RENOVATING THE SYSTEM: ASSESSING POLICY OUTCOMES THROUGH AN EXAMINATION OF RESIDENTIAL SALES TRANSACTIONS

VALERIE KUPKE, PETER ROSSINI & PAUL KERSHAW

UNIVERSITY OF SOUTH AUSTRALIA

&

STANLEY MCGREAL

UNIVERSITY OF ULSTER & UNIVERSITY OF SOUTH AUSTRALIA

ABSTRACT

Significant policy and legislative changes arose out of an examination of real estate practices in South Australia in 2003. These changes sought to address a number of issues including the relationship between estimated selling price and advertised sale price. These changes arose from a review of state legislation and were seen as a means of delivering substantial improvements in the protection afforded to consumers when purchasing residential real estate. This paper quantifies the impact of policy changes relating to estimated selling price and advertised sales price within the residential sector in Adelaide, the state capital of South Australia, through a detailed analysis of first and last advertised prices and eventual selling price for some 120,000 residential sales transactions over a 10 year period. The results, both descriptive and statistical, support the effectiveness of the legislation.

Email contact: **valerie.kupke@unisa.edu.au**

INTRODUCTION

In Australia the real estate industry is currently regulated by the various State and Territory Governments. Following an extended period of self-regulation, legislative changes in the real estate industry took place, throughout Australia, between 2000 and 2007 with states such as NSW, Victoria, Queensland and the ACT all enacting statutes designed to make the real estate market more transparent and to deal with misleading conduct by land agents. In South Australia (SA) an extensive examination of real estate practices was undertaken by the state government in 2003 which resulted in significant legislative changes. These changes sought to address a number of issues including the relationship between estimated selling price and advertised sale price and were seen as a means of delivering substantial improvements in the protection afforded to consumers when purchasing residential real estate.

A major issue dealt with by the new legislation involved the advertising of property for sale especially with regard to listed price and eventual sales price. The practice of 'charm' or 'bait' pricing was targeted. This denotes the under-quoting of estimated selling prices in real estate sale advertisements. The argument against such advertising is that it attracts a proportion of buyers only interested in purchasing a property at a price well under the property's value. On the basis of such misleading advertising prospective purchasers may be lured into paying for pre-auction building inspections and waste time inspecting properties, arranging finance and attending auctions only to discover that the property sells for a considerably higher price outside of the price range they can afford. For any form of real estate transaction it can be seen as fraudulent and deceptive. In SA bait pricing had been prohibited under the Land Business (Sale and Conveyancing) Act (LABSACA) s36 as well as the Fair Trading Act with prohibition on false representations for the purpose of inducing another person to purchase land or business. The new legislation (Government of South Australia, 2007), introduced in August

2007 to the Land Agents Act 1994, however, made it illegal for agents to advertise a property for sale for a price below the agent's genuine estimate of the selling price, or to advertise below the lower price of a permitted price range. This permitted price range could not exceed 10 percent of the lower amount of the range; for example price ranges of $200,000 to $220,000 or $500,000 to $550,000 could be advertised and should reflect the agent's estimate of the market price of the property as quoted to the vendor. Similar changes had occurred in other states in Australia including NSW, Victoria, Queensland, Tasmania and the ACT with regard to advertising practices in the residential market.

This paper seeks to quantify the effectiveness of this legislation in SA through an examination of the relationship between listed or advertised price and transaction prices before and after the changes in regulation which became law in August 2007. The study area is Adelaide, the state capital of SA and includes analysis of first and last advertised prices and eventual selling price for over 120,000 detached residential sales transactions over a nine year period between 2003 and 2011.

The paper begins with a summary of some relevant literature. The next section provides contextual background for the analysis in terms of the volatility experienced by the residential market in SA over the period of the study. Next there is an explanation of the method which is followed by the results; these are both descriptive and statistical. The paper finishes with a conclusion and some implications of the findings.

LITERATURE REVIEW

A number of studies have reviewed advertised price in relation to final selling price some of which have sought to determine whether there exists an optimal pricing strategy (Miller & Sklarz, 1987). Early US studies suggested that advertised price was a leading indicator of selling price (Knight, Sirmans & Turnbull, 1994; Yavas & Yang, 1995) while Allen and Dare (2004) concluded that the practice of 'charm' or 'bait' pricing resulted in higher transaction prices. Others, however, have suggested that the relationship between list price and sale price is unimportant as in the Hong Kong market (Wong & Hui, 2008). Palmon, Smith and Sopranzetti (2004) conclude that while most properties are listed at just below even ending prices those advertised at even ending prices sell faster and at higher prices. However Benjamin and Chinloy (2000) suggest it is always better to advertise a house at or below market value because over pricing yields minimal extra return. McGreal, Brown and Adair (2010) have analysed the relationship between advertised and sale price within the context of market cycles and show that in the UK under normal conditions the mean deviation between advertised price and sale price is small, about 1 per cent. There is, however, a much more significant departure between advertised price and sale price during the up and down cycles of the market. Their results demonstrate that advertised price lags sale price on the up cycle but leads on the down cycle.

Other studies have concentrated on the important role agents play as intermediaries in transactions between buyers and sellers of property. Studies have considered the impact of agency representation on transaction prices (Zietz & Newsome, 2002; Elder, Zumpano & Baryla, 2000) and conclude that such impact is limited but may vary according to property size. Certainly in less mature markets such as Iran it has been concluded that the increase in real estate agents and their activities has significantly stimulated house prices (Fereidouni, 2012). In France, Violand and Simon (2007) found that real estate agents had a positive effect on prices while in the US Elder et al (2000) found that, while the activity of agents did reduce search time, it did not influence transaction prices. In the UK a wide ranging investigation into real estate agency and the role of agents took place over a decade ago (Jones, 2002). The outcome of this study suggested that regulation was required in order to curb some aspects of the sector (Bishop, 2002) and so foreshadowed the legislative change introduced into Australia. Research in Australia, in particular into the auction process, (Reed et al 2002) also supported the need for revision of certain industry practices in order to ensure market values were achieved and consumers not disadvantaged.

BACKGROUND

The period of this study, 2003 to 2011, was one of considerable turbulence within the real estate market in SA and any analysis must be mindful particularly of events which took place after 2007. The period up to 2006 was marked by relative stability in house prices within Adelaide as indicated by Figure 1. Just as the legislation was introduced, however, there was a period of fairly rapid house price rise. This then was curtailed by events associated with the GFC. Post GFC there was relative price stability followed by a short period of price increase and then another fall in prices. Thus the period just after the legislation's introduction was once of relative instability within the residential market as confidence dropped post GFC along with the volume of residential sales (Figure 1). Against this background agents had to comply with a new advertising regime and it is estimated that it took some six months for agents to adjust. Therefore in this analysis, in order to accommodate both the market volatility and a period for industry adjustment, the before legislation period has been determined as up to January 2008. This period experienced shorter periods of negative growth (based on negative changes to the

ABS established house price index) and more extreme positive growth periods than the post legislation period after January 2008.

Figure 1

Source: Author analysis of RPdata via UPmarket Data Analysis Tab
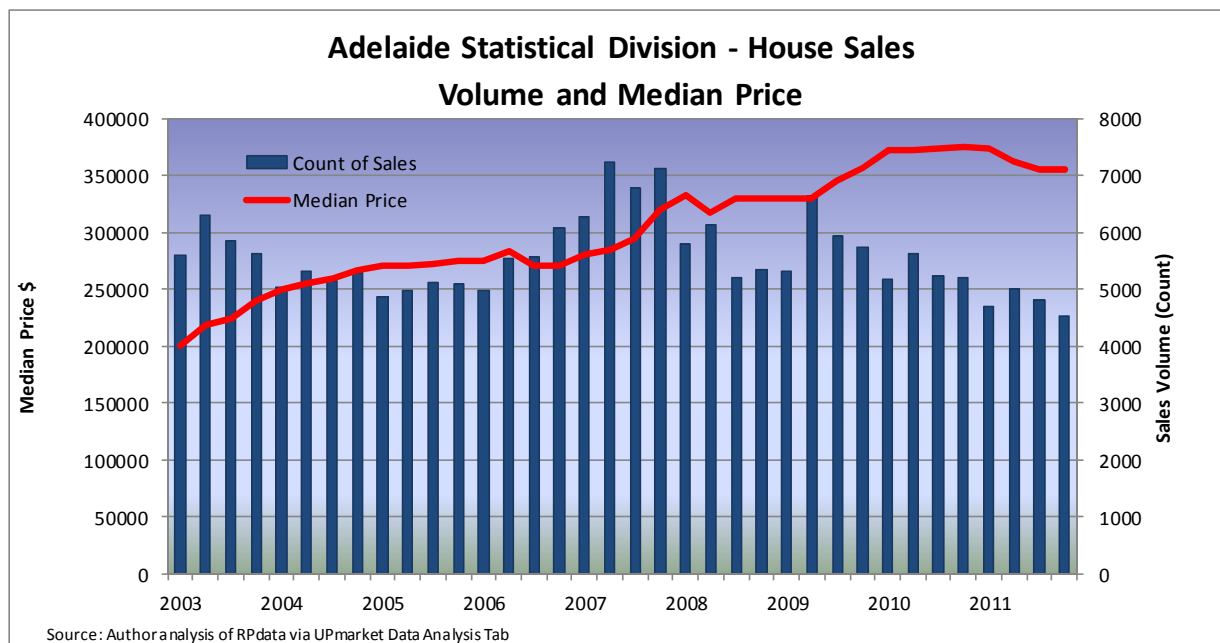
METHOD

The data used on the study does not come in a database but is the result of individually interrogating the records of a commercial provider, RPdata for all properties that were advertised and subsequently sold during the study period. Sales records are compiled by the SA government and sold through private providers and are available to academic institutions for research. The data base in this study involves the matching of some 120,000 of these sale records against the online RP data and weekly advertising history. Each probable residential transaction is individually examined on the RPdata site and the list of advertised details used to establish four key variables: first and last advertised date and the first and last advertised price. This means that for all observations the advertising history is analysed to establish how many days between the first and last advertised price as well as the indicated prices at each point. Where the indicator price is in a range we use a standardised process to convert this to a number. Then this entry is merged with the actual transaction data from the SA government land titles office to create the final record.

The before and after legislation analysis is based on a simple stratification of data for detached residential houses by year. The data was stratified around January 2008 and all transitions prior to 2008 (2003-2007) are listed as before legislation and those from 2008 onwards considered to be after the legislation. This resulted in the sample of transaction being split roughly in half (63685 sales before and 65312 after). As not all observations contained the advertised price this results in 49512 and 52514 valid observations respectively when comparing the first advertised price to the actual sale price.

Based on the establishment of the two time periods, pre and post January 2008, the hypotheses of the study are that change between the first advertised and last advertised price and between the last advertised price and actual sale price have both been reduced. The analysis to test these hypotheses included first, a descriptive evaluation of the % price difference over time and a spatial breakdown of mean % price difference before and after legislation. Second, for each hypothesis, the change was tested by measuring the variance of the percentage change, with significance established through the Levene and Brown-Forsythe tests, rather than by the mean % change. The Levene test and the Brown-Forsythe variation are used to test if variances across the two groups, pre and post January 2008, are equal. These tests are useful because they can be used to decide if the t-tests for equality of means should be based on an assumption of equal variances. Both the Levene test and the Brown-Forsythe variation to this test measure the absolute deviation from the point of central tendency. The Brown-Forsythe variation, however, uses the median rather than the mean as the measure of central tendency and this is likely to be more robust if the distribution is not normal. If over or underquoting has been an issue that is resolved through the legislation, then the number of properties sold at prices which vary greatly from the

advertised price should reduce. In particular, this would be regardless of the market volatility discussed above which would more likely be reflected in the mean (or median) percentage change.

RESULTS

Descriptive

The first chart (Figure 2) shows the percentage difference in price between the first to last advertised price as indicated on the weekly marketing information on the RP data website. The chart shows the median percentage difference between the first to last advertised price as well as the 95 and 5 percentiles (that is between is the 90% band). The percentage change in house prices is superimposed as an indicator of market performance during the same period. The chart shows that up to the period of the legislation, on average, most properties have 0% difference between the first and last advertised price. During periods, however, when house prices are increasing there is evidence that for some properties listed prices have increased from the first to last advertised price. On average though, most remained the same with around 5% of properties dropping by about 10% in some cases. Changes to the legislation occurred as of 2007 Q3 and post legislation (from 2008 Q1) there is no evidence of prices increasing from first to last advertised price even during periods of positive change in house price. This figure appears to indicate that post legislation real estate agents in Adelaide typically sold properties very close to the advertised price. It should be noted, however, that the practice of auctioning properties is common in Adelaide for high priced properties where the agent is less certain of the value and pre legislation the advertised price was unlikely to be listed. So that in those circumstances where the difference between advertised and actual price is likely to be the greatest, there is a paucity of data.
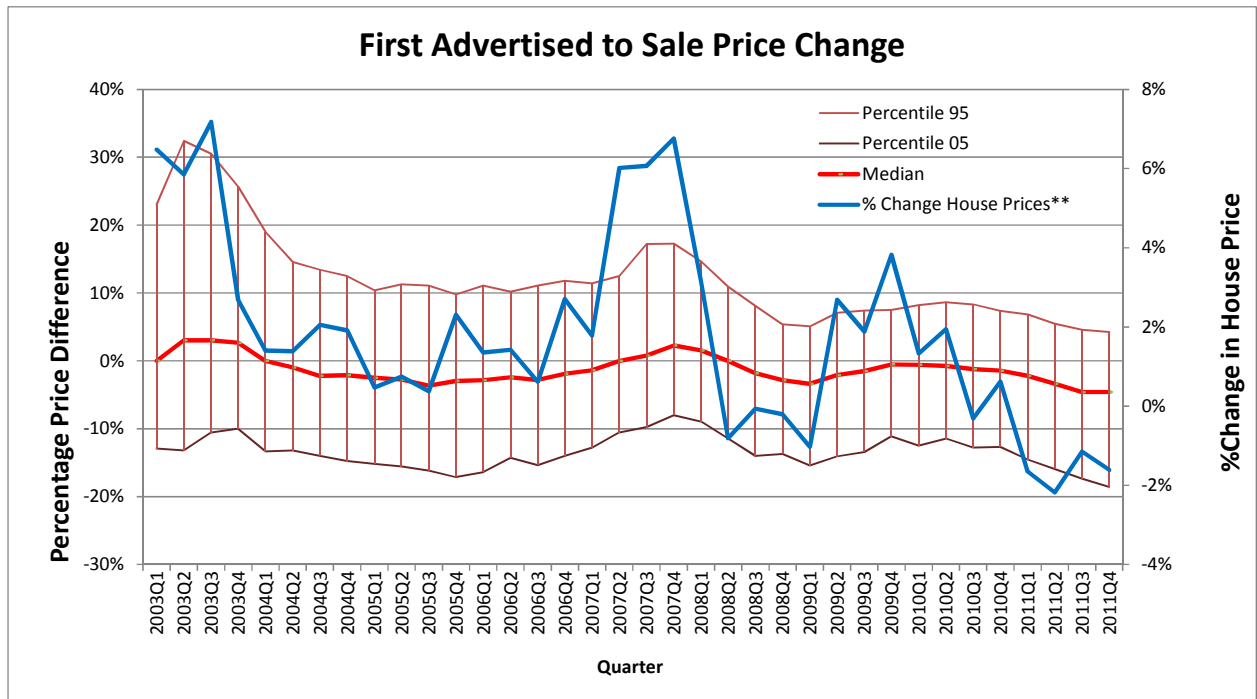
Figure 2
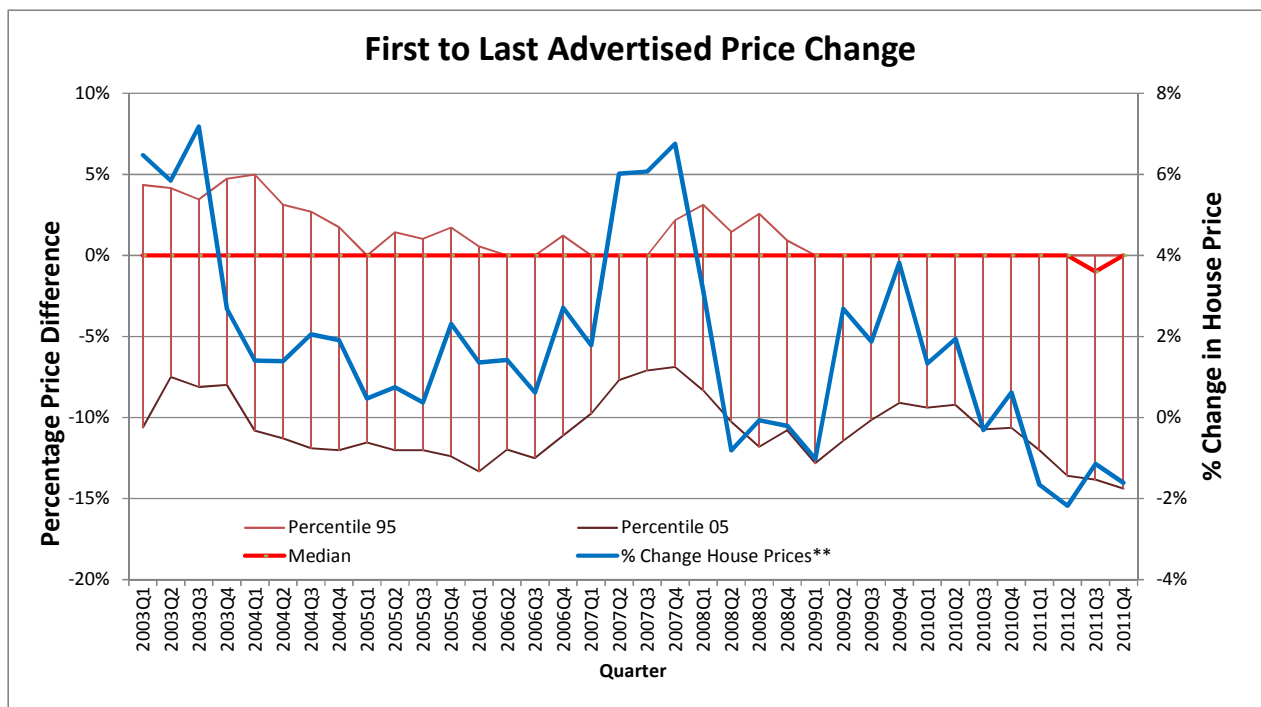
Source: Author analysis of individual transaction data matched from UPmarket and RPdata

The second chart (Figure 3) compares the first advertised price to the actual sale price that eventuates. During periods of positive change in house prices the median is above zero. In other words on average the final sale price is above the first advertised price. It drops below zero in periods of poor market activity and lower prices. This chart also shows noticeable change post legislation with significant under or over estimating of asking prices curtailed. Advertised prices are much closer generally to expected sale prices and this is evident in the overall narrowing of the 90% percentage band. This is an important finding and supports the second hypothesis of a reduction, post legislation, in the difference between last advertised price and sale price.
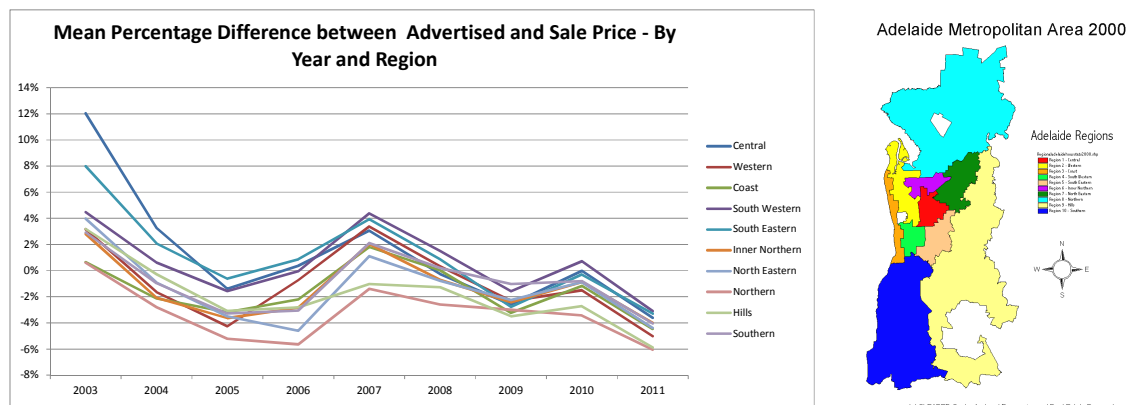
Figure 3

Source: Author analysis of individual transaction data matched from UPmarket and RPdata

Across Adelaide there is also a narrowing of this band as indicated by Figure 4. This represents 10 regions across Adelaide established by the Centre for Land Economics and Real Estate Research (CLEARER) in a previous study (Rossini et al, 2005) which can be used for indexing and other purposes. The regions are made up of contiguous postcodes and based on a combination of socio-economic and physical criteria. Across the regions there is a universal reduction in the mean % difference between advertised and sale price and there is a noticeable narrowing of the band post 2007 resulting in a mean % difference in the negative and within what should be surmised as 10% of the agents estimate of selling price.
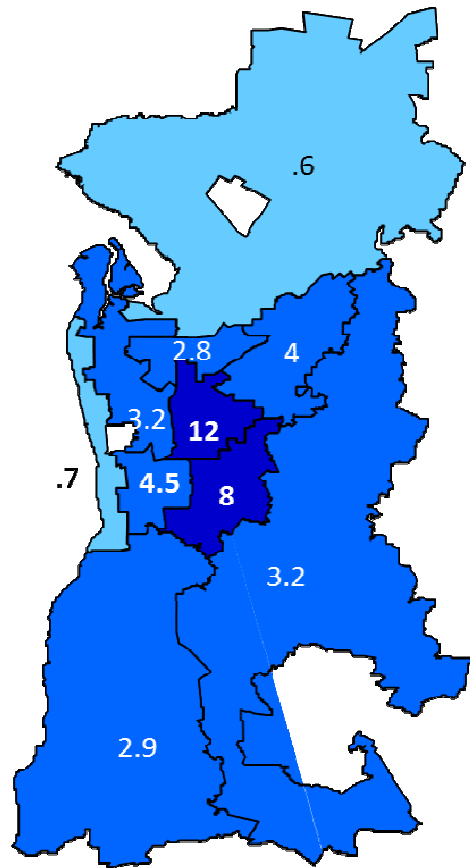
Figure 4

Source: Author analysis of individual transaction data matched from UPmarket and RPdata

Figure 5 shows the mean % difference between last advertised price and sale price across the regions in Adelaide for the beginning and the end of the study period; 2003 Q1 and 2011 Q4. These regions represent higher priced inner city markets, popular seaside suburbs and outer fringe major subdivision. The maps highlight that across the regions the difference was considerably greater in 2003, when compared to 2011, especially the vast underestimates in last advertised price in the popular city and inner south regions. Again this lends weight to the conclusion that post legislation there has been a narrowing of the difference between last advertise price and sale price across all regions including inner city upper priced markets and the out suburban mortgage belts.

Figure 5

Mean % Difference – Houses 2003

Mean % Difference – Houses 2011

Mean Percentage Difference

Less than -5%......

-2.5% to -5%.......

0% to -2.5%..........

0% to 2.5%..........

2.5% to 5%..........

Greater than 5%..
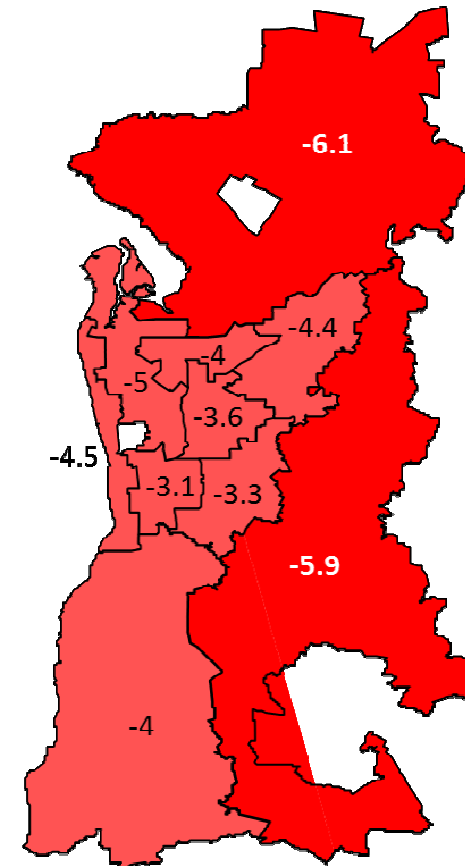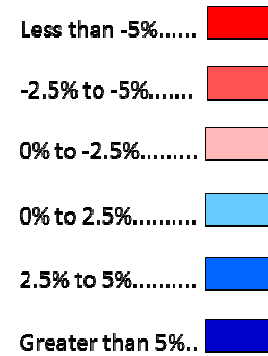
Source: Authors Analysis of RPdata information. Map © Peter Rossini

Statistical

Results based on standard deviation (Table 1) show that the mean percentage change between last advertise price and sale price has changed from an average of -.96% before the change in legislation to -2.2% after the change. As well the standard deviation has significantly reduced from around 13% to 8.7%.

Table 1

Percentage Change **First Advertised** Price to **Actual Sale Price**	N	Mean	Std. Deviation
Before Change	49512	-.0096	.13071
After Change	52514	-.0220	.08785

These two apparent changes are also tested using both the Levene and Brown-Forsythe tests (Table 2). These tests indicate that the null hypothesis that the variances are equal cannot be rejected when considering the percentage change between the first to last advertised price but can be rejected when considering the percentage change between the first advertised price to the actual sale price.

Table 2

	Levene's Test		Brown-Forsythe Test			
	F	Sig.	Asymptotically F distributed.	df$_1$	df$_2$	Sig.
Percentage Change **First Advertised** Price to **Actual Sale Price**	935.707	.000	311.832	1	85964.722	.000
Percentage **Change First Advertised** Price **to Last Advertised** Price	.492	.483	0.236	1	47703.081	.627

Following from this the means are tested using the t-test for equality of means with the variances assumed to be equal in the instance of first to last advertised price but not assumed to be equal in the case of the change from the first advertised to the actual sale price (Table 3). The mean percentage change has become a larger negative in the after legislation period compared to the before legislation period and this difference is statistically significant at a 99% level of confidence. The variance has reduced dramatically and this change is also statistically significant. The change in the mean value may be largely explained by a "tighter" market. During periods of negative growth a larger number of properties would be expected to sell below the asking price as prices fall. The situation is reversed in a rising market. However in this instance the variable variance (or standard deviation) should remain much the same i.e. the distribution shifts but does not widen or narrow. The study by McGreal et al (2010) supports this finding.

Table 3

	t-test for Equality of Means				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Percentage Change **First Advertised** Price to **Actual Sale Price** Equal variances not assumed	17.659	85965	.000	.01239	.01101	.01376

Percentage **Change First** **Advertised** Price to **Last** **Advertised** Price	Equal variances assumed	-.488	94438	.625	-.01039	-.05207	.03130

CONCLUSION

In conclusion the descriptive analysis and the statistical tests support the second hypothesis and confirm that, prior to the legislation, while the mean percentage difference between last advertised price and transaction price might vary with market fluctuations, the dispersion remained consistently large. Following the legislative change, however, the distribution narrows and indicates that few transactions fall outside of the 10% change mark. This is supported by statistically significant test results which show that the variance of the dispersion, post legislation, is much reduced. This confirms the second hypothesis that changes between the last advertised price and actual sale price have been reduced and validates the introduction of the legislation.

In comparison the first hypothesis which looked for change between first and last advertised price is not supported as there seems to be little difference in the percentage changes between the first and last advertised price over the period of the legislation. The most likely explanation is that regardless of the legislation under or over quoting was equally evident when properties were first advertised and when last advertised. The result of the legislation is that the first advertised prices is now closer to the expected sale price and hence more closely aligned with the actual sale price. As across all periods agents tend not to vary the advertised price over the life of the listing (evidenced by the zero mean value across all time periods when considering the first to last advertised price) the relationship between the first advertised price and the actual price is almost identical to the last advertised price and the actual sale price. As such this second piece of analysis may be largely redundant given the assumption that if the first advertised price, post legislation, is more accurate then so too will be the last. If the first advertised price is over or under quoted so will be the last advertised price.

The implications of the study are that, in terms of agent compliance, the change in policy has been successful. Both the descriptive and the statistical analysis support the effectiveness of the legislation. The findings are important as they indicate that, regardless of market volatility, the vast majority of agents are now acting within the legislation. The findings support the professionalism of agents in terms of their estimation of selling price while the demise of 'bait' pricing, which provoked frustration, lack of transparency and uncertainty, is a good outcome both for consumers and for the industry.

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