



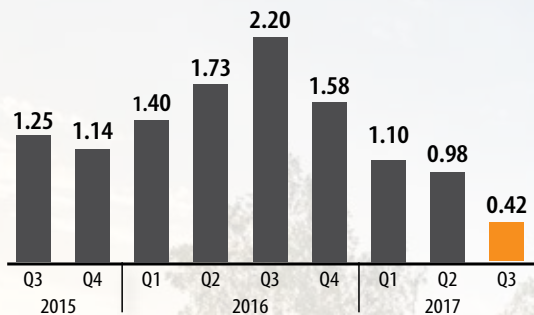
# HOUSING PRICE INDEX

NOVEMBER 2017

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## No Respite for the Declining Trend in the Rate Of House Prices Increase

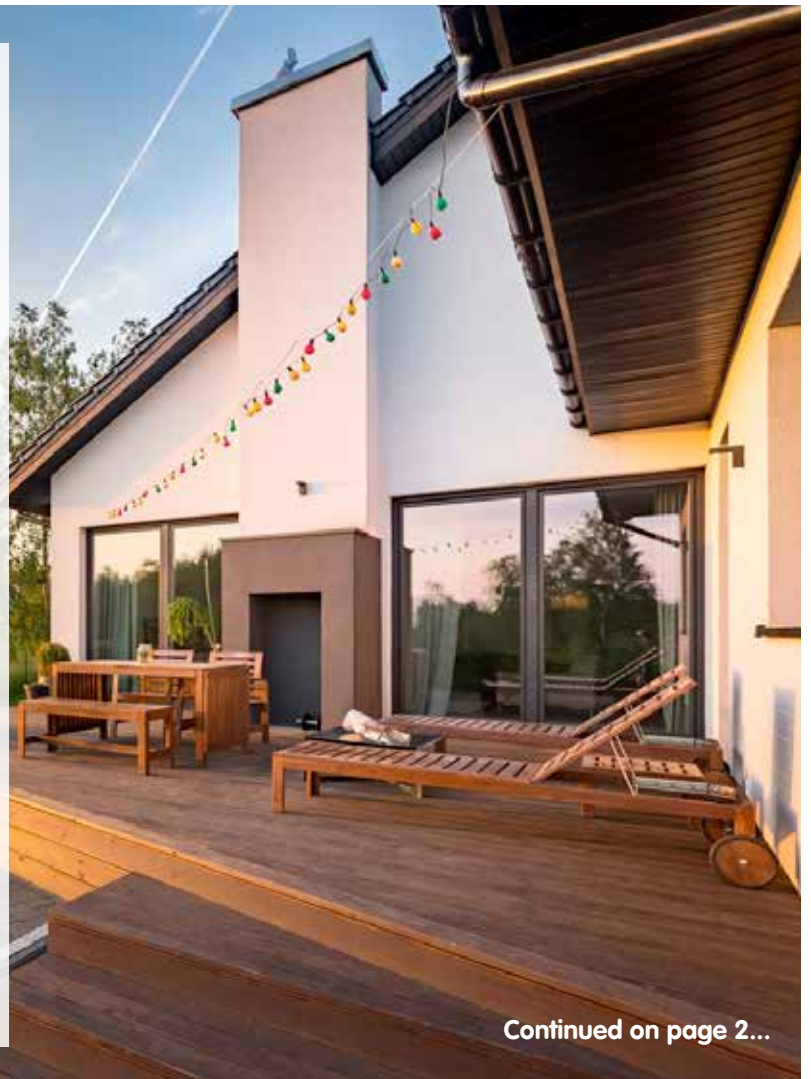
Figure 1: Overall Price Change (%)



There was a 0.42 percent increase in overall house prices during the third quarter of 2017 compared to the previous quarter's 0.98 percent. This is an indication that there is no respite for the declining trend in the rate of house prices increase since the third quarter of 2015 (Figure 1).

The trend on growth in house prices mirrors that of credit growth to the private sector. Credit is evidently integral in influencing the demand and supply dynamics in the housing market.

With the generally depressed demand in the economy and the slowdown in credit expansion, households relying on the credit market towards home acquisition have been adversely effected. This has consequently influenced the house prices trend.



Continued on page 2...

## Highlights

**1** House prices rose by 0.42 percent during the third quarter of 2017 compared to the 0.98 percent rise during the second quarter of 2017.

**2** The declining trend in the rate of growth of house prices mirrors that of credit in the private sector.

**3** The generally depressed demand on the back of credit constraints influenced the housing market dynamics

## Technical Note

The index follows a Laspeyres 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:

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

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  $w_0$  are the weights of the respective variables for the preceding quarter.



## No Respite for the Declining Trend in the House Price Index

...continued from page 1

The sluggish demand environment has provided little incentive for increase supply of housing units, a situation that is compounded by the constrained supply of financing.

Further, the political environment seems to be affecting both sides of the market. On the demand side potential home buyers could be on hold back on decisions to invest in home ownership while on the supply side, investors in the real estate could also be on a wait and see mode.

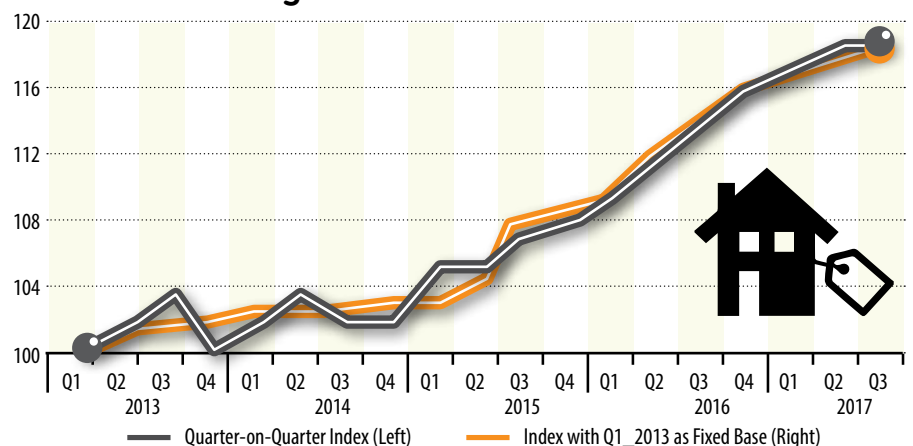
Since the base period of the first quarter of 2013, house prices have risen by 17.59 percent up to the end of the third quarter of 2017 as shown on the fixed base index (Figure 2).

Table 1: Price Movement Series

Period	Index with a fixed base*	Index with a moving base
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
Q3_2016	113.05	113.31
Q4_2016	114.91	115.10
Q1_2017	115.92	116.37
Q2_2017	116.67	117.52
Q3_2017	117.59	118.01

\* Based on Base period Q1\_2013

Figure 2: KBA-HPI Evolution



## Home Buyers' Taste Remain Consistent



Modern luxurious bathroom with jacuzzi, shower and his and hers wash sinks.

The house price drivers in quarter 3 of 2017 remained largely unchanged compared the previous quarters. The size of the house as captured by plinth area of the house, number of bedrooms, presence of backyard, master ensuite, gym area were among the core drivers of house prices during the quarter. The effect of the number of bathrooms in influencing house prices during the quarter appeared fairly muted.

During the quarter, the type of the house was core in influencing the house prices. This speaks to the difference in the interests of the various potential home buyers which would be informed by the income levels as well as the family size.

Attributes such as presence of swimming pool, proximity to basic social amenities, gated community, borehole for consistent water supply and presence of power backup generator significantly moved prices during quarter 3 of 2017.

## Flats lead in subregional market

Apartments took the upper hand in terms of the total number of units offered in the market. Apartments accounted for 82.66 percent of the total number of units sold in Q3 of 2017 with maisonettes and bungalows accounting for 10.70 percent and 6.64 percent respectively.

Across all the market segments (Lower market segment, middle and upper market segments) prices of apartments registered the highest rise compared to prices of bungalows and maisonettes, with the rise in prices in the latter two

segments being more or less muted.

The rise in the price of apartments compared to bungalows and maisonettes signals an element of the search for affordability by potential home buyers given the lower cost of construction per unit on the developers' side and therefore relatively lower offer process.

As a consequence, market activity appears to be skewed towards the lower end compared to the middle and the upper market segment.



Apartments accounted for 82.66 percent of the total number of units sold in Q3 across all the sub-regions.

**Table 2: Housing Price Index Drivers for Quarter 3\_2017**

Source	SS	df	MS	Prob > F = 0.000		
Model	142.5854	24	5.9411	# observations = 393		
Residual	30.1178	368	0.0818	R-squared = 0.8256		
				Adj R-squared = 0.8142		

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.5135	0.0613	8.37	0.000	0.3928625	0.6340811
Number of Bedrooms	0.1895	0.0405	4.68	0.000	0.1099649	0.269124
Number of Bathrooms	0.0638	0.0377	1.69	0.092	-0.0103733	0.1379499
House type	0.0315	0.2058	0.15	0.078	-0.3731869	0.4361978
Age	-0.0962	0.1718	-0.56	0.576	-0.4340115	0.2416504
Time dummy (Q2_2017)	0.0268	0.1555	0.17	0.863	-0.3325122	0.2789132
Locational Dummy	0.0011	0.0016	0.70	0.487	-0.004215	0.0020103
Number of Floors	0.0226	0.0168	1.35	0.179	0.0104037	0.0556455
Presence of Backyard	-0.2051	0.2666	-0.77	0.442	-0.7293449	0.3192038
Presence of Balcony	0.0399	0.2163	0.18	0.854	-0.4652333	0.3853693
Presence of DSQ	-0.0316	0.0851	0.37	0.010	0.1356787	0.1989756
Presence of Gymn	0.4357	0.1557	2.80	0.005	0.1295082	0.7418062
Swimming Pool	0.4950	0.1331	3.72	0.000	0.233184	0.7567346
Prox. to Social Amenities	0.0250	0.1135	0.22	0.026	0.1982571	0.2483126
Master Ensuite	0.2021	0.0866	2.33	0.020	0.0318466	0.3723246
Garage/Parking	0.0695	0.0931	0.75	0.528	0.1242086	0.2417415
Separate Dining	0.2575	0.1737	1.48	0.139	-0.0841469	0.5991115
Gated Community	0.0831	0.0916	0.91	0.065	0.0970072	0.2631705
Presence of Borehole	0.1647	0.1210	1.36	0.075	-0.4026447	0.0733354
Presence of Guestroom	0.0760	0.1162	0.65	0.513	-0.152447	0.3044682
Presence of Jacuzzi	0.1426	0.2208	0.65	0.519	-0.5767169	0.2915476
Presence of Geyser Closet	-0.1356	0.3062	-0.44	0.658	-0.7377479	0.4665589
Presence of Elevator	0.0187	0.1722	0.11	0.914	-0.319971	0.3573794
Backup Generator	0.2112	0.1000	2.11	0.035	0.0145953	0.4077972
Presence of wooden Floor	-0.5044	0.2124	-2.38	0.018	-0.9219681	-0.0867916
Constant	11.7708	0.6184	19.03	0.000	100.55478	120.98689

Housing Price Index  
 Quarter 2, 2017 **+118.01**

**Table 3: Housing Price Index Drivers for Quarter 2\_2017**

Source	SS	df	MS
Model	181.738061	25	7.26952244
Residual	48.809742	505	0.096652954

Prob > F = 0.0000  
 # observations = 530  
 R-squared = 0.7883  
 Adj R-squared = 0.7778

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.4157	0.0453	9.19	0.000	0.3268272	0.5046411
Number of Bedrooms	0.0904	0.0366	2.47	0.014	0.0183967	0.1623474
Number of Bathrooms	0.0845	0.0378	2.24	0.026	0.0103154	0.1587486
House type	0.5055	0.1046	4.83	0.000	0.3000746	0.7109892
Age	-0.1619	0.1097	-1.48	0.141	-0.3774033	0.0536086
Time dummy (Q2_2017)	0.0212	0.1362	0.16	0.876	0.2464747	0.2888444
Locational Dummy	0.0014	0.0016	0.88	0.380	0.0017551	0.0045973
Number of floors	-0.0014	0.0140	-0.10	0.918	-0.0260627	0.0289512
Presence of Backyard	0.2265	0.1093	2.07	0.039	0.011856	0.4411378
Presence of Balcony	0.8346	0.1281	6.51	0.000	0.5828438	1.086279
Presence of DSQ	0.0160	0.0600	0.27	0.789	-0.1017523	0.1338461
Presence of Gymn	0.2388	0.1131	2.11	0.035	0.0164915	0.4610469
Swimming pool	0.0300	0.0765	0.39	0.695	-0.1203983	0.1803478
Prox. to Social amenities	0.0511	0.0778	0.66	0.512	0.1017768	0.2039063
Prox. of Master ensuite	0.1395	0.0821	1.70	0.090	-0.0217546	0.3006973
Garage/parking	0.0588	0.0931	0.63	0.528	0.1242086	0.2417415
Separate dining	-0.1078	0.1044	-1.03	0.302	-0.3128846	0.0973072
Gated community	0.1457	0.0573	2.54	0.011	0.0331975	0.2582218
Presence of borehole	0.1223	0.0806	1.52	0.130	0.0359885	0.280673
Presence of Guestroom	-0.3258	0.1771	-1.84	0.066	-0.6737706	0.0222039
Presence of Jacuzzi	0.8996	0.2068	4.35	0.000	0.4932141	1.305959
Presence of Elevator	-0.2033	0.3262	-0.62	0.034	-0.8441425	0.4376278
Backup - generator	0.9307	0.1031	9.03	0.000	0.728094	1.133231
Presence of woodedfloor	0.0963	0.0739	1.3	0.193	-0.0489241	0.2414805
Constant	13.6684	0.4489	30.45	0.000	12.78643	14.5504

Housing Price Index  
 Quarter 2, 2017

**+117.52**

**Table 4: Housing Price Index Drivers for Quarter 1\_2017**

Source	SS	df	MS
Model	120.135033	24	5.0056264
Residual	51.094788	341	0.14983809

**Prob > F = 0.0000**  
**# observations = 366**  
**R-squared = 0.7016**  
**Adj R-squared = 0.5469**

LN VALUE	Coef	Std. Err.	t - stats	P> t	[95% Conf. Interval]	
Plinth area	0.2036	0.0426	4.78	0.000	0.1198816	0.2873931
No. of Bedrooms	0.0575	0.0437	1.32	0.089	-0.143507	0.0284387
No. of Bathrooms	0.2823	0.0463	6.09	0.000	0.1911736	0.3733919
House type	0.4064	0.1221	3.33	0.001	0.06465191	0.1662084
Age	0.4189	0.1102	-3.80	0.000	-0.6356136	-0.2021257
Time dummy Q1_17	0.6734	0.1122	6.00	0.000	0.4527811	0.8939682
Locational Dummy	0.0037	0.0049	0.76	0.051	-0.0132322	0.0058915
Number of floors	-0.0207	0.0245	-0.84	0.400	-0.0688262	0.0275138
Backyard	0.5119	0.1168	4.38	0.000	0.2821203	0.7416686
Presence of Balcony	0.7110	0.1555	4.57	0.000	0.4052001	1.016819
Presence of DSQ	0.0577	0.0752	0.77	0.444	-0.0902376	0.2055608
Presence of Gymn	0.1739	0.1347	-1.29	0.198	-0.438758	0.0910385
Swimming pool	0.0374	0.1183	0.32	0.752	-0.1952183	0.2700741
Prox. to Social amenities	0.2315	0.1026	2.26	0.025	0.0297598	0.4332167
Master ensuite	-0.2245	0.1134	-1.98	0.049	0.0014119	0.4475159
Garage/parking	0.3233	0.1060	3.05	0.002	0.114794	0.5319028
Separate dining	0.3138	0.1062	2.95	0.003	0.1048421	0.522766
Gated community	0.0922	0.1007	0.92	0.361	-.1058562	0.2902172
Borehole	0.0808	0.0931	0.87	0.060	-.2640054	0.1023596
Guestroom	1.0025	0.2281	4.40	0.000	0.553898	1.451102
Jacuzzi	0.7836	0.2574	3.04	0.003	-1.289838	-0.2772664
Elevator	0.4565	0.1188	3.84	0.000	0.2228469	0.69018
Backup - generator	0.0432	0.1064	0.41	0.085	-.1661001	0.2524474
Presence of woodedfloor	0.2787	0.0954	2.92	0.004	0.0911823	0.4663034
Constant	14.8686	0.4046	36.75	0.000	14.07276	15.66438

Housing Price Index  
Quarter 1, 2017

**+116.37**

**Table 5: Inter quarter Sub-regional indices (Moving base): 2013 - 2017**

	Region 1			Region 2			Region 3		
	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes
<b>Q1-2014</b>	100.45	99.38	99.67	101.63	100.91	100.91	97.70	102.58	102.58
<b>Q2-2014</b>	100.50	99.67	99.54	100.75	101.75	101.27	96.70	102.74	103.32
<b>Q3-2014</b>	99.41	100.31	100.33	100.63	101.27	99.91	98.90	102.98	100.56
<b>Q4-2014</b>	97.48	99.29	105.21	97.82	101.98	99.61	104.54	104.36	100.62
<b>Q1-2015</b>	95.20	101.54	100.95	98.67	102.01	100.25	104.67	104.92	100.71
<b>Q2-2015</b>	102.92	102.78	100.53	101.11	102.05	100.77	105.23	104.91	102.51
<b>Q3-2015</b>	103.54	103.04	101.02	104.81	102.99	101.51	105.54	105.43	104.08
<b>Q4-2015</b>	105.23	104.57	104.66	104.84	103.47	102.43	106.25	105.37	105.26
<b>Q1-2016</b>	105.56	106.49	104.87	104.22	103.30	102.58	107.05	105.96	105.37
<b>Q2-2016</b>	103.48	104.08	102.96	100.19	100.30	100.93	101.23	100.96	100.27
<b>Q3-2016</b>	104.81	104.92	104.02	103.62	101.51	102.62	103.07	102.59	104.29
<b>Q4-2016</b>	106.82	105.05	104.83	105.04	102.61	103.6	105.72	102.94	105.94
<b>Q1-2017</b>	108.63	105.81	104.96	106.75	102.81	104.27	107.49	103.27	106.24
<b>Q2-2017</b>	109.73	105.97	105.22	107.86	102.96	104.79	108.65	103.83	106.7
<b>Q3-2017</b>	110.04	106.08	105.63	107.93	103.17	105.08	109.38	103.94	107.08

**Table 6: Inter quarter Sub-regional indices (Fixed base): 2013 - 2017**

	Region 1			Region 2			Region 3		
	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes	Apartments	Bungalows	Maisonettes
<b>Q1-2014</b>	99.57	100.55	100.55	99.41	101.46	101.01	100.24	102.20	100.11
<b>Q2-2014</b>	99.62	100.34	97.76	100.98	102.07	101.39	100.82	102.18	101.47
<b>Q3-2014</b>	99.94	100.04	97.88	100.51	101.06	104.15	99.19	102.29	99.74
<b>Q4-2014</b>	99.74	100.52	98.93	100.48	100.19	102.15	100.07	104.09	99.41
<b>Q1-2015</b>	95.39	101.32	100.19	100.13	100.741	101.67	100.05	104.52	99.50
<b>Q2-2015</b>	99.41	102.95	101.41	101.90	100.81	100.01	103.23	104.70	100.95
<b>Q3-2015</b>	100.74	102.77	101.30	103.37	101.65	103.03	105.21	106.76	104.87
<b>Q4-2015</b>	100.92	103.01	103.09	105.75	101.98	102.62	109.31	110.61	105.32
<b>Q1-2016</b>	101.85	104.88	103.06	106.29	101.18	104.99	109.99	110.90	105.97
<b>Q2-2016</b>	102.11	105.85	104.21	106.69	101.38	105.12	112.57	110.97	106.82
<b>Q3-2016</b>	103.01	106.21	104.97	105.61	102.6	106.31	114.41	112.06	108.49
<b>Q4-2016</b>	104.29	106.93	105.07	106.73	102.94	106.96	116.23	112.73	108.95
<b>Q1-2017</b>	106.4	107.04	105.79	108.64	102.99	107.29	118.69	113.48	109.05
<b>Q2-2017</b>	107.2	107.85	106.03	110.41	103.39	107.51	119.79	113.74	109.79
<b>Q3-2017</b>	107.91	107.94	106.84	111.49	103.81	107.86	108.05	113.79	110.7

\* 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, 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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