The Impact of Aircraft Noise on Brisbane Residential Property Sectors: 1988-2017

2017 BRISBANE RESIDENTIAL PROPERTY INVESTMENT PERFORMANCE UPDATE

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November 2018

1. Introduction

These tables represent the updated suburb investment returns for all 36 suburbs included in the initial 2014 report and the updates carried out in 2015, and 2016. This report will also report on an additional 14 suburbs identified by BAC to be included in the analysis. For these 14 suburbs the sales transaction data for the period 1988 to 2017 has been the basis of the additional analysis. This study now covers 50 Brisbane suburbs, across a range of geographic and socio-economic sectors.

With the addition of the 2017 residential property sales transactions, the investment performance analysis now covers the years 1988 to 2017, a 30-year period. Over these thirty years, the Brisbane residential property sector has been subject to periods of housing booms and recessions; therefore, the results reflect an accurate overview of the investment performance of each of the suburbs in the study. The analysis over the period 2016 and 2017 has also covered the period of oversupply of residential units in Brisbane, particularly in the inner city suburbs of Brisbane.

As per previous updates, the initial analysis covers the 36 suburbs identified in 2012/2013 and classified as High Noise Complaints (HNC), Moderate Noise Complaints (MNC) and No Noise Complaints (NNC). Although there has been some variation in the classification of noise complaints across Brisbane since 2013, these initial 36 suburbs are still grouped for the updated analysis. Additional suburbs subject to aircraft movements or noise are included in the later sections of this report. Like previous report updates, the middle socioeconomic suburbs in the HNC locations are compared to the middle socio-economic suburbs in the MNC and NNC suburb locations.

Results are also updated for residential home units/townhouses located in the 36 suburbs selected to give a snapshot of the short and long term investment performance for a range of Brisbane suburbs with varying degrees of impact from aircraft operations.

In addition to the investment performance analysis based on suburb exposure to aircraft noise, the update also compares the investment performance for individual suburbs located under the current south and north flight paths, suburbs that will be potentially subject to flight paths when the new runway operations commence and suburbs that are currently not affected by aircraft noise and will remain so when the new runway opens. Fourteen additional suburbs have been added to the previous analysis. This report also includes Highgate Hill, East Brisbane, Woolloongabba, Teneriffe, Toowong, Kangaroo Point, Moorooka, Fairfield, Pinkenba, Nudgee Beach, Dutton Park, Rocklea, The Gap and Tingalpa for the period 1988 to 2017. In total, 53 suburbs of Brisbane have now been analysed to determine their average annual capital returns and investment performance based on median and average house prices. An alphabetical listing of these suburbs and their investment performance is also included as appendices 1 and 2 of the report.

In all cases, the analysis is based on both the annual median house price and the annual average house price for each of the suburbs analysed. The investment performance analysis comprises:

» 2017 capital return (median house price)

» 2017 capital return (average house price)

» 1988-2017 capital return (median house price)

» 1988-2017 capital return (average house price)

» 2017 capital return (median unit price)

» 2017 capital return (average unit price)

» 1988-2017 capital return (median unit price)

» 1988-2017 capital return (average unit price)

» Average annual volatility (median and average house and unit price)

» Risk/Return ratio

The most significant result from the 2017 data is the fact for the first time in many years the median and average house investment return for the full Brisbane region has been higher than the investment return for houses in the High, Moderate and Low noise complaint suburbs of Brisbane. This has been due to the very high returns for suburbs in the lower, outer socio-economic suburbs of Brisbane compared to the middle to high middle inner and middle ring suburbs. In many cases the outer suburbs of Brisbane had investment returns in 2017 nearly twice the return of many middle and inner ring housing suburbs.

2017 also saw a continuing decline in the investment performance of units and apartments across Brisbane. The oversupply of inner city apartments has again resulted in negative returns for the majority of suburbs in 2017.

In 2017 the median house price for the HNC suburbs increased from $718,000 to $756,000, an annual percentage increase of 5.29, compared to 5.56% for the MNC suburbs and 4.50% for the NNC suburbs. Sales volume across all noise complaint classifications were again less in 2017 compared to 2016. This 12 month reduction in sales volume ranged from -5.29% for the HNC suburbs to -1.38% for the NNC suburbs.

The base data for the years 1988 to 2013 can be found in the full QUT/BAC report released in 2014, with the 2015 and 2016 data update available in separate reports. These reports are available for download from the Brisbane Airport website, bne.com.au.

2 Suburb Comparison
High, Moderate and Minimal/ No noise complaints

Table 1: Capital Return and Investment Performance: Median Price 1988-2017

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise	5.29	8.39	8.85	1.06
Moderate Noise	5.56	8.66	8.71	1.01
No/Low Noise	4.50	7.34	8.05	1.10
Brisbane LGA	6.19	7.20	7.89	1.10

In 2016 the annual return for houses in the HNC suburbs, based on median house prices, was higher compared to the 2016 capital return for the MNC and NNC suburbs. However, in 2017 the capital returns for all noise classification suburbs have been less than the 2016 returns. In 2017 the HNC suburbs recorded a capital growth of 5.29% compared to 5.56% for the MNC suburbs and both these sectors recorded a slightly higher capital return than NNC suburbs at 4.50%. These returns were not consistent across all suburbs, in the various noise classifications, and these variations are shown in the later tables in this report update.

When the full 30 year period is analysed the HNC and MNC suburbs continue to outperform the NNC and Brisbane housing market in general, despite the lower performance in 2017. Table 1 shows that the 30 year average capital return for the HNC (8.39%) and MNC (8.66%) suburbs still continue to outperform the NNC (7.34%) and Brisbane (6.19%) median house price. These higher median house price returns have also been achieved at lower risk levels resulting in lower risk return ratios. Unlike previous years, the highest capital returns were achieved in the lower value, outer suburbs of Brisbane, with some of the lowest 2017 capital growth being in a number of the higher socio-economic inner city suburbs of Brisbane included in the study.

Table 2: Capital Return and Investment Performance: Average Price 1988-2017

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise	7.67	8.55	9.07	1.06
Moderate Noise	7.54	8.37	9.75	1.17
No/Low Noise	6.40	7.21	8.20	1.14

Based on average house prices the results for 2017 differ significantly across the various noise complaint categories. During 2017 the capital return for the HNC suburbs (7.67%), based on average house prices, was higher than both the MNC (7.54%) and NNC (6.40%) suburbs. These capital returns at 7.67% were also higher than the returns based on median house prices suggesting that the activity in the market during 2017 was predominately in the higher price bracket for these suburbs. Over the full 30-year period, the average annual capital returns have been slightly higher for average house prices compared to median house prices for the suburbs in the study. The HNC suburbs still outperform the other noise classifications over the 30-year period based on average house prices (refer to Table 2).

Volatility levels, based on average house prices, was also slightly higher than the 30 year analysed data based on median house prices.

Across all groupings the annual return for 2017 was lower than the 2016 capital returns based on average house prices. This has resulted in a slight fall for the HNC suburbs for 1988 to 2017 (8.58% to 8.53%). The falls for the MNC and NNC suburbs was very similar in 2017, with MNC long term average falling from 8.40% to 8.37% and NNC from 7.24% to 7.21%. The HNC suburbs have again recorded the highest average annual returns for the full study period. (Refer to Tables 1 and 2).

3 Suburb Comparison: Houses
High Noise Complaint Suburbs v Middle Socio Economic Suburbs

Table 3: Capital Return and Investment Performance: Median Price 1988-2017: HNC v Middle Socio-economic suburbs

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise Suburbs	5.78	8.39	8.55	1.06
Middle socio Economic Suburbs	7.06	7.66	9.33	1.22

Table 3 shows that when the middle socio-economic suburbs in the HNC suburbs are compared to the middle socio economic suburbs in the MNC and NNC classifications, 2017 saw a significant difference in the capital return based on median house prices (5.78% and 7.06% respectively). This difference in 2017 can be explained in part by the MNC and NNC classifications having a greater number of suburbs in the outer ring suburbs of Brisbane, with the majority of HNC suburbs being middle ring suburbs. During 2017 the outer ring suburbs achieved higher capital growth compared to the middle socio-economic suburbs closer to the Brisbane CBD.

However, based on the full 30-year analysis the HNC suburbs are still outperforming the middle socio-economic suburbs in the MNC and NNC classifications (8.39% and 7.66% respectively).

Table 4: Capital Return and Investment Performance: Average Price 1988-2017: HNC v Middle Socio-economic suburbs

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise Suburbs	7.67	8.51	9.04	1.06
Middle socio Economic Suburbs	11.39	6.80	9.05	1.33

The middle value HNC suburbs have also shown a slightly lower volatility and a better risk return ratio compared to similar valued suburbs in the MNC and NNC locations.

Table 4 shows that this trend was not the same when the analysis is carried out on the basis of average house prices. In 2017, the middle socio-economic suburbs showed a capital growth of 11.39% compared to 7.67% for the HNC suburbs. This again reflects the better investment performance of the outer middle ring suburbs of Brisbane in 2017. However, based on the full 30-year study period, the HNC suburbs still outperform similar socio-economic suburbs in the MNC and NNC suburbs, 8.51% compared to 6.80%.

Table 5: Annual % Variation between HNC Suburbs and Middle Socio-economic suburbs: Median Price and Average Price: 1988-2017

Year	Median Price Comparison (%)		Average Price Comparison (%)
1988	-1.23	1988	-19.27
1989	3.06	1989	-12.88
1990	-2.54	1990	-10.79
1991	-6.92	1991	-8.90
1992	-3.70	1992	-4.76
1993	1.45	1993	3.40
1994	0.69	1994	2.55
1995	2.13	1995	0.00
1996	-6.00	1996	-11.05
1997	4.83	1997	3.73
1998	-4.91	1998	-5.46
1999	0.00	1999	-1.10
2000	7.27	2000	0.00
2001	7.50	2001	5.86
2002	7.69	2002	8.57
2003	6.81	2003	9.57
2004	3.54	2004	3.41
2005	3.51	2005	6.31
2006	2.50	2006	2.48
2007	7.37	2007	5.50
2008	3.70	2008	4.53
2009	1.89	2009	-2.46
2010	3.15	2010	2.54
2011	3.88	2011	2.52
2012	4.70	2012	2.00
2013	4.46	2013	2.04
2014	6.78	2014	6.22
2015	7.58	2015	9.38
2016	1.23	2016	2.41
2017	-1.33	2017	-3.72
Average Annual Difference	+2.52	Average Annual Difference	+0.41

Table 5 shows the percentage difference between average annual house prices for the middle value HNC suburbs and the middle value MNC and NNC suburbs based on median and average house prices. This table shows that the lower returns for HNC suburbs in 2017 has reduced the difference in average returns over the 30 year period slightly. Despite the lower returns in 2017, the overall differences in the average annual returns based on median house prices is +2.52% greater for the HNC suburbs and average house prices +0.41% greater.

4 Suburb Comparison: Units
High moderate and minimal/ no noise complaints

Table 6: Capital Return and Investment Performance: Median Price 1988-2017

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise	-0.42	6.28	8.01	1.26
Moderate Noise	1.77	6.03	7.11	1.18
No/Low Noise	-0.63	5.87	9.09	1.54
Brisbane	-4.46	5.03	9.29	1.85

Based on median prices, the units in the HNC suburbs have shown a negative return of -0.42% for 2017, with prices in the MNC suburbs actually improving in 2017 to record a capital growth of 1.77% and NNC suburbs showing a negative return of -0.63% for the same period. All these sectors had a better performance in 2017 compared to the Brisbane median unit price with a negative return of -4.46%. The significant fall in the Brisbane median unit price has been influenced by the oversupply of units in the CBD and CBD fringe suburbs.

The limited or negative growth is still more a function of the oversupply of units in Brisbane, particularly the inner-city suburbs, rather than aircraft noise issues. The oversupply situation has a greater impact based on average unit prices which showed negative returns of 8.28% for HNC suburbs, 13.29% for MNC suburbs and a negative 5.83% for units in NNC suburbs.

Table 7: Capital Return and Investment Performance: Average Price 1988-2017

Location	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
High Noise	-1.85	6.04	6.36	1.05
Moderate Noise	-6.78	5.80	6.59	1.13
No/Low Noise	1.98	4.92	12.76	2.58

During 2017 units in the HNC suburbs still continue to outperform units in the MNC based on average unit prices -1.85% and -6.78% respectively; however, the NNC suburbs actually recorded a slight increase in average unit capital returns of 1.98%.

The lower return for units in the MNC suburbs has resulted in a slight increase in the difference in average annual

capital returns for the past 30 years. Over the full study period, based on average unit prices, the average annual capital return for the HNC suburbs is 6.04% compared to 5.80% for MNC suburbs and 4.92% for the NNC suburbs. Unit returns still remain consistently lower than house returns for the same periods.

5 Individual Suburb Performance:
Median and Average House Prices 1988-2017

In addition to the 36 suburbs analysed on a noise complaint basis, the following analysis shows the investment performance of all these 36 suburbs plus an additional 17 suburbs in Brisbane that have no impact to considerable impact from the current and new Brisbane Airport runway operations.

This suburb comparison has been initially broken down on the basis of geographic location in Brisbane. The classifications are:

» Inner city suburbs

» Northern suburbs

» Southern suburbs

» Eastern suburbs and

» Western suburbs.

For each of these suburbs the investment performance is recorded in respect to the capital return for 2017, based on the change in median and average house prices from 2016 to 2017, as well as the long term investment performance of houses in these suburbs over the period 1988 to 2017. In addition to the capital returns, the volatility and risk return ratios for these suburbs are analysed.

6 Individual Suburb Performance:
Inner City

Table 8: Inner City Houses: Median Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk return Ratio
East Brisbane	-3.93	9.47	13.99	1.48
Highgate Hill	-18.84	9.17	12.85	1.40
Kangaroo Point	34.47	11.21	24.01	2.14
New Farm	-3.73	12.04	15.66	1.30
Teneriffe	47.76	14.92	24.88	1.67
Woolloongabba	5.63	9.41	12.27	1.30
Greater Brisbane	6.19	7.20	7.89	1.10

During 2017 there was significant variations in the capital returns and price increases for houses in the Brisbane inner city suburbs. In 2017 this ranged from a decrease in returns, based on median house prices, in East Brisbane, Highgate Hill and New Farm. The highest 2017 return was in Kangaroo Point, but based on a small number of high end property sales compared to the same suburb in 2016. A major factor in this variation is the small number of house sales that occur in these suburbs, as the major property type is home units/apartments. This low sales volume can also result in significant price differences from year to year

and this is reflected in the high levels of volatility ranging from 12.27% (Woolloongabba) to 24.88% (Teneriffe). The more constant factor in these inner-city suburbs is the overall high average annual returns across the longer investment period. From 1988 to 2017, these suburbs have recorded some of the highest capital investment returns, with all suburbs recording average annual capital returns over 30 years in excess of 9%. Despite the relatively higher levels of risk, the higher returns for these suburbs off set the volatility to show similar risk return ratios compared to outer Brisbane suburbs with lower returns and less risk.

Table 9: Capital Return and Investment Performance: Average Price 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk return Ratio
East Brisbane	6.80	10.72	17.75	1.66
Highgate Hill	-10.25	9.22	16.81	1.82
Kangaroo Point	30.19	13.19	38.85	2.94
New Farm	2.37	12.11	14.71	1.21
Teneriffe	47.49	15.79	31.37	1.99
Woolloongabba	2.82	9.56	12.63	1.32

Based on average house prices for these suburbs, the investment performance over the period 1988-2017 has been more significant compared to the same returns based on median house prices. Table 9 shows that four of these inner-city suburbs have shown a long term average annual capital return in excess of 10% per annum, with Teneriffe houses returning an annual return of 15.79% per year for the last 30 years.

7 Individual Suburb Performance:
Northern Suburbs

Table 10:Northern Brisbane Suburbs: Median Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Albion	8.43	9.93	19.81	1.99
Ascot	17.46	9.36	15.58	1.66
Chermside West	6.27	6.26	11.14	1.78
Clayfield	11.50	8.64	12.17	1.41
Gordon Park	7.19	9.00	10.49	1.17
Hamilton	5.01	10.73	21.86	2.04
Mitchelton	4.58	8.23	9.58	1.16
Northgate	3.70	8.89	11.81	1.33
Nudgee beach	10.55	15.97	41.52	2.60
Pinkenba	-8.29	9.96	26.00	2.64
Stafford	4.79	8.10	9.91	1.21
Virginia	12.18	8.54	10.95	1.28
Wooloowin	7.64	9.10	14.45	1.59
Greater Brisbane	6.19	7.20	7.89	1.10

Tables 10 and 11 show the capital returns and investment performance for a range of suburbs located in areas north of the Brisbane CBD.

In 2017 the capital growth across these 13 northern Brisbane suburbs has been very varied ranging from a low of -8.29% for Pinkenba to a high of 17.46% for Ascot. Returns for the lower value suburbs located further from the Brisbane CBD tended to be below 5% in 2017 based on median house prices, with suburbs closer to the CBD generally recording higher returns in 2017.

Although these suburbs are subject to varying levels of aircraft noise due to their locations under, adjoining or away from flight paths, the long term investment performance based on capital returns is very similar, especially when distance from the CBD and socio-economic status of the suburbs are compared. The

average annual capital return for Nudgee Beach at 15.97%, is one of the highest long term returns across the 54 suburbs analysed but this is more to do with the small number of sales transactions per year and the varied range of house types in the area and is reflected in the very high volatility of over 40%. This indicates that the change in price from year to year can be very significant with years where the median house price increases or falls significantly. The small number of houses in the suburb of Pinkenba, with the subsequent low sales volume per year, results in a similar high average annual capital return and high volatility compared to other lower value suburbs analysed such as Chermside West, Mansfield and Mt Gravatt East. This is more pronounced when the investment performance is based on average house prices in Pinkenba.

Table 11: Northern Brisbane Suburbs: Average Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Albion	3.58	9.72	17.80	1.83
Ascot	16.85	8.84	12.31	1.39
Chermside West	7.55	6.33	10.50	1.66
Clayfield	11.02	8.31	12.67	1.52
Gordon Park	9.31	8.99	9.49	1.05
Hamilton	5.58	9.43	17.70	1.88
Mitchelton	6.33	8.58	11.05	1.29
Northgate	1.62	9.04	11.93	1.02
Nudgee beach	15.38	15.69	35.77	2.28
Pinkenba	17.11	15.67	46.35	2.96
Stafford	6.95	8.35	11.06	1.33
Virginia	4.80	8.48	10.51	1.24
Wooloowin	6.81	7.55	11.94	1.51

Northgate, Albion and Virginia were the only northern suburbs in the study that had significantly lower returns in 2017 when average house prices are compared to median house prices in 2017. Based on average house price changes from 2016 to 2017, the highest returns were recorded in Nudgee Beach and Pinkenba (15.38% and 17.11% respectively). These differences between the median and average house price returns in these two small suburbs are again due to the small number of sales and several high value sales in 2017 reflected in the results.

Overall across these suburbs, location to the CBD appears to be the major driver of house prices and returns. Over the period 1988 to 2017 the average annual capital returns, based on average house prices, across the majority of these suburbs (excluding Pinkenba and Nudgee Beach) has been within a relatively small range from 6.33% (Chermside West) and 9.72% (Albion).

8 Individual Suburb Performance:
Southern Suburbs

Table 12 shows the 10 suburbs classified as southern Brisbane suburbs in the study. All these suburbs are currently located under or adjacent to the current Brisbane Airport runway and southern flight paths.

Table 12: Southern Brisbane Suburbs: Median Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Annerley	2.27	8.17	9.91	1.21
Dutton Park	-7.85	8.96	12.12	1.35
Fairfield	2.95	8.54	10.94	1.28
Forest Lake	0.00	4.56	12.97	2.84
Holland Park West	0.72	8.02	10.01	1.25
Mansfield	7.37	7.28	9.49	1.30
Moorooka	6.72	8.03	9.26	1.15
Mt Gravatt East	11.99	8.03	9.20	1.15
Rocklea	4.30	8.30	13.88	1.67
Tarragindi	7.60	8.56	9.84	1.15
Greater Brisbane	6.19	7.20	7.89	1.10

The 2017 capital return for these suburbs based on median house price changes from 2016 were varied, with the suburbs closer to the Brisbane CBD actually performing at much lower rates compared to southern suburbs located further from the Brisbane CBD. Dutton Park recorded a negative return in 2017 of -7.85%, based on a relatively small sales volume. In contrast the more affordable suburb of Mt Gravatt East recorded a capital return of 11.99% in 2017.

As was the case with the Northern Suburbs analysis, suburbs tended to have a greater capital return for 2017 based on average house prices.

When the investment performance of these suburbs is analysed across the period 1988 to 2017, the capital returns (both median house price and average house price) are very consistent and well above the overall Brisbane median house price return of 7.20% for the 30-year period.

When the outer suburbs of Mansfield and Forest Lake are excluded from this suburb grouping, the 30-year capital returns range from 8.02% (Holland Park West), 8.03% (Moorooka and Mt Gravatt East) to 8.96% (Dutton Park).

Table 13: Southern Brisbane Suburbs: Average Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Annerley	1.47	8.48	12.32	1.45
Dutton Park	-2.64	9.88	22.04	2.23
Fairfield	13.19	8.65	13.59	1.57
Forest Lake	0.22	4.61	12.40	2.69
Holland Park West	-0.77	7.95	9.97	1.25
Mansfield	6.81	7.55	11.44	1.52
Moorooka	6.59	8.08	10.65	1.32
Mt Gravatt East	9.53	7.89	9.89	1.25
Rocklea	0.76	9.03	18.35	2.03
Tarragindi	2.92	8.56	10.10	1.18

During 2017, the middle and upper middle suburbs in the southern suburbs of Brisbane had lower capital returns based on average house prices compared to the lower middle suburbs further south of the Brisbane CBD, with Dutton Park and Holland Park West having a negative return in 2017 and Tarragindi and Annerley having very low capital returns in 2017 2.92% and 1.47% respectively.

9 Individual Suburb Performance:
Eastern Suburbs

The eastern suburbs of Brisbane analysed comprise a range in socio-economic status from high value suburbs such as Bulimba, Hawthorne and Balmoral, through to some lower value suburbs including Murarrie and Tingalpa. Table 14 shows that the 2017 capital returns based on median house ranged from a negative -1.56 for Balmoral to a high of 23.07% for Seven Hills. The significant increase in capital returns for Seven Hills, compared to the long-term average and 2016, was due to 38% of 2017 house sales being greater than $1 million.

The lower value suburbs located further from the Brisbane CBD tended to have higher capital returns in 2017 compared to other suburbs that were also south of Brisbane but closer to the CBD (Hawthorne 0.00%; Norman Park 0.35% and Coorparoo 1.53%), a similar result to the southern suburbs in the study.

Based on the full 30-year analysis the trends based on location to the CBD and socio-economic status of the suburbs is providing similar results to the other suburb locations. The suburbs considered to be higher value and closer to the Brisbane CBD are showing long term capital growth in the range from 9.6% (Balmoral) to 12.14% (Bulimba). The middle to high middle socio-economic suburbs have long term average annual capital gains from the low 8% through to low 9%, with the lower value suburbs ranging from 7 to 8%. The only suburb in this grouping to be below the Brisbane median house price average is Belmont at 7.15%.

Table 14: Eastern Brisbane Suburbs: Median Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Balmoral	-1.56	9.59	12.51	1.31
Belmont	8.45	7.15	10.40	1.45
Bulimba	12.17	12.14	19.89	1.64
Camp Hill	9.65	9.56	13.16	1.39
Cannon Hill	8.13	9.33	11.13	1.19
Carindale	4.24	6.83	11.60	1.70
Coorparoo	1.53	9.09	12.74	1.40
Hawthorne	0.00	10.44	10.53	1.01
Morningside	8.05	9.41	10.35	1.10
Murarrie	7.08	8.75	11.45	1.31

Suburb				
Norman Park	0.35	9.06	10.08	1.11
Seven Hills	23.07	9.59	13.11	1.37
Tingalpa	4.13	7.23	11.16	1.52
Wynnum	7.56	8.49	11.38	1.19
Greater Brisbane	6.19	7.20	7.89	1.10

When the analysis of the eastern suburbs is carried out on the basis of average house prices, most suburbs recorded an increase in both the 2017 return and the 30 year period returns. Hawthorn showed a 2017 return of 0.00% based on median house prices but a positive return of 20.08% based on average house prices.

Table 15: Eastern Brisbane Suburbs: Average Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Balmoral	-2.85	9.83	11.74	1.19
Belmont	9.49	7.48	13.11	1.75
Bulimba	7.73	11.44	18.44	1.61
Camp Hill	2.06	9.36	12.48	1.33
Cannon Hill	27.64	10.06	12.56	1.25
Carindale	5.24	7.09	11.88	1.67
Coorparoo	7.41	9.75	13.81	1.42
Hawthorne	20.08	11.38	13.81	1.21
Morningside	8.88	9.46	10.67	1.13
Murarrie	13.91	9.35	13.74	1.45
Norman Park	-0.52	9.66	14.07	1.45
Seven Hills	22.00	9.70	12.90	1.37
Tingalpa	5.76	8.08	14.38	1.78
Wynnum	6.93	8.43	11.48	1.36

A review of the data for Hawthorne shows that in 2017 there were 15% of house sales with a price greater than $2.5 million, well above the median price in 2017 of $1.2 million. Although the majority of these suburbs are located under existing flight paths the returns based on both median and average house prices are still significantly higher to the Brisbane median house price and similar socio-economic suburbs with no or limited exposure to aircraft noise. Volatility of house price change across the eastern suburbs has been consistent across all suburbs, with the high value suburbs showing higher levels of return risk compared to lower value suburbs.

10 Individual Suburb Performance:
Western Suburbs

Like the previous suburbs east of Brisbane CBD, the suburbs located west of the Brisbane CBD comprise a range in socio-economic status from high value suburbs such as Toowong to lower value suburbs such as Jindalee and Kenmore.

Table 16: Western Brisbane Suburbs: Median Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Ashgrove	7.47	8.39	9.27	1.10
Bardon	2.13	8.41	10.73	1.28
Chapel Hill	12.97	7.98	11.52	1.44
Chelmer	-1.48	9.55	16.68	1.75
Graceville	-3.60	8.73	10.73	1.23
Jindalee	2.33	7.20	15.94	2.21
Kenmore	-0.75	6.72	9.21	1.46
Sherwood	-4.89	8.68	9.40	1.08
The Gap	5.26	7.46	10.27	1.38
Toowong	5.94	7.93	12.26	1.55
Greater Brisbane	6.19	7.20	7.89	1.10

In 2017 there were four western suburbs in the study that recorded negative growth in median house prices (Chelmer, Graceville, Kenmore and Sherwood) and two suburbs based on the average house prices (Kenmore and Sherwood).

In 2017 the highest capital return based on median house prices was Chapel Hill 12.07% and Ashgrove 7.47%. Based on average house prices the better performing suburbs in this grouping were Toowong 16.34% and Jindalee 9.35%. In 2017 there were only two suburbs in this grouping that outperformed the Brisbane median house price return of 6.19% (Chapel Hill and Ashgrove). However, based on the 30-year study period only Kenmore (6.72%) is below the average annual capital return of Brisbane, with Jindalee equivalent to the Brisbane average at 7.20%. Jindalee has one of the lower average annual capital returns in the full 54 suburb analysis but also one of the highest volatility levels (15.94%) resulting in a high risk/return ratio of 2.21, despite being a low return lower value suburb. The middle value western suburbs have recorded similar long-term capital returns (low 8% to low 9%) to similar value suburbs in the north, south and eastern groupings.

When the investment performance is carried out based on average house prices, Table 17 shows that six (Bardon, Chelmer, Graceville, Jindalee, The Gap and Toowong) of the 10 suburbs have a higher capital return 2017 compared to their performance based on median house prices. Kenmore and Jindalee have recorded the lowest long term capital returns (average price) of 6.85% and 6.14% respectively.

Again the risk levels for these suburbs are in line with the results for the other locational areas.

Table 17: Western Brisbane Suburbs: Average Price: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Ashgrove	2.55	8.27	9.74	1.18
Bardon	7.11	8.62	10.51	1.22
Chapel Hill	1.95	7.95	10.57	1.33
Chelmer	3.04	8.30	14.09	1.70
Graceville	7.76	9.03	11.13	1.21
Jindalee	9.35	6.14	8.99	1.46
Kenmore	-2.68	6.85	10.69	1.53
Sherwood	-9.07	8.02	9.40	1.17
The Gap	8.65	7.75	10.90	1.41
Toowong	16.34	9.28	21.75	2.34

11 Individual Suburb Performance:
Inner City Units

The inner-city unit market in Brisbane has been in oversupply for the past three years. Again in 2017, most inner suburbs with high unit percentages have suffered a negative return. In 2017 the only inner city suburb recording a positive capital return in 2017 was Kangaroo Point at 0.98%, well below the housing returns for the same suburb. Highgate Hill had the most significant decrease of -14.87% in 2017.

Table 18: Inner City Suburbs: Median Unit Price Analysis: 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%)1988-2017	Average Annual Volatility (%)	Risk Return Ratio
East Brisbane	-1.85	6.32	12.23	1.94
Highgate Hill	-14.87	6.01	13.10	2.18
Kangaroo Point	0.98	6.03	16.07	2.66
Teneriffe	-6.05	8.20	9.50	1.67
Woolloongabba	-7.42	8.28	26.96	3.26

Table 18 shows that over the period 1988-2017, only Teneriffe and Woolloongabba have had unit capital returns similar to the level of returns recorded by houses in the middle socio-economic and middle ring suburbs of Brisbane. In both these cases the return from units has been considerably less than the return from houses for the same high value locations. East Brisbane, Highgate Hill and Kangaroo Point have recorded capital growth on 6.32%, 6.01% and 6.03% respectively, well below the Brisbane median house price for the same period. These returns, lower than houses, have also been at very high levels of volatility, resulting in risk/return ratios significantly higher than the housing markets in the other suburbs analysed in this study.

Table 19: Median Unit Price Analysis: Sub period analysis: Predominant housing type

Suburb	Capital Return: Last 3 Years (%)	Capital Return: Last 5 Years (%)	Capital Return: Last 10 Years (%)
East Brisbane	-1.87	0.04	2.28
Highgate Hill	-4.91	-0.32	0.75
Kangaroo Point	0.64	0.10	1.92
Teneriffe	1.29	2.03	2.20
Toowong	0.75	2.76	2.10
Woolloongabba	3.01	1.88	0.72

The suburbs in Table 19 are inner city suburbs where the predominant residential property type is unit developments ranging from medium density to high rise complexes. This table shows that the older established unit locations of Woolloongabba, Teneriffe and Kangaroo Point have achieved positive capital returns for each of the sub period analysis.

The last 10-year period analysis shows that over this period the unit markets have been more consistent but also at low rates of capital return ranging from a low of 0.72% for Wooloongabba to a high of only 2.28% for East Brisbane. All these capital returns are significantly lower than houses in the same suburbs recorded over the same period.
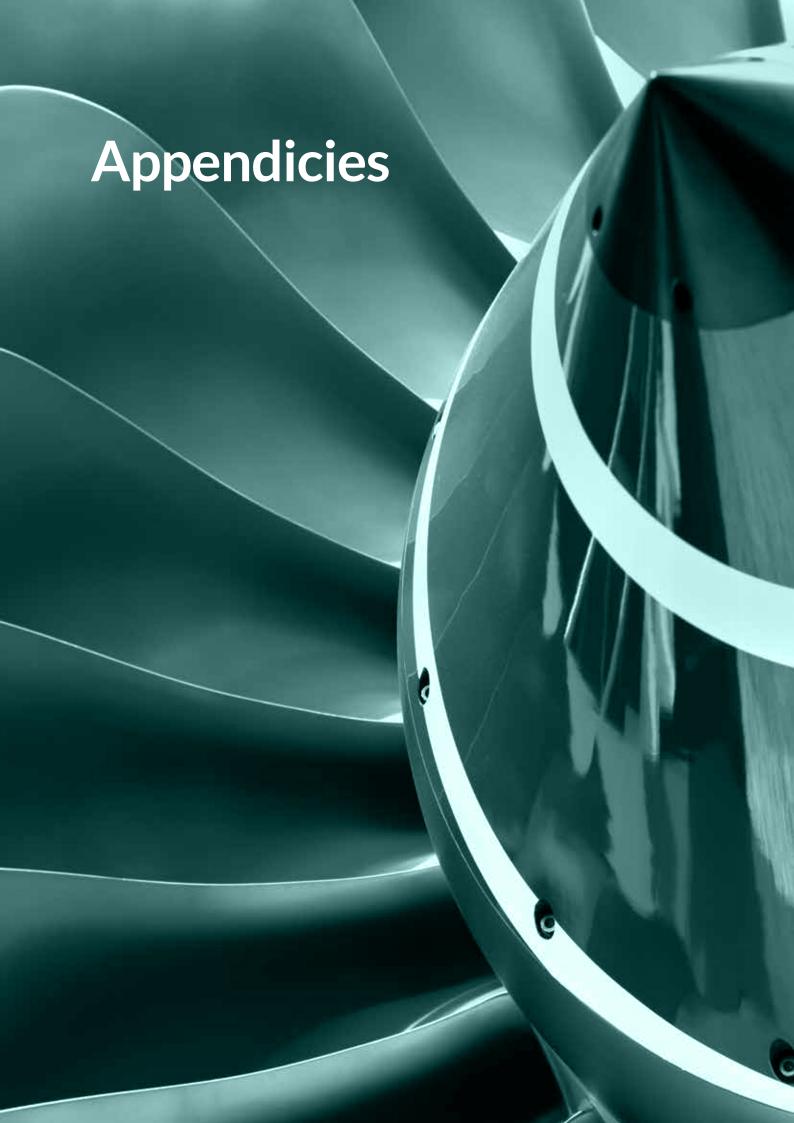
12 Summary

When the capital returns for a range of suburbs are analysed on a single year basis, there is always greater variation in the annual returns. This has again been the case with the change in price and the capital return from 2016 to 2017. The results for the 2017 year show a range in capital returns with less variation in 2017 compared to 2016.

Generally, the 2017 results and the full 1988-2017 analysis shows the highest price growth was in the MNC suburbs grouping, with Camp Hill and Mt Gravatt East (both HNC suburbs) recording the highest capital growth for all the suburbs in the study in 2017 (9.65% and 11.98% respectively). For the 30-year period the high value suburbs of Hamilton (10.73%), Bulimba (12.14%) and New Farm (12.04%) continue to record the highest average annual capital returns across the study area (disregarding the small housing sectors of Pinkenba and Nudgee Beach). These returns are well above the Brisbane average for the same period.

The most prominent value driver in 2017 appears to be location in the outer middle ring suburbs of Brisbane that are further from the CBD, with returns generally increasing as distance from Brisbane CBD increases. These suburbs are considered to be more affordable and more in current demand. This is also similar to the housing markets in the other capital cities of Australia.

Appendicies

Appendix 1: Alphabetical Suburb Listing: Median House Price Capital Returns (%): 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%) 1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Albion	8.43	9.93	19.81	1.99
Annerley	2.27	8.17	9.91	1.21
Ascot	17.46	9.36	15.58	1.66
Ashgrove	7.47	8.39	9.27	1.10
Balmoral	-1.56	9.59	12.51	1.31
Bardon	2.13	8.41	10.73	1.28
Belmont	8.45	7.15	10.4	1.45
Bulimba	12.17	12.14	19.89	1.64
Camp Hill	9.65	9.56	13.16	1.39
Cannon Hill	8.13	9.33	11.13	1.19
Carindale	4.24	6.83	11.6	1.70
Chapel Hill	12.97	7.98	11.52	1.44
Chelmer	-1.48	9.55	16.68	1.75
Chermside West	6.27	6.26	11.14	1.78
Clayfield	11.5	8.64	12.17	1.41
Coorparoo	1.53	9.09	12.74	1.40
Dutton Park	-7.85	8.96	12.12	1.35
East Brisbane	-3.93	9.47	13.99	1.48
Fairfield	2.95	8.54	10.94	1.28
Forest Lake	0.00	4.56	12.97	2.84
Gordon Park	7.19	9.00	10.49	1.17
Graceville	-3.60	8.73	10.73	1.23
Hamilton	5.01	10.73	21.86	2.04
Hawthorne	0.00	10.44	10.53	1.01
Highgate Hill	-18.84	9.17	12.85	1.40
Holland Park West	0.72	8.02	10.01	1.25
Jindalee	2.33	7.2	15.94	2.21
Kangaroo Point	34.47	11.21	24.01	2.14
Kenmore	-0.75	6.72	9.21	1.46
Mansfield	7.37	7.28	9.49	1.30
Mitchelton	4.58	8.23	9.58	1.16
Moorooka	6.72	8.03	9.26	1.15
Morninside	8.05	9.41	10.35	1.10
Mt Gravatt East	11.99	8.03	9.2	1.15
Murrarie	7.08	8.75	11.45	1.31
New Farm	-3.73	12.04	15.66	1.30
Norman Park	0.35	9.06	10.08	1.11
Northgate	3.70	8.89	11.81	1.33
Nudgee beach	10.55	15.97	41.52	2.60
Pinkenba	-8.29	9.96	26.00	2.64
Rocklea	4.30	8.3	13.88	1.67
Seven Hills	23.07	9.59	13.11	1.37
Sherwood	-4.89	8.68	9.40	1.08
Stafford	4.79	8.1	9.91	1.21
Tarragindi	7.60	8.56	9.84	1.15
Teneriffe	47.76	14.92	24.88	1.67
The Gap	5.26	7.46	10.27	1.38
Tingalpa	4.13	7.23	11.16	1.52
Toowong	5.94	7.93	12.26	1.55
Virginia	12.18	8.54	10.95	1.28
Woolloongabba	5.63	9.41	12.27	1.30
Wooloowin	7.64	9.1	14.45	1.59
Wynnum	7.56	8.49	11.38	1.19
Greater Brisbane	6.19	7.2	7.89	1.10

Appendix 2: Alphabetical Suburb Listing: Average House Price Capital Returns (%): 1988-2017

Suburb	2017 Capital Return (%)	Average Annual Capital Return (%) 1988-2017	Average Annual Volatility (%)	Risk Return Ratio
Albion	3.58	9.72	17.80	1.83
Annerley	1.47	8.48	12.32	1.45
Ascot	16.85	8.84	12.31	1.39
Ashgrove	2.55	8.27	9.74	1.18
Balmoral	-2.85	9.83	11.74	1.19
Bardon	7.11	8.62	10.51	1.22
Belmont	9.49	7.48	13.11	1.75
Bulimba	7.73	11.44	18.44	1.61
Camp Hill	2.06	9.36	12.48	1.33
Cannon Hill	27.64	10.06	12.56	1.25
Carindale	5.24	7.09	11.88	1.67
Chapel Hill	1.95	7.95	10.57	1.33
Chelmer	3.04	8.3	14.09	1.70
Chermside West	7.55	6.33	10.5	1.66
Clayfield	11.02	8.31	12.67	1.52
Coorparoo	7.41	9.75	13.81	1.42
Dutton Park	-2.64	9.88	22.04	2.23
East Brisbane	6.80	10.72	17.75	1.66
Fairfield	13.19	8.65	13.59	1.57
Forest Lake	0.22	4.61	12.4	2.69
Gordon Park	9.31	8.99	9.49	1.05
Graceville	7.76	9.03	11.13	1.21
Hamilton	5.58	9.43	17.70	1.88
Hawthorne	20.08	11.38	13.81	1.21
Highgate Hill	-10.25	9.22	16.81	1.82
Holland Park West	-0.77	7.95	9.97	1.25
Jindalee	9.35	6.14	8.99	1.46
Kangaroo Point	30.19	13.19	38.85	2.94
Kenmore	-2.68	6.85	10.69	1.53
Mansfield	6.81	7.55	11.44	1.52
Mitchelton	6.33	8.58	11.05	1.29
Moorooka	6.59	8.08	10.65	1.32
Morninside	8.88	9.46	10.67	1.13
Mt Gravatt East	9.53	7.89	9.89	1.25
Murrarie	13.91	9.35	13.74	1.45
New Farm	2.37	12.11	14.71	1.21
Norman Park	-0.52	9.66	14.07	1.45
Northgate	1.62	9.04	11.93	1.02
Nudgee beach	15.38	15.69	35.77	2.28
Pinkenba	17.11	15.67	46.35	2.96
Rocklea	0.76	9.03	18.35	2.03
Seven Hills	22.00	9.70	12.90	1.37
Sherwood	-9.07	8.02	9.40	1.17
Stafford	6.95	8.35	11.06	1.33
Tarragindi	2.92	8.56	10.10	1.18
Teneriffe	47.49	15.79	31.37	1.99
The Gap	8.65	7.75	10.90	1.41
Tingalpa	5.76	8.08	14.38	1.78
Toowong	16.34	9.28	21.75	2.34
Virginia	4.80	8.48	10.51	1.24
Woolloongabba	2.82	9.56	12.63	1.32
Wooloowin	6.81	7.55	11.94	1.51
Wynnum	6.93	8.43	11.48	1.36