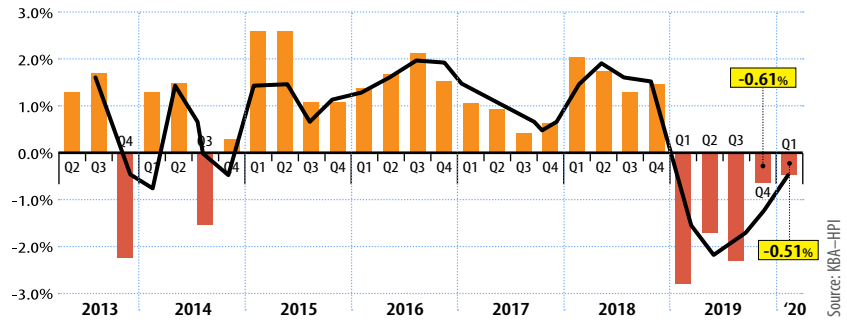
HOUSING PRICE INDEX

MAY 2020 ISSUE 22

House Prices Continue to Cool

House prices have remained in the deceleration path for the fifth consecutive quarter. According to the Kenya Bankers Association - House Price Index (KBA-HPI), house prices contracted by 0.54 percent in the first quarter of 2020, marginally reversing the deceleration rate by 0.07 percent from the 0.61 percent contraction in quarter four of 2019.

Figure 1: Housing Slowdown - Ailing growth? Overall Q-o-Q Price Change (%)



While the market remained largely depressed, the marginal easing was supported by the supply-demand interaction with a leaning towards more demand in a relative context. In quarter one of 2020, demand that is inferred from concluded sales rose by 13.95 percent driven by a pick up in new demand for townhouses, a modest 33 percent rise in demand for bungalows even as demand for apartments and maisonettes contracted by 95.9 percent and 57.1 percent respectively. Taken together, these shifts in trends reflect buyer's adjustment as affordability remains a crucial concern in the housing market.

The decelerating price growth trend is evidence of a property market with a distinct lack of momentum and characterized by a sign of normalization of house prices as the market comes into balance after a prolonged period of sustained price growth.

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Photo/ Conrad Media

The Numbers at a Glance

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

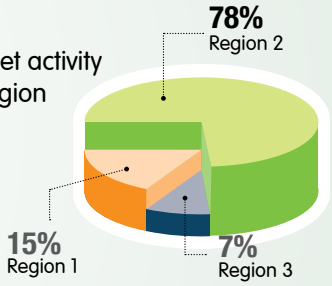
121.47	118.76	118.04	117.44
Q1_2019	Q2_2019	Q3_2019	Q4_2019

* Based on Base period Q1_2013

2 The main prices drivers were sensitive to:

- Plinth area (size)
- No. of Bedrooms
- No. of Bathrooms
- No. of Floors

3 Market activity by region



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 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:

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

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.

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With the construction sector growing by 6.4 percent in 2019 compared to a 6.9 percent growth in 2018, the housing market is starting the year 2020 on a shaky footing on the back of a depressed economic outlook for 2020, and sentiment-led deterioration in house price growth both acting as a brake on a scope for house price growth going forward.

Based on the Laspeyres Index methodology (**See Technical Note**), the house price growth sustained a downward trend (**Figure 2**).

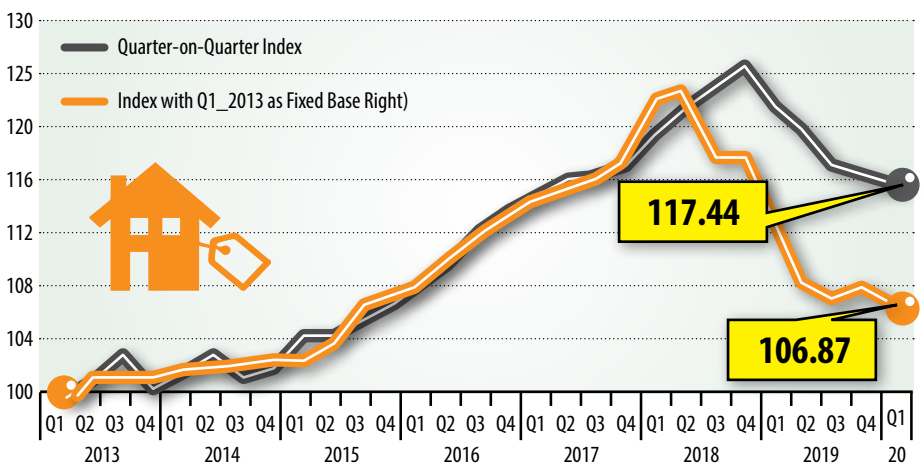
In quarter one of 2020, based on the moving base index, the KBA-HPI stood at 117.44 compared to 118.04 recorded in the prior quarter while the fixed base index stood at 106.87 from 107.86 percent in quarter four of 2019.

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	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

* Based on Base period Q1_2013

Figure 2: KBA – House Price Index Evolution



House Price Drivers Stable

The development of the quarter-on-quarter index-tracking house price changes is based on qualitative and quantitative parameters derived from the estimation of a hedonic function.

The hedonic regression estimates for the quarter one of 2020 are provided in **Table 2**, and the graphical representation of the effects of attributes are illustrated in **Figure 3**. For comparison purposes, the results of the fourth quarter and third quarters of 2019 are presented in **Table 3** and **4**.

Based on the hedonic function, the drivers of house prices during the first quarter of 2020 were broadly stable and consistent with those of the prior quarter. The evidence from the hedonic function suggests that the observed price variations are driven mainly by geographical location or region with houses in Region 3, attracting higher prices relative to Region 2 and Region 1.

The size of the plinth area also explains a considerable proportion of the difference so are the number of bedrooms and bathrooms revealing that homeowners seeking bigger houses in terms plinth area, more bedrooms and bathrooms must contend with the higher prices.

Further, the results reveal that the presence of back-up generator and other social amenities correlates with higher house price but inversely correlates with higher floors within a building indicating that home-buyers prefer low-density than high-density buildings

Town House Demand on the Rise

The distribution of type of house transactions by region presented in **Figure 3** shows that housing market activity was concentrated in Region 2 which accounted for 78 percent of the transactions while Region 1 and Region 2 accounted for 16 percent and 7 percent respectively.

Further, unlike in prior quarters usually characterized by high demand for apartments, quarter one of 2020 was one characterized by a run for townhouses which accounted for 45 percent of the units sold. Apartments accounted for 33 percent, bungalows and Maisonettes accounting for 12 percent and 10 percent respectively.

Figure 3: Effects of Structural House Characteristics on Property Price

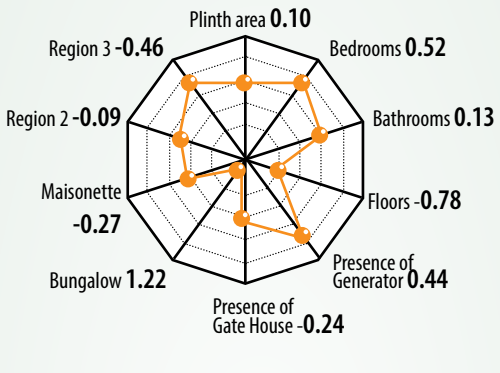


Figure 4: Housing Market Activity by Region and House Type

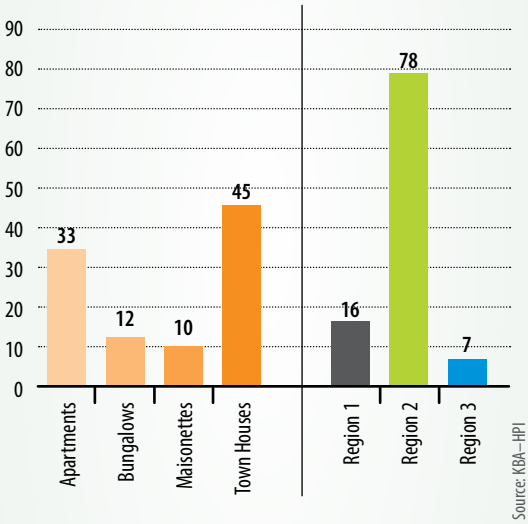


Figure 4(b): Housing activity concentrated within Region 2

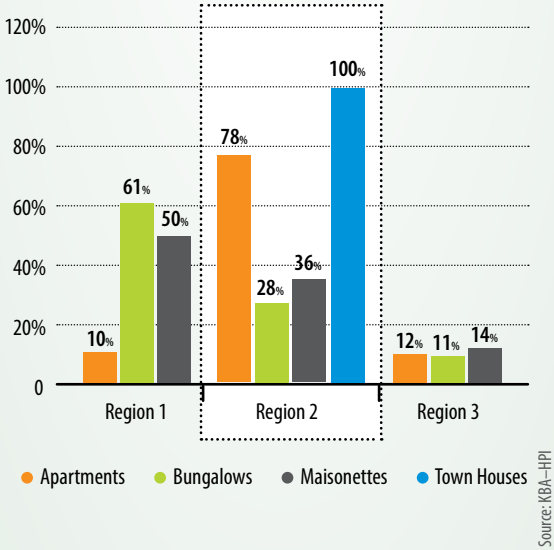


Table 2: Housing Price Index Drivers for Quarter 1 of 2020

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

Table 3: Housing Price Index Drivers for Quarter 4 of 2019

Source	SS	df	MS
Model	69.00	9	7.67
Residual	8.07	119	0.07
Total	**77.07**	**128**	**7.73**

No. of Obs. = 129
F(12, 255) = 113.090
Prob > F = 0.000
R-squared = 0.895
Adj R-squared = 0.887
Root MSE = 0.260

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Plinth area	0.439	0.082	5.340	0.000	0.276	0.602
No. of Bedrooms	0.190	0.046	4.130	0.000	0.099	0.282
No. of Bathrooms	0.099	0.087	1.140	0.255	-0.073	0.272
No. of Floors	-0.762	0.283	-2.690	0.008	-1.323	-0.201
Age of house	0.000	(omitted)				
Locational Dummy						
Region 2	0.499	0.123	4.050	0.000	0.255	0.743
Region 3	0.600	0.113	5.280	0.000	0.375	0.824
Type of House						
Apartments	-0.636	0.224	-2.840	0.005	-1.078	-0.193
Bungalows	-0.928	0.248	-3.750	0.000	-1.418	-0.438
Maisonette	-	-	-	-	-	-
Other Drivers						
Presence of S. Pool	9.003	3.618	2.490	0.014	1.838	16.168
Constant	14.381	0.615	23.370	0.000	13.163	15.600

Housing Price Index
Quarter 4, 2019

118.04

Table 4: Housing Price Index Drivers for Quarter 3 of 2019

Source	SS	df	MS
Model	22.194	9	2.466
Residual	8.609	261	0.026
Total	**28.587**	**340**	**0.091**

No. of Obs. = 341
F(12, 255) = 94.810
Prob > F = 0.000
R-squared = 0.721
Adj R-squared = 0.713
Root MSE = 0.161

Natural logarithm of Property Value	Coef	Std. Err.	t - stats	P>|t|	[95% Conf. Interval]	
Plinth area	0.287	0.055	5.19	0.000	0.1786	0.3963
No. of Bedrooms	0.092	0.033	2.79	0.006	0.0272	0.1568
No. of Bathrooms	0.065	0.027	2.37	0.018	0.0109	0.1183
No. of Floors	0.232	0.069	3.36	0.001	0.0962	0.3681
Age of house	0.000	(omitted)				
Locational Dummy						
Region 2	0.128	0.043	2.99	0.003	0.044	0.212
Region 3	0.915	0.058	15.83	0.000	0.801	1.029
Type of House						
Apartments	-1.760	0.413	-4.26	0.000	-2.573	-0.947
Bungalows	-0.200	0.089	-2.25	0.025	-0.374	-0.025
Maisonette	-	-	-	-	-	-
Other Drivers						
Presence of Elevator	-1.692	0.480	-3.52	0.000	-2.637	-0.748
Constant	15.437	0.406	38.07	0.000	14.639	16.235

Housing Price Index
Quarter 3, 2019 **118.76**

Table 5: Inter quarter Sub-Regional indices (Moving Base): Q2-2013 – Q1-2020

	Region 1			Region 2			Region 3		
	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes	Apart-ments	Bunga-lows	Maison-ettes
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
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

* 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, 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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