11	104.45	101.80	100.53	101.66	101.02	104.21	103.84

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

Note: dot (.) implies that the number of observations is insufficient to estimate the hedonic function and consequently the index.

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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