

SOUND

The Inside Perspective

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The Sound Report

by Jodie Walker and Richard Rossman

Prior to buying a home, most of us would be concerned with its appearance - but how often do we think about how it sounds? This month, we investigate one of the most overlooked aspects of our built environment.



It's close to midnight when you hear the click of a door closing. Coughing in the hallway. Heavy, tired footfalls on the staircase. If you are trying to sleep, these sounds may annoy you, or they can give you comfort knowing a family member has returned home.

Different sounds have a unique effect on each of us. Waking up to chirping birds might be a delightful experience or a horribly noisy way to start the morning, depending on what you are used to. Some of us can sleep through with the TV playing in the background, yet others need complete silence to fall into a deep sleep.

Sounds can create atmosphere, affect behaviour and evoke memories. A library is expected to have no sound but is never truly silent. Voluminous spaces with high ceilings and hard floors allow sound to reverberate freely, and can create a feeling of scale and grandeur. Remember that song you loved listening to last winter? Listen to it on a summer day, and chances are you'll be transported back to those cooler, cloudier times.

Sound and space come hand in hand, so how does sound affect the spaces we live in?

In this report, Secret Agent will take a look at the relationship between architecture, sound and noise. We will determine whether external noise has an affect on property value in inner Melbourne by analysing sale prices of properties sold nearby noisy streets as well as metropolitan rail lines.

Why does sound matter?

Architecture should not only be beautiful and functional; it should also sound good. Out of all the senses, hearing is probably the most overlooked when it comes to creating spaces. Due to rapid population growth in modern cities, there is a greater need to control the increasing sources of noise and the design of spaces that contain them.

According to sound expert Julian Treasure (2009), there are four ways in which sounds can affect us:

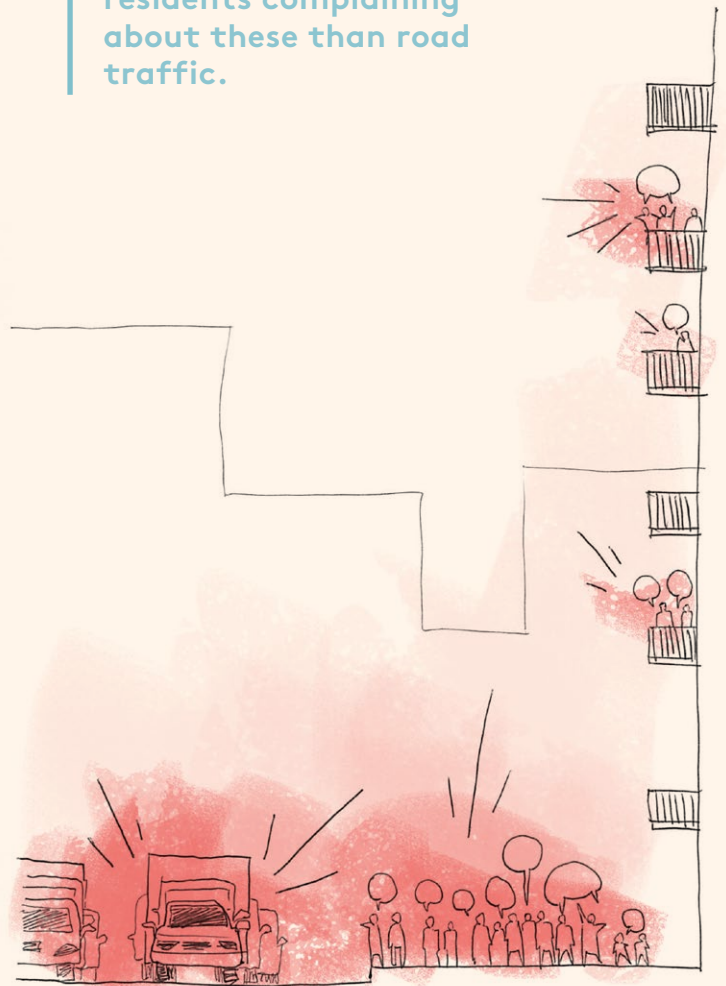
1. The first is behavioural; we tend to move away from unpleasant sounds towards ones we find pleasing.
2. Closely related to this is a physiological effect. When you are startled by a loud bang, this causes the release of cortisol into the bloodstream and increases your heart rate. If we are forced to be around unpleasant sounds for long enough, the physiological response taking place in our bodies can lead to illness and chronic health issues.
3. Sounds can affect us cognitively in the sense that we find it very difficult to listen to two people talking at once. This has implications for productivity in the workplace, especially in popular open plan offices.
4. The most powerful effect of sound is psychological, best described by the way music can move us deeply and influence our emotions.

Only a century ago, smell was the greatest challenge to overcome for town planners. Now it is unwanted sound, or what most of us would call noise. A result of urbanisation is that more of us are becoming comfortable with the idea of living closer to sources of noise, such as highways, under flight paths and amenity hotspots with high foot traffic.

Mixed use zones have become more prominent with a number of zoning changes taking place recently. A survey of residents in a single mixed use site in Surry Hills, Sydney found that although 79% of respondents expected to be impacted by some noise from the commercial premises on the site, there was a limit to their noise tolerance with 51% of the respondents stating more should have been done to block out the noise. Pedestrians were the major source of noise, with three times more residents complaining about these than road traffic. Even residents on higher levels were impacted by external noise. (Wheatley, 2014) The rise in the number of people living in apartments has created additional issues, with noise from neighbours above and below, and other building noises such as water pipes and fire alarm drills.

The challenge with having higher residential density and mixed use zoning is the noise conflict between the different users of the site. Cities will have to find a way to accommodate rapidly growing populations in the most sustainable way without compromising its residents' quality of life.

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How do we hear?

Sound is created by changes in pressure when an object vibrates. The human ear consists of three distinct parts; the outer ear, middle ear and inner ear. The outer ear is responsible for directing sound, which travels through the air in waves, to the ear drum. When the sound waves hit the ear drum, it vibrates, causing three small bones attached to the ear drum to also vibrate. One of these bones triggers movement of the membrane in the cochlea. The cochlea is the main organ involved in hearing and is filled with fluid and lined with tiny hairs. Vibration of the membrane makes the fluid move, in turn making the hairs move. This movement is converted into electrical signals at the hearing nerve and these travel to the brain, where we interpret them as sound. (ESIA, 2016)

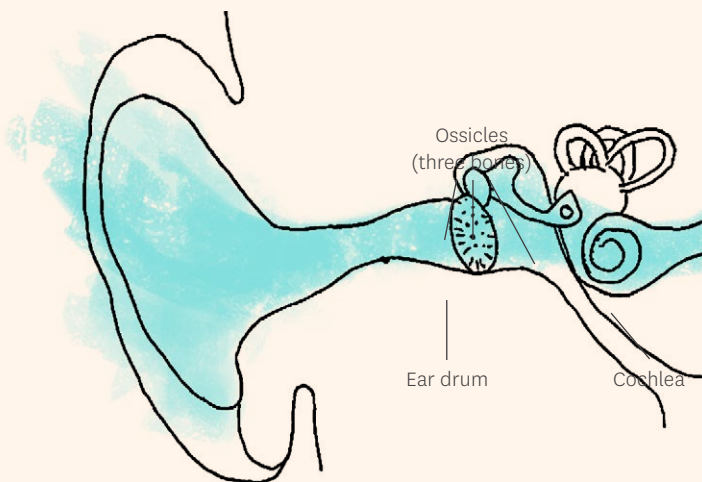


Fig. 1 Diagram of the human ear.

Generally, only sounds at a frequency of 20-20,000 Hertz (waves per second) can be sensed by the human ear, and sounds below 250 Hertz are barely audible. Dogs and cats generally have a heightened sense of hearing compared to humans. Not only can they hear sounds of higher frequencies, they can also hear more accurately than us. This means that any sounds that might affect your comfort at home will impact them to an even greater extent.

Negative noise

It is not just loud noise that can cause irreversible hearing loss. A study investigating the effect of lower frequency sounds (deep sounds) found that this is not innocuous. Low frequency sound waves can alter the mechanisms of the inner ear, potentially making it more prone to damage for a temporary period after exposure. (Williams, 2014) This includes sounds that we think we have become accustomed to because we don't notice them anymore, such as the humming of traffic.

More evidence is emerging that noise exposure can be detrimental to our health in indirect ways. The World Health Organisation has published a number of documents about noise and its connection to a variety of medical conditions.

Statistical relationships between external noise sources such as railways and road traffic with cardiovascular disease, cognitive impairment, sleep disturbance and tinnitus have been established.
(WHO, 2011)

From an evolutionary perspective, our hearing developed so that we could recognise a threat from a distance, before our eyes have a chance to focus on it, giving us more time to escape. "Our sense of hearing is a warning organ, which in contrast to the eyes, cannot be closed." (Maschke et al, 2000) Noise is recognised as a stressor by the body and can result in the release of stress hormones. Chronically raised levels of these hormones results can result in pathological processes in the body which lead to chronic disease. "In the long run, chronic noise stress may affect the homeostasis of the organism due to dysregulation, incomplete adaptation, and/or the physiological costs of the adaptation. Noise is considered a nonspecific stressor that may cause adverse health effects in the long run." (WHO, 2011)

Sound vs noise in the home

The increasing awareness of environmental sustainability has seen architects make a concerted effort to incorporate more sustainable design features across the world. The next step forward will be to consider how each building element sounds in its final form, as they not only affect how we feel indoors, but also our long term health. "For every faculty of perception there is, according to the degree of irritation, a biochemical or psychobiological activation." (Maschke et al, 2000)

Both external noises and internal sounds should be given equal attention. Consider:

- How does the front door sound when it closes - does it latch gently, or slam and reverberate throughout the house?
- How does the lounge room sound with the windows open, as opposed to being closed? The sounds of nature can connect you with the environment outside and make the space feel larger than it actually is.
- What is the roof made of and how does it sound when heavy rain sets in? Rainfall on corrugated iron or metal sheets can be especially loud, creating less favourable sleeping conditions.

There are numerous other sources of internal sound within the home, including the constant humming of appliances, drainage noises, extractor fans and floor impact sounds. Our reactions to these are dictated by personal preferences and also how sensitive we are to particular sounds. In fact, an individual's sensitivity is more important in determining their annoyance of internal noises than external ones. (Ryu and Jeon, 2011)

The effects of internal sounds on property value are almost impossible to determine. These sounds contribute to the

overall character of the building which is likely to influence the price someone is willing to pay, however the nature of this is very subjective. Further, internal sounds are often not revealed to their true extent until you have lived in the building, whether it be a house or an apartment, for a number of days.

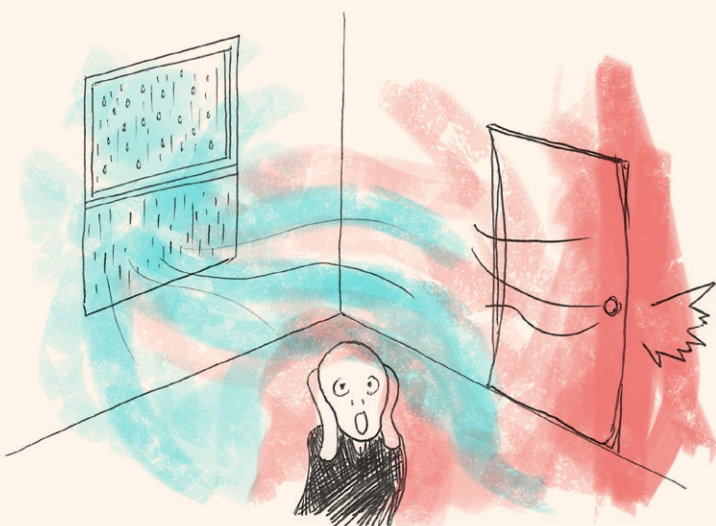
External noise, on the other hand, can be measured using mixed method approaches. There have been a number of studies looking at the effects of nearby noise sources such as airports, main roads and railways on property value. Mostly there seems to be a negative trend.

An American study looking at the effect of railway noise on property value in Memphis found that properties located within the contour where the train noise was 65 decibels or louder were approximately 14% lower in value. (Walker, 2016) A meta-analysis looking at an agglomeration of studies in the USA, Canada and Europe concluded that there is a 0.6% to more than 1.0% decrease in property value for every one decibel increase in noise level due to aircraft noise. (Lazic and Golaszewski, 2006)

A recent study in Brisbane found conflicting results to this. There was no effect found when looking at the impact of aircraft noise on residential property. 36 suburbs were categorised based on the number of noise complaints due to aeroplanes flying overhead. It was found that those suburbs subject to the highest noise levels (indicated by the highest number of complaints) had an average annual capital return of 8.66% in 26 years. This was higher than the capital return for suburbs that were not affected by aircraft noise and also higher than the overall Brisbane residential property return of 7.72%. (Eves and Blake, 2013)

Another study of inner Brisbane suburbs found that noise from cars and motorbikes are the most frequently heard noises from inner city residents. Yet it is the noises from other residents (either in the building or in neighbouring complexes) which is considered to be more annoying than traffic noise. (Kennedy and Buys, 2010) For many, impulsive and variable noises are more annoying than constant background noise.

Secret Agent decided to confirm how external noise may influence property prices in the inner Melbourne market by carrying out two separate investigations.



Noise Study 1: Near busy roads

For the first investigation the effect of a noisy road on property value was determined. A noisy road was defined as any street with two or more lanes, or a road with tram tracks on it. Houses located in the inner North (as indicated in Figure 1) and sold between January 2011 and December 2015 were the focus of the analysis. This was to ensure the house style and street layout (whether it has a median strip, canopy etc.) were as similar as possible to limit confounding.

After dividing the sample of housing sales into properties on noisy streets and properties on quiet streets it seems that the average sale price and average size of each group are very similar. (Table 1) However this simple comparison does not factor in the different variables that affect sale price. These include the suburb, whether the property is a house or a townhouse, the number of bedrooms and bathrooms and the total land area. To account for these factors hedonic regression modelling was used. The results of this show that there is in fact a difference between the two groups.

On average, the price of an otherwise identical property is \$71,500 lower if it is located on a noisy street. That is just over 7% of the average house price in the analysis.

A statistical test of significance reveals that we can be 99% confident that this is not due to chance.

	Quiet Streets (3,676 properties)	Noisy Streets (465 properties)
Avg Price	\$1,008,721	\$1,012,343
Avg Land Size	266sqm	270sqm

Table 1: Comparing the difference in average price of properties along quiet and noisy streets.

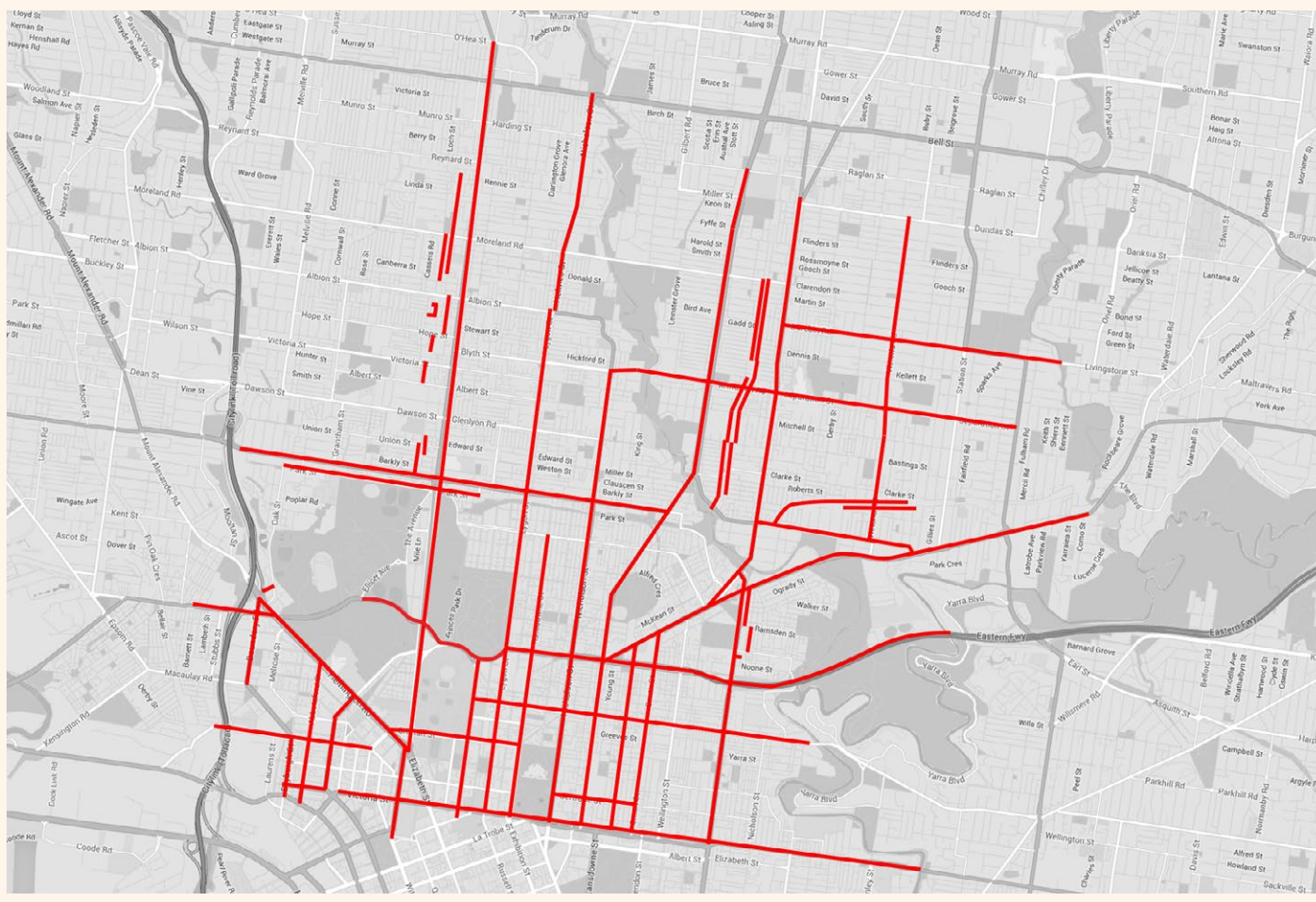


Figure 1: Map of noisy streets (red) in the inner North used in the study.

Noise Study 2: Near train lines

For the next investigation, the effect that noise level has on property value in inner Melbourne was evaluated. To do this we decided to compare the sale prices of houses located directly on a rail line with those that were one street back (where they are likely to still hear the trains but not as loudly).

Streets that run along metropolitan train lines in Melbourne's inner suburbs were selected. Houses were separated into two categories; the rail properties, which were fully exposed to train lines, and non-rail properties, which are in the row behind the rail properties. (Figure 2).

Hedonic regression techniques were again used to analyse the results whilst taking into account other confounding factors on the price. Non-rail properties sold for an average of \$45,821 more than rail properties. This is 4.48% of the average sale price. This result did not pass a statistical significance test, meaning that the actual difference between the two groups could be bigger or smaller than indicated.

Comparing the numbers in the table 2 it is evident that the non-rail properties were smaller on average (in terms of land size and number of bedrooms/bathrooms) and included a higher percentage of townhouses (29% compared to 18%). Townhouses usually have a lower average sale price than houses.

Despite all these factors, non-rail properties still sold for approximately 5.7% more than rail properties.

This makes it very likely that buyers find properties directly exposed to train noise less desirable than properties one lot further away.

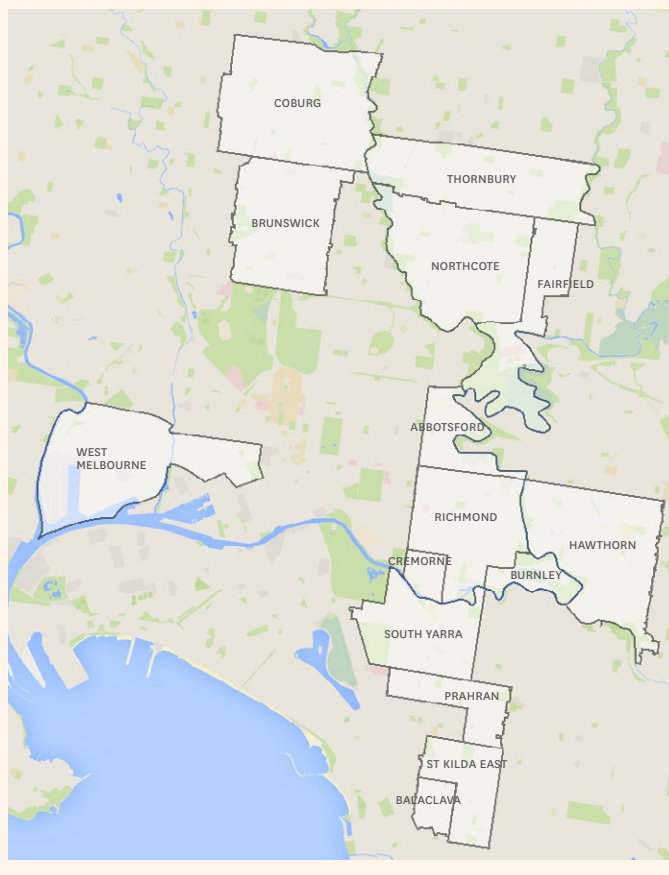


Figure 2: Suburbs containing train lines selected for this study.

	Rail (109 properties)	Non-Rail (188 properties)	Difference
Avg Price	\$984,845	\$1,044,817	+5.74%
Avg Land Size	290sqm	265sqm	-9.38%
Avg no. of Bedrooms	2.96	2.80	-5.71%
Avg no. of Bathrooms	1.53	1.39	-9.94%
% Houses (vs Townhouses)	82%	71%	-15.42%

Table 2: Comparing the difference in average price of rail and non-rail properties.

Conclusion

An increasing number of people are choosing to live in mixed used precincts across the world. This has resulted in noise becoming a problem in these inner urban areas. Being close to the heart of the action is an attractive selling point of many inner city properties. The results in this report show that there is a limit to how close you should get if you are considering buying in inner Melbourne.

Houses located on noisy streets are worth 7% less than the average house price in the area. Similarly, properties located a street away from a rail line sell for approximately \$46,000 more than those directly opposite.

External noises should not be the only consideration. Internal sounds can have a big impact on how you feel at home and may be even more important to your happiness if you are particularly sensitive to sound.

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Market Review

by Paul Osborne and Richard Rossmann

The dawn of Autumn brings a fresh round of listings to the residential market, as vendors who have been waiting patiently for the holiday season to conclude begin to put their property up for sale. Listings in February are up by 50% for houses, 9% for townhouses and 14% for apartments compared to last month, albeit coming from the lowest turnover month of the year.

Increased supply equates to more choice for buyers. While bidding at auctions was strong and nominal prices were higher than last year, many properties in the inner suburbs have seen a decrease in real values since February 2015.

Average house prices in the inner suburbs were down 2% over the rolling quarter. After adjusting for inflation, the worst performer was the inner North, with median prices consistently falling each month since October 2015. Brunswick, Brunswick East and North Melbourne are all on Secret Agent's bust list for three or more rolling quarters. At the other end of the market, real prices in the inner South are on par with the highest point reached in 2015. With only small sale volumes, this statistic might be exaggerated, but it is supported by the underlying trend of rising house prices in this region. South Melbourne and Port Melbourne are the best performers, each experiencing four and three consecutive rolling quarters of price growth, respectively.

Townhouses saw the biggest drop in price of all property types, down 4.5% over the past three months. This is great news for buyers, who were able to obtain more value for their money. The median price per square metre was down 16.5% to \$6,300. Despite being well above the median price per square meter for houses, which currently sits at approximately \$5,000 per square metre, this is well below the usual premium charged for the convenience townhouses offer to homeowners.

Apartments are the only market that saw a price increase this quarter compared to last, by nearly 2%. With mortgage rates still at an all-time low, many potential buyers are able to enter the market at the bottom end. Fitzroy is again on our apartment boom list, with Collingwood also joining as a high growth suburb in recent months. On the other hand, CBD apartments continue to fall in value, down 11% in real terms since this time last year. This trend is likely to continue

as the year progresses and more supply is released to the market. The Melbourne CBD and Southbank areas have both experienced three rolling quarters of price decline.

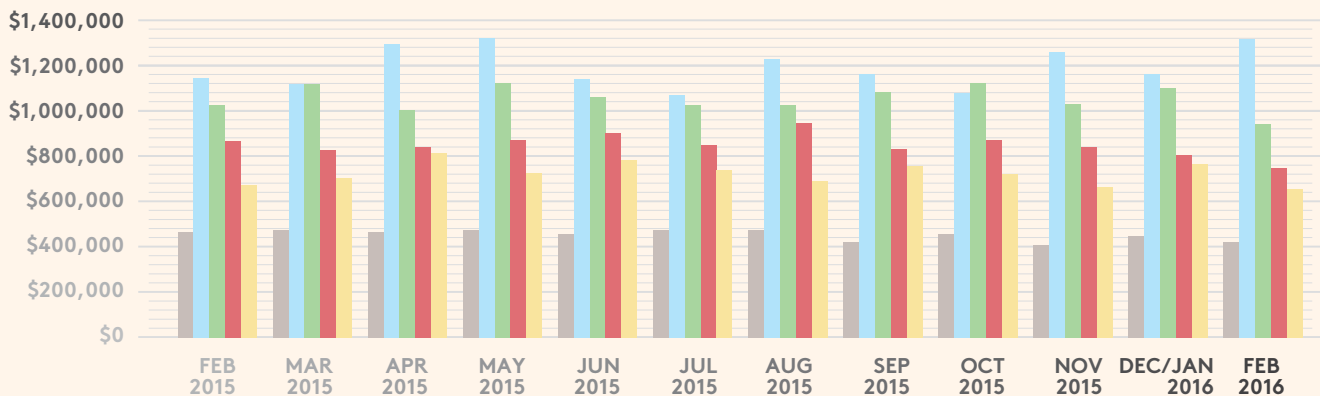
Secret Agent notes that precedents are still being broken at the higher quality end of the market. Our data does not accurately represent this part of the market and it needs to be considered from an observational perspective. Quality has been in short supply in the early parts of 2016. As a result, quality offerings are snapped up quickly once discovered by the general public.

The next few months will help set the tone for the rest of the year. The property market is highly topical at the moment with the expectation of a slow down in the economy. This could bring the debate of a potential bubble burst back into the public arena. However, the latest GDP figures show an economy that is still proving to be resilient. Over the coming months, Secret Agent intends to delve deeper into the economy and look at current expectations for the short to medium term.

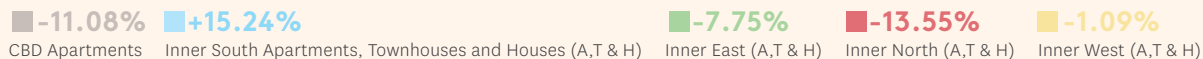
	Apartments	Houses	Townhouses
QUARTERLY GROWTH/DECLINE	+1.92% ↑	-2.02% ↓	-4.47% ↓
MEDIAN PRICE	\$530,000	\$1,185,500	\$850,000
AVERAGE PRICE	\$574,552	\$1,378,049	\$967,802
MEDIAN SQM	-	\$5,077 +0.70% ↑	\$6,296 -16.50% ↓
STOCK INVENTORY	3251 +14.04% ↑	379 +50.40% ↑	117 +9.35% ↑
	BOOM ☀️		
	Collingwood ↑ Fitzroy ↑	Port Melbourne ↑ Princes Hill ↑ South Melbourne ↑	-
	BUST ☁️		
	Brunswick East ↓ Hawthorn ↓ Kensington ↓ Melbourne ↓ North Melbourne ↓ Prahran ↓ South Yarra ↓ Southbank ↓	Abbotsford ↓ Brunswick ↓ Brunswick East ↓ Carlton ↓ Hawthorn ↓ Middle Park ↓ North Melbourne ↓ South Yarra ↓	-

YEAR ON YEAR LOOK

Median Prices



FEB 2015 - FEB 2016 GROWTH/DECLINE



NOTES

- Compared to February last year, only properties in the inner South saw an increase in real median prices, which at \$1.32 million are at their highest level since May last year.
- The other regions saw declines in real prices and with house listings up over 50% since last month, this momentum is unlikely to shift over the next few months, while buyers will have a lot of choice at their disposal.
- Melbourne and Southbank have both experienced 3 rolling quarters of price declines. Apartments in Fitzroy and Collingwood are performing well above the rest of the market.

LEGEND

- Inner Melbourne is defined by suburbs falling into the 8km radius of the CBD.
- Overall growth/decline is based on changes in median price between quarters.
- A boom! is recorded when a category records three consecutive quarters of positive growth.
- A bust! is recorded when a category records two consecutive quarters of negative growth.

Quarterly Turnover

DEC 2015 - FEB 2016

		PREVIOUS QUARTER (SEP, OCT, NOV 2015)				CURRENT QUARTER (DEC, JAN, FEB 2016)			
		Apartments	Apartments (by area)	Houses & Townhouses	Houses & Townhouses (by area)	Apartments	Apartments (by area)	Houses & Townhouses	Houses & Townhouses (by area)
Central	Docklands	3.53%		0.00%		2.31%		0.00%	
	Melbourne	1.41%	1.74%	0.00%	0.00%	1.03%	1.21%	0.00%	0.00%
	Southbank	1.75%		0.00%		1.11%		0.00%	
Inner North	Brunswick	1.67%		1.35%		0.98%		0.49%	
	Brunswick East	1.98%		1.40%		0.95%		0.76%	
	Carlton	0.82%		1.06%		0.80%		0.91%	
	Carlton North	1.33%		1.39%		0.38%		0.72%	
	Clifton Hill	0.60%		0.82%		0.80%		0.60%	
	Collingwood	1.68%	1.22%	1.02%	1.19%	1.15%	0.82%	0.38%	0.60%
	Fitzroy	1.09%		1.40%		0.78%		0.45%	
	Fitzroy North	1.24%		0.87%		0.91%		0.42%	
	North Melbourne	1.10%		1.20%		0.77%		0.83%	
	Northcote	1.29%		1.27%		0.57%		0.68%	
	Parkville	1.29%		0.86%		0.82%		0.72%	
Princes Hill	0.41%		0.65%		0.41%		0.16%		
Inner East	Abbotsford	1.73%		1.83%		1.04%		0.80%	
	Burnley	0.00%		0.49%		0.68%		0.00%	
	Cremorne	0.00%		0.59%		0.55%		0.98%	
	East Melbourne	1.50%	1.67%	0.89%	1.80%	0.63%	1.03%	1.25%	0.85%
	Hawthorn	1.38%		1.73%		0.80%		0.70%	
	Prahran	2.08%		2.06%		1.15%		1.17%	
	Richmond	1.42%		1.82%		1.30%		0.93%	
	South Yarra	1.99%		2.15%		1.07%		0.58%	
Inner South	Albert Park	1.18%		1.28%		0.39%		0.27%	
	Middle Park	0.84%	1.22%	1.11%	1.30%	1.46%	1.00%	0.77%	0.62%
	Port Melbourne	1.47%		1.53%		1.07%		0.87%	
	South Melbourne	0.94%		1.09%		0.94%		0.69%	
Inner West	Flemington	0.95%		1.29%		0.48%		0.86%	
	Kensington	2.15%	1.29%	1.33%	1.35%	0.95%	0.84%	0.68%	0.73%
	Travancore	0.83%		0.74%		2.29%		0.74%	
	West Melbourne	0.94%		2.00%		0.59%		0.60%	

Total sales for the period against total housing supply. Table compiled from data collected from September 2015 to February 2016.
Total private dwellings information from the 2011 Census Report from the Australian Bureau of Statistics.

Apartments

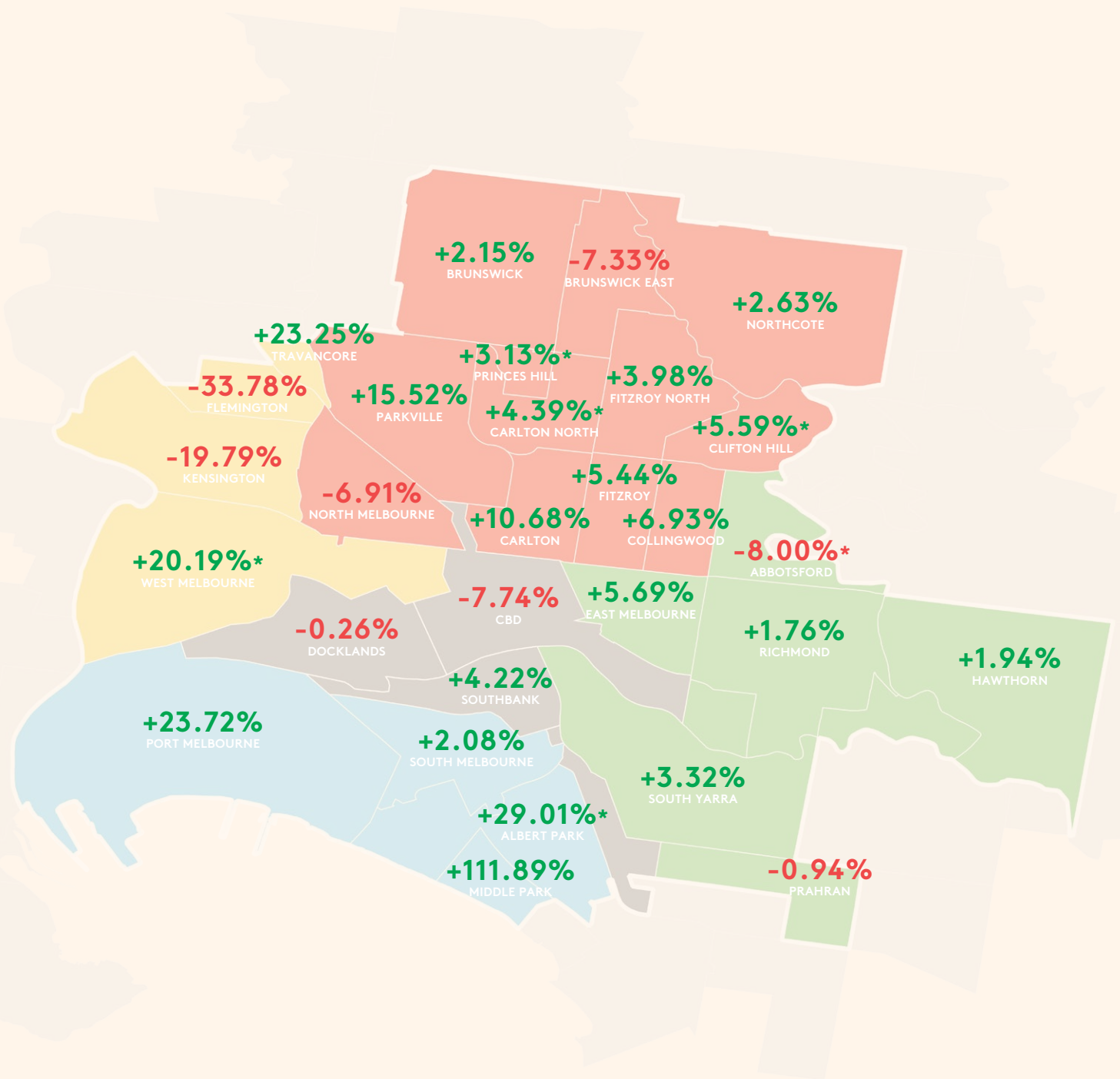
PRICE COMPARISONS BY ROLLING QUARTERS

	PREVIOUS QUARTER (SEP, OCT, NOV 2015)				CURRENT QUARTER (DEC, JAN, FEB 2016)					
	Average Price	Median Price	Lowest Sale	Highest Sale	Average Price	% change	Median Price	% change	Lowest Sale	Highest Sale
Docklands	\$661,575	\$581,500	\$360,000	\$1,750,000	\$672,353	↑ 1.63%	\$580,000	↓ -0.26%	\$135,000	\$1,850,000
Melbourne	\$555,667	\$491,000	\$180,000	\$3,900,000	\$503,985	↓ -9.30%	\$453,000	↓ -7.74%	\$170,000	\$1,200,000
Southbank	\$648,814	\$556,500	\$295,000	\$2,050,000	\$631,345	↓ -2.69%	\$580,000	↑ 4.22%	\$294,000	\$1,330,000
Brunswick	\$469,807	\$465,000	\$136,000	\$835,000	\$497,543	↑ 5.90%	\$475,000	↑ 2.15%	\$216,000	\$892,000
Brunswick East	\$480,767	\$477,500	\$270,000	\$665,000	\$456,500	↓ -5.05%	\$442,500	↓ -7.33%	\$280,000	\$610,000
Carlton	\$350,660	\$257,500	\$122,000	\$745,000	\$406,206	↑ 15.84%	\$285,000	↑ 10.68%	\$201,000	\$1,250,000
Carlton North	\$560,500	\$570,000	\$406,500	\$667,500	*\$595,000	↑ 6.16%	*\$595,000	↑ 4.39%	\$530,000	\$660,000
Clifton Hill	*\$450,500	*\$429,000	\$365,000	\$557,500	*\$511,500	↑ 13.54%	*\$453,000	↑ 5.59%	\$320,000	\$820,000
Collingwood	\$650,083	\$577,500	\$137,500	\$2,180,000	\$748,750	↑ 15.18%	\$617,500	↑ 6.93%	\$363,000	\$1,575,000
Fitzroy	\$611,895	\$625,000	\$287,500	\$999,000	\$732,462	↑ 19.70%	\$659,000	↑ 5.44%	\$295,000	\$2,000,000
Fitzroy North	\$564,607	\$515,000	\$207,000	\$1,000,000	\$564,409	↓ -0.04%	\$535,500	↑ 3.98%	\$326,000	\$1,200,000
North Melbourne	\$592,154	\$521,000	\$150,000	\$1,420,000	\$499,500	↓ -15.65%	\$485,000	↓ -6.91%	\$265,000	\$741,500
Northcote	\$489,045	\$457,000	\$312,000	\$840,000	\$477,618	↓ -2.34%	\$469,000	↑ 2.63%	\$350,560	\$560,000
Parkville	\$605,650	\$557,500	\$408,000	\$912,500	\$631,250	↑ 4.23%	\$644,000	↑ 15.52%	\$477,500	\$760,000
Princes Hill	*\$640,000	*\$640,000	\$640,000	\$640,000	*\$660,000	↑ 3.13%	*\$660,000	↑ 3.13%	\$660,000	\$660,000
Abbotsford	\$673,611	\$600,000	\$407,500	\$1,205,000	*\$544,000	↓ -19.24%	*\$552,000	↓ -8.00%	\$420,000	\$660,000
Burnley	-	-	-	-	*\$470,000		*\$470,000		\$470,000	\$470,000
Cremorne	-	-	-	-	*\$510,000		*\$510,000		\$510,000	\$510,000
East Melbourne	\$831,071	\$686,000	\$269,500	\$2,365,000	\$663,375	↓ -20.18%	\$725,000	↑ 5.69%	\$382,000	\$795,000
Hawthorn	\$590,942	\$515,000	\$110,000	\$1,480,000	\$540,724	↓ -8.50%	\$525,000	↑ 1.94%	\$118,000	\$1,150,000
Prahran	\$516,565	\$530,000	\$130,500	\$1,000,000	\$476,681	↓ -7.72%	\$525,000	↓ -0.94%	\$220,000	\$790,000
Richmond	\$540,209	\$511,000	\$280,000	\$1,210,000	\$544,043	↑ 0.71%	\$520,000	↑ 1.76%	\$310,000	\$900,000
South Yarra	\$698,467	\$527,500	\$275,000	\$3,675,000	\$580,768	↓ -16.85%	\$545,000	↑ 3.32%	\$210,000	\$1,900,000
Albert Park	\$709,964	\$731,750	\$395,000	\$1,009,286	*\$944,000	↑ 32.96%	*\$944,000	↑ 29.01%	\$944,000	\$944,000
Middle Park	*\$483,333	*\$410,000	\$400,000	\$640,000	\$825,083	↑ 70.71%	\$868,750	↑ 111.89%	\$706,000	\$880,000
Port Melbourne	\$725,738	\$632,500	\$225,000	\$2,110,000	\$1,007,400	↑ 38.81%	\$782,500	↑ 23.72%	\$420,000	\$4,050,000
South Melbourne	\$605,194	\$600,000	\$296,000	\$1,260,000	\$614,688	↑ 1.57%	\$612,500	↑ 2.08%	\$385,000	\$750,000
Flemington	\$420,781	\$413,750	\$168,000	\$790,000	\$326,100	↓ -22.50%	\$274,000	↓ -33.78%	\$163,000	\$501,000
Kensington	\$489,778	\$485,000	\$274,000	\$928,000	\$412,636	↓ -15.75%	\$389,000	↓ -19.79%	\$332,500	\$636,500
Travancore	*\$303,250	*\$300,000	\$263,000	\$350,000	\$388,100	↑ 27.98%	\$369,750	↑ 23.25%	\$335,000	\$566,000
West Melbourne	\$468,571	\$416,000	\$330,000	\$650,000	*\$502,400	↑ 7.22%	*\$500,000	↑ 20.19%	\$335,000	\$680,000

Table compiled from data collected from September 2015 and February 2016. A dash indicates no recorded sales for the quarter, inability to show a quarterly change or no quarterly change. Directional arrows indicate change in comparison to the previous rolling quarter. * indicates an average or median value calculated using 5 sales or less.

Apartments

QUARTERLY MEDIAN CHANGE BY SUBURB



Based on data collected from September 2015 to February 2016. Burnley and Cremorne were omitted due to insufficient data.
* indicates a median value calculated using 5 sales or less.

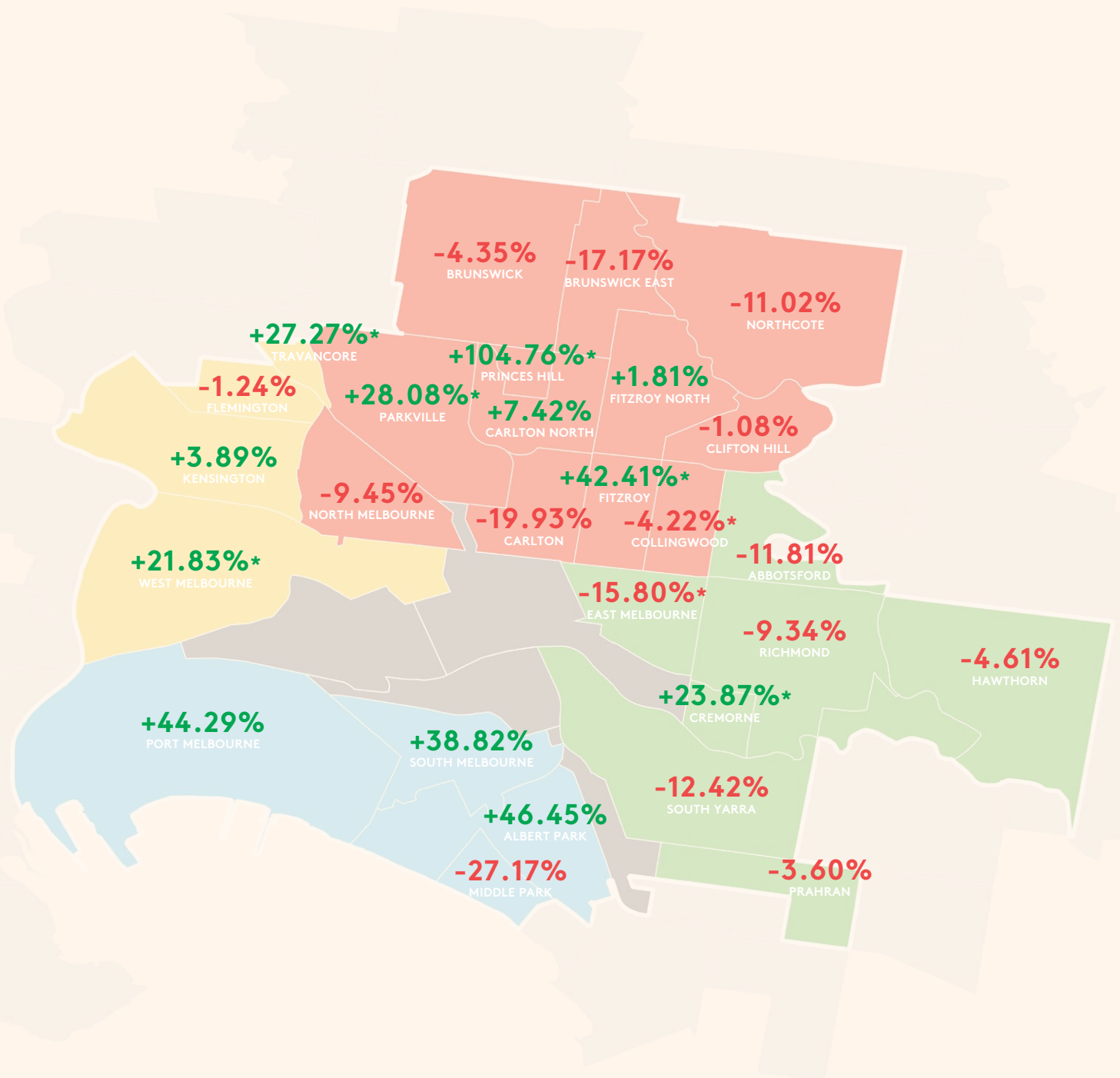
Houses

PRICE COMPARISONS BY ROLLING QUARTERS

	PREVIOUS QUARTER (SEP, OCT, NOV 2015)				CURRENT QUARTER (DEC, JAN, FEB 2016)					
	Average Price	Median Price	Lowest Sale	Highest Sale	Average Price	% change	Median Price	% change	Lowest Sale	Highest Sale
Docklands	-	-	-	-	-		-		-	-
Melbourne	-	-	-	-	-		-		-	-
Southbank	-	-	-	-	-		-		-	-
Brunswick	\$958,615	\$920,000	\$420,000	\$2,005,000	\$898,676	↓ -6.25%	\$880,000	↓ -4.35%	\$667,000	\$1,340,000
Brunswick East	\$1,208,935	\$1,150,000	\$454,000	\$3,400,000	\$978,071	↓ -19.10%	\$952,500	↓ -17.17%	\$740,000	\$1,357,000
Carlton	\$1,338,222	\$1,400,000	\$801,000	\$1,645,000	\$1,234,100	↓ -7.78%	\$1,121,000	↓ -19.93%	\$830,000	\$1,930,000
Carlton North	\$1,208,756	\$1,180,000	\$765,000	\$2,400,000	\$1,416,286	↑ 17.17%	\$1,267,500	↑ 7.42%	\$900,000	\$2,800,000
Clifton Hill	\$1,449,727	\$1,200,000	\$795,000	\$2,506,000	\$1,315,300	↓ -9.27%	\$1,187,000	↓ -1.08%	\$730,000	\$2,335,000
Collingwood	\$980,292	\$918,750	\$775,000	\$1,610,000	*\$893,700	↓ -8.83%	*\$880,000	↓ -4.22%	\$737,500	\$1,010,000
Fitzroy	\$1,418,889	\$1,281,500	\$340,000	\$2,875,000	*\$1,550,333	↑ 9.26%	*\$1,825,000	↑ 42.41%	\$711,000	\$2,036,000
Fitzroy North	\$1,307,769	\$1,159,000	\$660,000	\$4,700,000	\$1,241,833	↓ -5.04%	\$1,180,000	↑ 1.81%	\$835,000	\$2,716,000
North Melbourne	\$1,389,278	\$1,402,500	\$670,000	\$2,780,000	\$1,085,500	↓ -21.87%	\$1,270,000	↓ -9.45%	\$475,000	\$1,650,000
Northcote	\$1,296,381	\$1,125,000	\$750,000	\$3,052,000	\$1,161,968	↓ -10.37%	\$1,001,000	↓ -11.02%	\$753,000	\$2,370,000
Parkville	\$1,943,500	\$2,030,000	\$726,000	\$3,520,000	*\$2,287,600	↑ 17.71%	*\$2,600,000	↑ 28.08%	\$1,238,000	\$3,250,000
Princes Hill	*\$1,050,000	*\$1,050,000	\$850,000	\$1,250,000	*\$2,150,000	↑ 104.76%	*\$2,150,000	↑ 104.76%	\$2,150,000	\$2,150,000
Abbotsford	\$1,037,375	\$1,020,500	\$785,000	\$1,427,000	\$869,643	↓ -16.17%	\$900,000	↓ -11.81%	\$617,500	\$1,100,000
Burnley	*\$915,000	*\$915,000	\$915,000	\$915,000	-		-		-	-
Cremorne	*\$1,162,500	*\$1,162,500	\$1,000,000	\$1,325,000	*\$1,336,700	↑ 14.98%	*\$1,440,000	↑ 23.87%	\$933,500	\$1,790,000
East Melbourne	*\$2,001,250	*\$2,167,500	\$495,000	\$3,175,000	*\$2,599,000	↑ 29.87%	*\$1,825,000	↓ -15.80%	\$1,020,000	\$4,600,000
Hawthorn	\$2,398,574	\$2,005,000	\$853,000	\$6,810,000	\$2,002,600	↓ -16.51%	\$1,912,500	↓ -4.61%	\$1,041,000	\$3,460,000
Prahran	\$1,610,544	\$1,499,000	\$630,000	\$2,950,000	\$1,524,000	↓ -5.37%	\$1,445,000	↓ -3.60%	\$860,000	\$2,975,000
Richmond	\$1,252,483	\$1,182,500	\$610,000	\$4,320,000	\$1,217,029	↓ -2.83%	\$1,072,000	↓ -9.34%	\$725,000	\$2,350,000
South Yarra	\$1,890,317	\$1,610,000	\$380,000	\$6,800,000	\$1,511,909	↓ -20.02%	\$1,410,000	↓ -12.42%	\$626,000	\$2,265,000
Albert Park	\$1,742,276	\$1,550,000	\$849,000	\$3,105,000	\$2,270,714	↑ 30.33%	\$2,270,000	↑ 46.45%	\$1,300,000	\$3,110,000
Middle Park	\$2,788,917	\$2,475,000	\$1,140,000	\$5,200,000	\$1,963,083	↓ -29.61%	\$1,802,500	↓ -27.17%	\$1,407,500	\$2,905,000
Port Melbourne	\$1,330,086	\$1,260,000	\$765,000	\$2,205,000	\$1,773,250	↑ 33.32%	\$1,818,000	↑ 44.29%	\$940,000	\$2,900,000
South Melbourne	\$1,310,455	\$1,230,000	\$830,000	\$1,930,000	\$1,911,500	↑ 45.87%	\$1,707,500	↑ 38.82%	\$930,000	\$3,970,000
Flemington	\$875,433	\$829,000	\$504,000	\$1,560,000	\$1,089,450	↑ 24.45%	\$818,750	↓ -1.24%	\$650,000	\$2,112,000
Kensington	\$976,293	\$900,000	\$700,000	\$1,805,000	\$901,125	↓ -7.70%	\$935,000	↑ 3.89%	\$820,000	\$1,300,000
Travancore	*\$1,100,000	*\$1,100,000	\$1,100,000	\$1,100,000	*\$1,400,000	↑ 27.27%	*\$1,400,000	↑ 27.27%	\$650,000	\$2,150,000
West Melbourne	*\$1,265,000	*\$1,477,500	\$305,000	\$1,800,000	*\$1,800,000	↑ 42.29%	*\$1,800,000	↑ 21.83%	\$1,800,000	\$1,800,000

Table compiled from data collected from September 2015 to February 2016. A dash indicates no recorded sales for the quarter, inability to show a quarterly change or no quarterly change. Directional arrows indicate change in comparison to the previous rolling quarter. * indicates an average or median value calculated using 5 sales or less.

QUARTERLY MEDIAN CHANGE BY SUBURB



Based on data collected from September 2015 to February 2016. Docklands, Melbourne, Southbank and Burnley were omitted due to insufficient data.
* indicates a median value calculated using 5 sales or less.

Townhouses

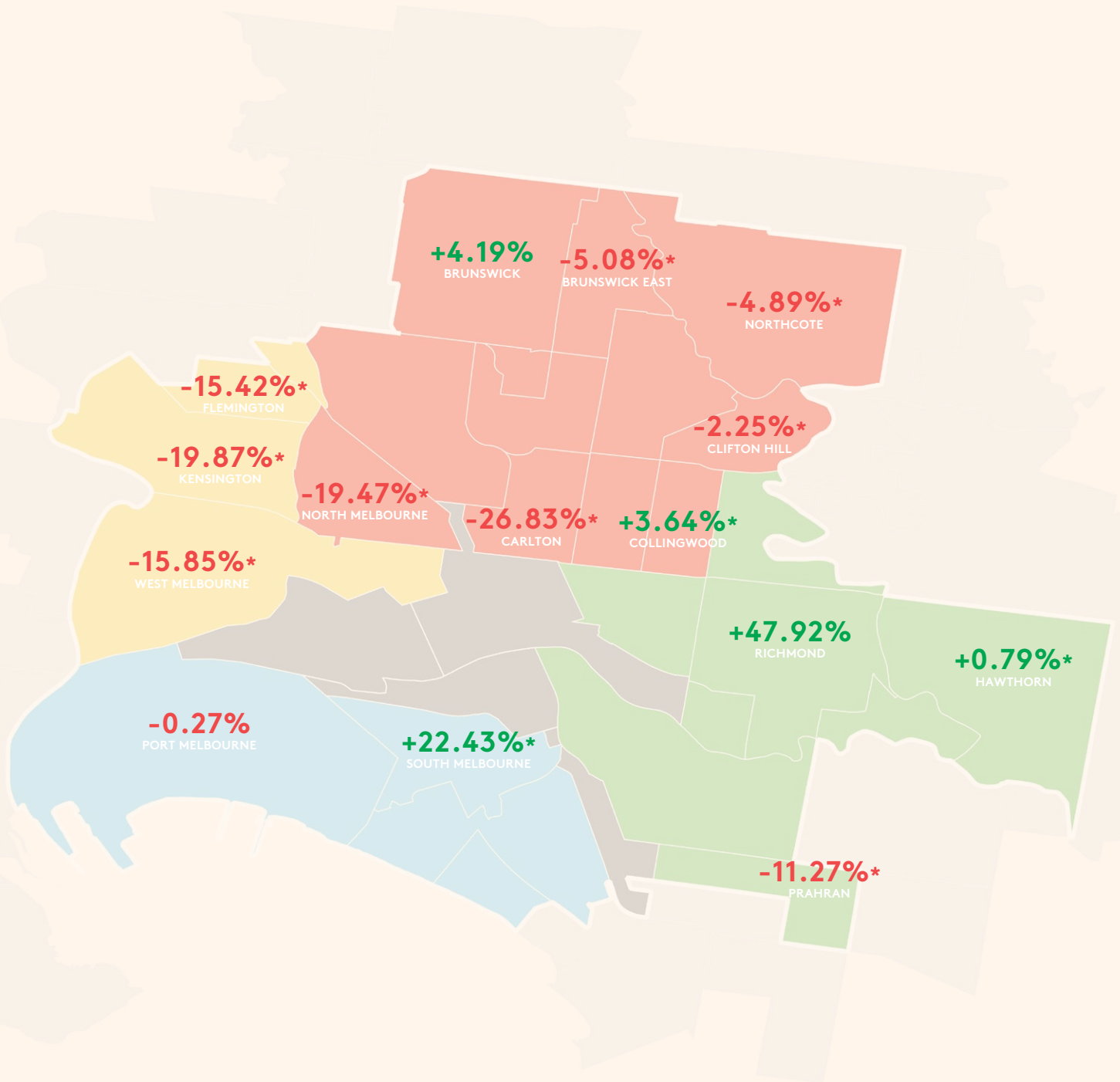
PRICE COMPARISONS BY ROLLING QUARTERS

	PREVIOUS QUARTER (SEP, OCT, NOV 2015)				CURRENT QUARTER (DEC, JAN, FEB 2016)					
	Average Price	Median Price	Lowest Sale	Highest Sale	Average Price	% change	Median Price	% change	Lowest Sale	Highest Sale
Docklands	-	-	-	-	-		-		-	-
Melbourne	-	-	-	-	-		-		-	-
Southbank	-	-	-	-	-		-		-	-
Brunswick	\$813,080	\$716,000	\$512,000	\$1,620,000	\$713,182	↓ -12.29%	\$746,000	↑ 4.19%	\$533,000	\$965,000
Brunswick East	\$795,688	\$816,500	\$665,000	\$866,000	*\$756,667	↓ -4.90%	*\$775,000	↓ -5.08%	\$685,000	\$810,000
Carlton	*\$881,500	*\$881,500	\$845,000	\$918,000	*\$645,000	↓ -26.83%	*\$645,000	↓ -26.83%	\$645,000	\$645,000
Carlton North	*\$1,200,000	*\$1,200,000	\$1,200,000	\$1,200,000	-		-		-	-
Clifton Hill	*\$902,333	*\$977,000	\$640,000	\$1,090,000	*\$955,000	↑ 5.84%	*\$955,000	↓ -2.25%	\$955,000	\$955,000
Collingwood	*\$890,833	*\$892,500	\$870,000	\$910,000	*\$925,000	↑ 3.84%	*\$925,000	↑ 3.64%	\$925,000	\$925,000
Fitzroy	*\$918,000	*\$918,000	\$785,000	\$1,051,000	-		-		-	-
Fitzroy North	*\$658,750	*\$560,000	\$515,000	\$1,000,000	-		-		-	-
North Melbourne	*\$1,045,500	*\$1,055,500	\$731,000	\$1,340,000	*\$842,000	↓ -19.46%	*\$850,000	↓ -19.47%	\$795,000	\$881,000
Northcote	\$704,550	\$746,500	\$400,000	\$1,010,000	*\$702,000	↓ -0.36%	*\$710,000	↓ -4.89%	\$630,000	\$745,000
Parkville	-	-	-	-	-		-		-	-
Princes Hill	*\$1,325,000	*\$1,325,000	\$1,325,000	\$1,325,000	-		-		-	-
Abbotsford	*\$952,500	*\$952,500	\$705,000	\$1,200,000	-		-		-	-
Burnley	-	-	-	-	-		-		-	-
Cremorne	-	-	-	-	-		-		-	-
East Melbourne	-	-	-	-	-		-		-	-
Hawthorn	\$1,065,617	\$947,500	\$722,500	\$1,531,200	*\$955,000	↓ -10.38%	*\$955,000	↑ 0.79%	\$610,000	\$1,300,000
Prahran	*\$1,261,800	*\$1,300,000	\$904,000	\$1,755,000	*\$1,153,500	↓ -8.58%	*\$1,153,500	↓ -11.27%	\$807,000	\$1,500,000
Richmond	\$1,057,115	\$960,000	\$718,000	\$1,575,000	\$1,313,071	↑ 24.21%	\$1,420,000	↑ 47.92%	\$837,500	\$1,900,000
South Yarra	\$1,229,667	\$1,280,000	\$805,000	\$1,650,000	-		-		-	-
Albert Park	*\$1,582,000	*\$1,600,000	\$1,190,000	\$1,855,000	-		-		-	-
Middle Park	-	-	-	-	*\$1,300,000		*\$1,300,000		\$1,300,000	\$1,300,000
Port Melbourne	\$1,179,444	\$1,100,000	\$500,000	\$2,000,000	\$1,156,545	↓ -1.94%	\$1,097,000	↓ -0.27%	\$805,000	\$1,585,000
South Melbourne	\$1,252,857	\$1,360,000	\$960,000	\$1,525,000	*\$1,665,000	↑ 32.90%	*\$1,665,000	↑ 22.43%	\$1,530,000	\$1,800,000
Flemington	*\$655,000	*\$655,000	\$595,000	\$715,000	*\$554,000	↓ -15.42%	*\$554,000	↓ -15.42%	\$554,000	\$554,000
Kensington	\$781,222	\$765,000	\$455,000	\$960,000	*\$613,000	↓ -21.53%	*\$613,000	↓ -19.87%	\$613,000	\$613,000
Travancore	-	-	-	-	-		-		-	-
West Melbourne	*\$921,250	*\$820,000	\$730,000	\$1,315,000	*\$690,000	↓ -25.10%	*\$690,000	↓ -15.85%	\$690,000	\$690,000

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Townhouses

QUARTERLY MEDIAN CHANGE BY SUBURB



Based on data collected from September 2015 to February 2016. Docklands, Melbourne, Southbank, Carlton North, Fitzroy, Fitzroy North, Parkville, Princes Hill, Abbotsford, Burnley, Cremorne, East Melbourne, South Yarra, Albert Park, Middle Park and Travancore were omitted due to insufficient data. * indicates a median value calculated using 5 sales or less.

Words

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SECRET
INSIDE PERSPECTIVE
AGENT



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