The Adverse Effects of Single Approach Appraisals and Single Point Valuations

Recognizing and measuring the market impact of volatility in residential real estate purchase prices and valuations.

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Abstract

Many believe appraisal to be an exact science, however we find there is considerable variance in both appraised values and purchase prices. Appraised values often vary from established benchmarks, most commonly a known purchase or contract price. In most studies the measurement of valuation error is based on the underlying assumption that the sale price is an accurate reflection of true market value. This paper challenges that assumption. This paper also asserts that appraisals are even less precise than the market, and proposes steps that can restore appraisals to a position of authority in the field of valuation. Improving the valuation process will contribute to improved real estate market efficiency benefiting all real estate market participants.

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Introduction

Real estate markets are imperfect markets; we should expect a certain lack of precision when measuring both sale prices and appraised values. Even in the most homogeneous neighborhoods, no two properties are truly identical, and no two buyers operate with the same information or motivations. Value, like fairness, is in the eye of the beholder.

Values concluded in residential appraisal reports are said to be "in error" when those values disagree with actual sale prices. Closed sale prices are believed to be the best evidence of market value as defined in the federal register[i]. While there are many studies of the error rates in appraised values, there are few studies of the error rates in sale prices.

This paper presents research into variances in actual sale prices, as well as evidence of error rates in appraisals. Transactions for homes that are as close to identical as can be found are analyzed, and the bidding process in multiple offer situations relative to the definition of market value is considered. When compared with error rate studies for residential appraisals, it becomes clear that appraised values have a wider variance than sale prices. When we acknowledge that appraised values are being measured for error against a benchmark that itself contains errors, it becomes necessary to widen the probable degree of error in residential appraisals.

Part I: Appraised Value Error Rates

Published Appraisal Error Rate Studies

There is considerable data supporting the idea that there is an error rate, or valuation variance in residential appraisals, somewhere between as low as 3% and as high as 18% or more, with a majority said to be between about 8% and 13%. This has been found through large studies comparing multiple appraisals for the same property, and in comparing appraisal data with sale price data across the country.

An undated paper[ii] by economist Mark Fleming of CoreLogic says that "industry experts have estimated that an appraisal is likely to have a standard error of about 13%. That is to say that 95% of the time an appraisal is within 26% of the true market value of the property."

Digital Risk[iii] conducted a study involving several hundred thousand properties. Two appraisals were obtained for each property and compared. The average variance between appraisals was 7% to 8%. Digital Risk concluded that at a 95% confidence level, a variance of 15% was observed. In other words, at an appraised value of $300,000 the real market value is between $255,000 and $345,000 with a 95% confidence level.

In all these studies, "true market value" is either equal to the actual sale price of the property, or it is based on an automated valuation model (AVM) for the property.

These studies (and others like them) make clear that there is a great deal of volatility around estimating the "true" economic value of a property (the "true" economic value is one determined

by a “perfect” market where there is substantial efficiency.) Sales price is one such method and it yields a relatively broad distribution. Similarly, appraised values also produce volatility that creates a broad distribution. It is generally believed that some form of triangulation using sales price, appraised price and other methodologies will get us close to an estimate that coincides with the “true” economic value.

These studies raise the question: are sale prices more indicative of true, fundamental value than appraisals? And a corollary question: should the “error rate” or variance among sale prices be less than, equal to, or greater than the error rate or variance among appraisals? In other words, how precise should we expect an appraisal to be?

Variances in the Indicated (Adjusted) Values in Appraisal Reports

Of the three primary approaches to value – sales comparison, cost and income – the sales comparison approach has been the focus of residential valuation for nearly a century. In most modern residential appraisals the income approach is never developed, and the cost approach, when developed, is unreliable. The cost approach is not unreliable due to a flaw in the methodology, but instead because it is rarely developed in a credible manner.

The Sales Comparison Approach to Value: Theory

In its simplest form the sales comparison approach is an exercise in finding the most recent sales of properties that are as similar as possible to the property being appraised and adjusting out any differences to get an indication of what the subject property is worth.

The adjustment process is the way an appraiser makes a property that is similar to the subject property identical to the subject property. In theory, quantitative adjustments derived through market analysis should result in value indications that are nearly identical for each of the comparable sales. When a property has a feature that is judged inferior to the subject property, a positive adjustment is made to the comparable property to indicate the difference in sale price that would have been realized if the features were equal. Conversely, a superior feature is adjusted negatively. For example, if the subject property has a two-car garage, and the comparable property is identical in all material aspects except it has only a one-car garage, the comparable property price would be adjusted upward by the amount of contribution to value a second garage stall would have provided, thereby making the comparable property “equal” to the subject property.

In the following hypothetical example, the comparable properties sold for different prices, but after adjustments, each indicates the same price. This illustrates an ideal outcome wherein, with proper market support for the adjustment amounts, there is clear support for a final value for the subject property of $265,000. We start with an unadjusted range of $255,000 to $275,000 (7.55% range) and after adjustments all sales are at $265,000 (0.00% range). The adjustment process closes the range of differences in raw sale prices to provide an indication of value for the property being appraised. A zero percent range is ideal but almost never achieved, but the adjusted range should always be much narrower than the unadjusted range.

Feature	Subject	Comparable # 1		Comparable # 2		Comparable # 3	
		Description	$ Adjustment	Description	$ Adjustment	Description	$ Adjustment
Address	123 Main St	129 Main St		112 Main St		201 Elm St	
Sale Price	N/A		$255,000		$275,000		$270,000
Sale Date	N/A	11/30/2014	$0	11/20/2014	$0	12/5/2014	$0
Location	Urban	Urban	$0	Urban	$0	Urban	$0
Site	1.25 Acre	1.25 Acre	$0	1.25 Acre	$0	1.75 Acre	-$15,000
View	Golf Course	Golf Course	$0	Golf Course	$0	Golf Course	$0
Age	8 Years	8 Years	$0	8 Years	$0	8 Years	$0
Quality	Good	Good	$0	Good	$0	Good	$0
Condition	Good	Good	$0	Good	$0	Good	$0
Square Footage	2150	2150	$0	2250	-$10,000	1950	$20,000
Garage	2-Car Garage	1-Car Garage	$10,000	2-Car Garage	$0	2-Car Garage	$0
Pool	None	None	$0	None	$0	In-Ground Pool	-$10,000
Adjustments %			3.92%		3.64%		1.85%
Indicated Price			$265,000		$265,000		$265,000

The Sales Comparison Approach to Value: Practice

Now that we have established the theory, let's look at what happens in practice. In a sample of just over 30,000 appraisals conducted late November through mid-December 2014, the average unadjusted sale price range for comparable sales was 23.38%, and the average adjusted sale price range was 14.03%. The median unadjusted amount was 18.44% and the median adjusted amount was 10.15%. In 15.58% of the cases, the adjusted range was *wider* than the unadjusted range, suggesting that the adjustment process was entirely without support and the appraised values in those cases should not be relied upon.

When broken down by refinance appraisals versus appraisals for purchase transactions, an interesting pattern emerges: refinance appraisals reflect greater variance in the comparable prices than purchase transaction appraisals.

Average Percent Difference in Comparable Sale Prices Low-to-High			
		Unadjusted Range	Adjusted Range
Total Number of Appraisals in Sample	30,295	23.38%	14.03%
Total **Refinance-only** Appraisals	20,170	24.88%	15.19%
Total **Purchase-only** Appraisals	10,125	20.41%	11.73%

The primary reason for looking at adjustment ranges is that the final appraised value almost always falls within the range, and it is supposed to be based on a reconciliation of all the data within the appraisal based on the judgment and experience of the appraiser. As a practical matter, the reconciliation process is often treated too casually. The final value opinion is commonly an

average of all indicators, or worse yet, a number closest to that which is needed to facilitate the contemplated transaction.

Even in cases where all the comparable sales in the appraisal report have the exact same square footage (308 of the 30,205 appraisals in this sample), the narrowest spread was 7.84% for the adjusted range in purchase-only appraisals. The unadjusted range was higher, and in keeping with the whole dataset, refinance-only appraisals had wider ranges than purchase-only appraisals. The lack of a known "target" in refinance transactions may contribute to the wider spread. The wider range can provide the appraiser with more room to move in reconciling a final value, contributing to upward bias.

Ultimately, once a range is determined, where the real market value is within that range remains unclear. In other words, the range itself should be seen as another indication of error. As such, on average, we find there is *best case* error rate of about 12% based on the appraisal data itself without comparing the appraisal to any other outside data.

Appraisers have always been reluctant to make adjustments to comparable sales without appropriate support. Historically, sufficient data was hard to find and assemble, and proper analysis was a manual and time consuming process. Ranges in adjusted sale prices of more than 10% were the norm. An appraiser could reconcile a final value almost anywhere within that range.

In today's world of "Big Data" delivered right to the desktop with astonishing speed, and robust analytics, also at the desktop, supporting every adjustment is not only possible, it is essential. The process can be highly automated and include far larger datasets than ever. Narrowing the adjusted range reflects advancement in the science of appraisal; responsible reconciliation within that range reflects refinement in the art of appraisal.

The Cost Approach to Value

The appraiser is expected to reconcile both the data within each approach to an indication of value by each approach, and to reconcile the approaches used into a final value opinion for the property. Since the income approach is rarely developed for single family houses, the approaches to be reconciled are the sales comparison approach and the cost approach. We find that since the cost approach is no longer required for GSE appraisals, it is only found in about half of all residential appraisals.

In the cases where it is found, the differences between the value indicated by cost approach and the value indicated by sales comparison vary quite widely. In a relatively small sample (51 appraisals with a completed cost approach), the range of difference from the appraised value to the value by cost approach was from -100% to + 494.48%. It is widely understood that many appraisers "back in" to the cost approach, meaning they figure out the value by sales comparison and then deliberately complete the cost approach to match the predetermined value by sales comparison. In this small sample, only 10% were below the final value opinion, and just over 38% of the cases showed the cost approach to be within 1% of the sales comparison approach, supporting the claim that appraisers construct this approach, or back into it without really doing

the research. We also found that only about 10% of these appraisals had any reference to site sales for support of the site value used in the cost approach.

For this sample, the cost approach was, on average, 12.17% above the final value opinion. In other words, the average error rate for the reconciled value is 12.17%.

How do appraised values relate to transaction prices?

A study of 69,134 appraisal reports[iv] done for purchase transactions nationwide from June 2013 through mid-October 2014 shows that about 65% of the time, the appraised value is above[1] the contract sale price. Over this 17 month period, the high for any two-week period was 67.69% and the low was 61.44%.

For appraisals below contract price, the high was 12.31% and the low was 8.79%. An additional observation is that since mid-August 2014, appraisals below contract have held at under 10%.

Purchase Transaction Breakdown		
Appraisal equal to contract:	16,998	24.59%
Appraisal **above** contract:	44,298	**64.08%**
Appraisal **below** contract:	7,838	**11.34%**
Totals:	69,134	100.00%

In over 88% of appraisals, the appraised value is equal to or greater than the contract purchase price; in about 75% of cases the appraisal value disagrees with the contract sale price. So, out of the gate we have at least 75% of cases in which some error is present – either the buyer has agreed to a contract price that is not equal to value (assuming the appraisal is right), or the appraised value is not equal to market value (assuming the contract is right).

In many cases where the appraisal is above the contract price, this has occurred due essentially to rounding; for example, the contract price is $299,950 and the appraised value is $300,000. However, my study found that nearly half of the appraisals above contract exceeded the contract price by more than 2%, whereas almost 85% of the appraisals below contract were more than 2% below the contract price. In other words appraisals below the contract price tend to miss by a larger margin. Value conclusions below the contract have a much different impact on the proposed transaction than those above, and appraisers have discovered that when they miss on the low side, it is best to miss by a lot.

These findings are only slightly different from findings published in 1996 by Cho and Megbolugbe[2] which found that "95% of appraised values were greater than or equal to the pending sale price. However, the data sample suffers from selection bias because pending sales

[1] The percentage difference between contract price and appraised value varies; in some cases it is simply a function of rounding but in many cases the spread is quite large. A specific breakdown is available, but not included in this paper.

[2] Cho, M. and I. F. Megbolugbe. (1996). "An Empirical Analysis of Property Appraisal and Mortgage Redlining." *Journal of Real Estate Finance and Economics*, 13(1): 45-55

with low appraisals are often voided." The data analyzed from June 2013 through October 2014 provides a more realistic view because they are pre-funding first-submissions, and any renegotiation or voiding of transactions would take place following these submissions. The data analyzed by Cho and Megbolugbe was based on mortgages already closed and purchased by Fannie Mae.

Commercial Real Estate Appraisal Error Rates

In commercial real estate appraisal, some studies suggest the variances are even wider than in residential real estate[v]. This seems intuitive because there is considerably less homogeneity in commercial property, and because value in commercial real estate is often driven by anticipated cash flows, purchase prices reflect varying degrees of investment return requirements by different types of buyers.

Analyzing commercial income streams is a far more involved process than anything required for analyzing residential real estate. Even if we have two buildings that are mirror images of each other located on adjacent sites with identical rent rates and similar expenses, the buildings still don't have the same tenants. Therefore, the perceived durability of the income streams will be different and this probably results in different values for two otherwise nearly identical properties; depending on the type of tenants, the value difference could be significant.

In residential real estate, two mirror image properties on adjacent sites would not typically have income as a primary value driver, and thus the values would be much closer to each other than in our commercial real estate example above.

Part I Conclusion

Appraised value variances are wide. Random errors should occur evenly above and below the benchmark value, but we see clearly that in at least half of all purchase transactions appraised values are upwardly biased. Bias below transaction price is rare, and one is left to wonder how much differently these figures would look if the appraiser was not privy to the contract price before conducting the valuation.

Part II: Appraised Values Relative to Contract Prices

Analysis of Prices Paid

In this study, I look at sale price data[3] on a micro level. The first set of data is transaction prices for a subset of houses in a small tract development of 76 homes. I have isolated the 21 houses[4] within this tract that are the same floor plan: 1212 square feet of living area, 2-car garage, 3-bedroom, 2-bath homes built by the same builder within the same 12 month time frame. The sites

[3] Historic appraisal data for these transactions is not available for comparison. Listing data is only available from about January 2000 forward.

[4] Six of the 21 houses of this plan were held for rental by the builder and were sold off between 1995 and 1999.

are nearly interchangeable as well. Any measurable differences in buyer transaction costs that might have been paid by the seller and added on to the list price are addressed. Aside from minor differences in maintenance and upkeep, these houses are nearly as substitutable as stock certificates.

Three sets of data within this one tract development are analyzed.

Pair one: 5041 39th St NE and 5049 39th St NE

This pair traded as new homes in February 1993 at $105,950 and $110,400 respectively, a 4.11% difference. In January 2003 both homes were sold again, at $175,000 and $179,000, a 2.26% difference. The pair traded again, in June and July of 2014 at $216,000 and $235,000, an 8.43% difference.

It is worth noting in this case that in 2014, the list price for 5041 39th was $209,950 and the house was on the market 13 days before a contract was entered. The sale terms included a VA loan for the buyer and listing indicates that the seller paid concessions. It appears that the seller's contribution to the buyer's closing costs were simply added on to the transaction price so that the net proceeds to the seller remained about the same as they would have been without the "concession." The house at 5049 39th was listed at $230,000 and was on the market 19 days; there were also seller concessions paid in this transaction. There was no overlapping time when both were available.

This was a 9.11% difference in list prices. Both have seller concessions of slightly different amounts, both of which appear to be added to list price so listing price differential may be more indicative of price behavior than final selling price.

Date	Price	% ABS Difference
Feb 1993	109,950	
Feb 1993	110,400	4.11%

Date	Price	% ABS Difference
Jan 2003	175,000	
Jan 2003	179,000	2.26%

Date	Price	% ABS Difference
Jun 2014	216,000	
Jul 2014	235,000	8.43%

Pair two: 5028 38th St Ct NE and 5001 39th St NE

This pair traded as new homes purchased directly from the builder in 1992 at nearly identical prices. In 2009, the house at 5001 39th was first offered at $258,000 and did not sell before

several price reductions and a 289 day marketing time. The sale price of $214,950 was reported without any seller concessions.

The house at 5028 38th was offered at $199,900 and was under contract for sale within seven days, however that transaction failed. After a few more weeks on the market, the price was lowered to $184,950. A second offer, subject to inspection, also failed. The reported 19 days on the market is deceptive because it only counts the number of days the property was actively for sale between offers.

There were a couple of short periods during which both properties were available; the lower priced home sold first. By June of 2009, the list price differential was 19.57% ($184,900 vs. $224,999). The list price of 5001 39th St NE was reduced to $214,950 after 5028 38th St NE went off the market for the final time before closing. There was no discernable difference in quality or condition of the houses at this time.

Date	Price	% ABS Difference
Oct 1992	108,950	
Dec 1992	107,950	0.92%

Date	Price	% ABS Difference
Jul 2009	185,000	
Aug 2009	214,950	14.98%

Pair three: 5017 39th St NE and 5054 39th St NE

Both of these homes were held for rental by the builder initially. They were sold to owner-occupant buyers in 1995 and 1996. In 2002, both were re-sold, 5107 39th in May 2002 for $167,000 and 5054 39th in June 2002 for $180,000. This is a difference of 7.49%.

Date	Price	% ABS Difference
May 2002	167,000	
Jun 2002	180,000	7.49%

The list price for 5054 39th in June 2002 was $175,950 and although no concessions were directly reported, the marketing time was just 3 days and the difference between list price and sale price is presumed to be an add-on for seller paid closing costs, a common practice at the time. The house at 5017 39th was listed at $167,500 and sold for $167,000 after 34 days on the market. Again, there was no discernable difference between these houses in quality and condition.

It is also worth noting that there were five sales of this floor plan from April 2002 to June of 2002, ranging from $162,000 to $180,000. All five prices were different. The biggest difference between any two was 4.11%, but the difference between low and high was10.53%.

Date	Price	% ABS Difference
Apr 2002	162,000	
Apr 2002	165,000	1.83%
May 2002	167,000	1.20%
Apr 2002	174,000	4.11%
Jun 2002	180,000	3.39%

Additional Observations on Prices Paid

We also saw a two-month differential in 2000 of $145,000 and $158,750 (9.05%), and some same month differentials that were quite narrow; January 2003 at 2.25% and March 1997 at 1.57%.

There are also clusters of sales, particularly when the houses were being sold new from the builder. As expected, prices tend to be within a narrow range at this point. There were eight sales (closings) of this floor plan in the three-month period of October 1992 through December 1992 ranging from $105,950 to $109,950 (3.71% difference). We do know that the builder was not offering upgrade packages at the time, so the price differences may be attributable to either the date of purchase contract, builder-paid closing costs or possibly lot premiums. By May 1993, these floor plans were selling for $112,950.

There were also other periods when prices stayed within very narrow ranges (2% to 5%) and a few same month sales at identical prices.

Homes offered new by the builder trade in a narrow range because the builder is selling inventory. Pricing consistency is an essential part of a successful marketing strategy for new home sales. As expected, variance became wider upon resale.

Additional studies in different communities, including both detached single family and condominium units for sales in 2014 reveals a similar pattern, with a median sale price variance of about 8% overall.

Finally, when relaxing the search criteria just a little more, looking at homes between 1800 and 1899 square feet, and built from 1995 to 2000, sold between June and September of 2014 in one zip code (98422) we find three sales from $320,000 to $325,000, a very narrow 1.55% spread. Two are in the same subdivision and report equal closing prices of $325,000, however one was an all cash sale with no concessions, while the other was financed and the seller paid 2% ($6,500) in buyer closing costs, taking the net down to $318,500.

Model-Match Home Prices from Appraisal Reports

An analysis of 7,649 appraisal reports revealed 40 appraisals of single family homes in which all of the sold comparable sales were the same size and age as the subject property – homes that are model-matched to the subject. Of those 40 appraisals, 24 were found to have arm's length sales (rather than REO properties) as comparable sales that could be used to make reasonable price comparisons.

While it is probable that some of the variance in prices paid for these otherwise nearly identical homes may be attributable to things like condition, remodeling or location, because each of the comparable sales were nearly identical homes, certainly some of the variance in prices paid is simply a lack of precision in market pricing and market demand.

In this sample, the lowest variation among model match sales was 0.67% and the highest variation was 22.22%. The average variation was 9.26%. This is consistent with the results of property pairs analyzed and presented above.

Simultaneous Multiple Offers

In real estate markets with low inventory and high demand, a phenomenon occurs where multiple purchase offers are solicited and received simultaneously, often with escalation clauses. The property seller is in the driver's seat and seeks the "highest and best" offer in these bidding wars. However, the highest offer is not always the best offer and about half of all successful bidders in these situations pay "all cash". These all cash offers are not subject to obtaining a mortgage, and therefore, also not subject to an appraisal. Many sellers will also put weight on offers that waive home inspection contingencies and otherwise demonstrate an ability to move quickly to closing.

There are two key things we can learn from the phenomenon of multiple offers. First, we end up with several data points illustrating someone's belief of the market value of the property. The seller has a number which is the list price – presumably an offer at list price would be accepted in nearly every case – and we have the various "walk-away" prices of each of the potential buyers. Each party submitting an offer has a price ceiling above which they drop out of the bidding. Clearly, only one buyer can close so the buyer with the highest and best offer typically becomes the new owner. As noted previously, the highest offer is not always seen as the best offer, but in most cases, the best offer is very close to the highest offer when higher offers are refused.

The second and perhaps more important lesson of multiple offers is that the price paid represents the *highest* probable price rather than the *most* probable price, a direct contradiction with the market value definition used when financing from a regulated financial institution is required to close. Again, we noted previously that about half of "highest and best" offers are all-cash without financing requirements, but that also means that about half of all "highest and best" offers do require financing, and therefore require an appraisal. How does the concept of *most* probable price square to the offer that represents the *highest* probable price?

Specific data for multiple offer situations has been more difficult to obtain than other transaction data. In the cases where specific data was obtained, a range of perceived values of up to 17% was seen from list price to selling price, and about 8.5% between "walk-away" prices offered by different prospective buyers.

Part II Conclusion

In this brief study, the houses are as close to homogenous as residential real estate gets. While only a subset of transactions was calculated, we see a wide range of price differentials, including same price (0.00% difference) up to nearly 15% difference within one month; very few 0.00% observations could be found.

Given the extremely high degree of similarity from one property to another in the primary data, we conclude that a purchase price variance of up to 10% should be expected when all other factors, including buyer ability to pay and overall motivation to buy are otherwise the same. Since the degree of property similarity in this study is rarely the case in the broader market, we should not be surprised by wider price variations in transactions for generally similar homes.

Part III: A Proposed Solution

It is clearly established that there is variance in purchase prices, and variance in appraisals is also very well documented. The data indicate that appraised values have a greater variance than actual sale prices.

Part of the science of appraising is quantifying differences in transactions. Skilled appraisers are expected to "tease" adjustments out of the data with a degree of precision and accuracy beyond that which a buyer has the consciousness to employ in their decision making process. Home buying and selling is a very personal and emotional process. And, buyers buy whole houses; they don't negotiate the price on a component-by-component basis.

Part of the problem and a large part of the reason that appraisal error is both large and upwardly biased is that very few residential appraisals today provide any support at all for the adjustments. Eugene Pasymowski stated in a 2007 paper[vi] that "Unfortunately, in most instances real estate appraisers make subjective, anecdotal, arbitrary, and unscientific 'adjustments' to comparable sales market data without objective market-based support."

This highlights a large part of the problem, and while correcting this problem would contribute to more precision in residential valuations it is only part of the solution.

The Future of Residential Valuation

Once we accept that the current methods and techniques for developing a residential appraisal are outmoded and imprecise, we can begin to develop methods and techniques for developing residential valuations that are meaningful, and ultimately, more precise than market prices themselves.

A detailed discussion of how to produce reliable, more precise residential valuations while simultaneously reducing the time and cost of developing residential valuations needs to take place within the valuation community. The time for that discussion has arrived and the urgency is clear.

Critical changes that not only improve the valuation process, but also restore the valuation community to professional status are within reach. The science of appraisal has advanced in recent years, advancing the art appraisal lies in the adoption of the advanced science.

The Approaches to Value

Historically, residential appraisals employed the three broadly used approaches to value: Sales Comparison, Replacement Cost and Income. Over the years Replacement Cost and Income have gone by the wayside, leaving only the Sales Comparison Approach, which in fact is a price estimate rather than a value opinion. Therefore, residential appraisals today are not even valuations; they are simply price estimates.

In order to restore credibility to the residential valuation process, all three approaches to value need to be developed and reported in nearly every assignment. Each of the approaches needs to be properly reconciled into a value conclusion by the appraiser.

But it cannot stop there. As noted, there is almost never support for adjustments to comparable sales. Objective market-based support for every adjustment should be developed and presented in every assignment. As noted previously, the data is abundant and the tools needed to conduct meaningful analysis are inexpensive and readily available at the desktop of every valuation professional.

Further, on those rare occasions when a replacement cost is shown in the report, there is no support for land/site value, and the cost figures shown cannot be replicated – they are simply guesses with no supported basis. Reliable construction cost data is also readily available and essential to a credible valuation process. Whether from actual sales, residual approaches, allocation or other recognized methods, support for land/site value should be included in every residential appraisal.

In the big data world we now live in, both the data and the technology to process and analyze the data are available at the desktop of every valuation practitioner in the country. Many of the tools are free, and so is a great deal of data. That we fail to use these resources is unfortunate.

Residential appraisers should be analyzing dozens or even hundreds of sales in every assignment, not just the three to five sales most commonly shown in today's reports[5]. Additional statistical analysis – regression analysis, paired sales, building and land residuals – to support adjustments and isolate contributory value for components of the property, support for site value, depreciation and market trends can and should be part of every residential valuation. Sale and re-sale analysis, absorption rates, turnover ratios and more can be easily developed and analyzed and considered in reconciling the final opinion of value. Summaries of each can and should be included in every residential valuation report.

The Value Opinion: Using a Range

Value opinions have historically been expressed as a single point as of a particular date, e.g. $200,000 as of January 1, 2014. Part of the reason for single-point conclusions is the demand for a definitive number by mortgage investors. More specifically, single-point conclusions take any guesswork, and ultimately any decision making responsibility around the value out of the hands of the user of the appraisal.

In mortgage lending, when the value exceeds the contract price (or the needed threshold in a refinance transaction) everyone is happy and at least from a valuation perspective, the deal can move forward. When the value opinion is lower than necessary to support the transaction, all eyes go back to the appraiser.

The most responsible solution is for the appraiser to conclude to a range, say 10% given the data we observed in purchase price variance. In other words, the appraised value of $200,000 should be expressed as $190,000 to $210,000 with a stated confidence level. The user (underwriter in a mortgage lending situation) can then make a lending decision that accounts for the specific circumstance of the applicant, including things like credit rating, assets, income and so forth. The user/underwriter can determine where within the probable range of values they are most comfortable underwriting the loan based on all factors involved in the lending decision.

Part III Conclusion

Residential valuations can and should be more precise than actual sale prices in the market. However, single-point valuations imply a degree of precision that is impossible to achieve with reasonable certainty. Valuation professionals with proper education, training and tools can employ modern methods and techniques, and leverage Big Data and robust technologies to produce credible, reliable valuations. Taking advantage of modern tools and broadly available data will result in producing residential valuations that more effectively remove bias, increase precision and become trusted by clients and the public alike.

[5] The average number of comparable sales in 30,295 appraisals in this study was 3.77 per appraisal report.

Conclusion

Statistically, random variance in sale prices should not favor error rates above or below the elusive "true market value" being sought. About the same number of transactions should be above market value as below. Price variances must be expected because ultimately, there really is no one true market value number to the exclusion of all other numbers.

In practice we find that appraised values are above the transaction price far more often than below. Lenders readily accept a variance between sale price and appraised value as long as the appraised value is higher than the sale price. When the appraised value is less than the sale price – even if only by a single dollar – the appraiser will be under a lot of pressure from all parties with a vested interest in the transaction to reconsider the value and bring it into line with the purchase price.

Max Kummerow summed it up well in his 2009 paper *Error Trade-offs in Selection of Comparable Sales for Residential Valuations* with his statement "most academic researchers are well aware that observed prices are events from probability distributions of possible prices, but many practitioners still approach appraisal as if they were searching for the one true price, giving too little attention to variation in prices and errors in price estimates."

The result of this practice is clear in the data. Rather than reflecting the market, appraisers conclude values at or above the purchase price nearly 90% of the time. Until the mortgage lending community adapts to completing mortgage loans using valuations that conclude to a range, or perhaps to a single point opinion but with a confidence rating for that single point opinion, we should expect to see a continuance of the practice of over-valuation.

In the meantime, the wisdom of the market appears to provide a clearer indication of a true market value range than professional appraisers.

A key lesson from the last decade is that as goes the US residential real estate market, so goes everything else. In the first quarter of 2009[6] the aggregate value of the US housing market was estimated at $22.2 trillion[vii] (nearly double the estimated aggregate value of the US commercial real estate market at that time of $11.5 trillion[viii] and larger than the US stock market, estimated by the World Bank in 2010 to be $17.1 trillion), making it the largest single asset class in the world. Modernizing the field of residential valuation is vital to the US and global economies. The data and the tools are here today; failure to embrace them could prove to be a costly mistake.

[6] The first quarter of 2009 is the most recent point where aggregate data for both residential and commercial real estate could be found.

About Platinum Data

Platinum Data provides technologies that help mortgage lenders, servicers, investors and appraisal management companies ensure quality, value collateral, and identify and manage collateral risk. Its online platform and analytical tools help hundreds of companies to perform due diligence, prevent buybacks and protect billions of dollars in assets across the United States. Founded in 2002, Platinum Data Solutions is based in Aliso Viejo, California. Visit PlatinumData.com, follow @Platinum_Data or email info@PlatinumData.com to learn more.

About the Author

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End Notes

[i] 12 U.S.C. 1818, 1819 ["Seventh" and "Tenth"] and title XI of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 ("FIRREA") (Pub. L. 101--73, 103 Stat. 183, 12 U.S.C. 3331 et seq. (1989)); § 323.2, Definitions.

[ii] Collateral Scoring and Credit Risk Implications, CoreLogic, undated

[iii] National Mortgage News, Tom Showalter, March 21, 2014,

[iv] Platinum Data Solutions, RealView submissions, June 2013-October 2014

[v] Accuracy of Appraisals is Spotty, Study Says, KC Conway, CRE, New York Times, May 8, 2012

[vi] How to Discredit Most Real Estate Appraisals in One Minute, Eugene Pasymowski, 2007

[vii] FHFA based price index, Lincoln Institute of Land Policy c/o Morris Davis, University of Wisconsin

[viii] CoStar: Slicing, Dicing and Scoping the Size of the U.S. Commercial Real Estate Market, April 2010