REENGINEERING THE APPRAISAL: A RETURN TO MARKET FUNDAMENTALS

Key Points In This Paper:

• Lending, including home lending, is leveraged, pro-cyclical, and prone to alternating periods of boom and bust.

• Current methodologies for appraising mortgage properties are deficient in that they do not consider market fundamentals in generating property values.

• Policy reforms need to be passed to mandate the reengineering of current systems of determining home prices to prevent a recurrence of the financial crisis.

• Methodologies such as market value-to-replacement cost, market value-to-rent ratio and home prices-to-median income ratio can be used to generate stabilized and sustainable market values.

Introduction

IN 2009 THE COLLATERAL RISK NETWORK issued a white paper entitled “Reengineering the Appraisal Process”. This white paper had key observations that have received little attention from policy makers:

“What role did appraisers play in the housing crisis? Appraisers didn’t directly cause values to decline. They weren’t the catalyst for homeowners to cease paying their mortgage. But they did help create fictitious equity and were complicit in facilitating trillions of dollars in loans that never should have been made. There are varying degrees of valuation inflation performed by appraisers. On the lighter side, there was just the gray area where appraisers hit the highest possible value as opposed to the most probable value. On the dark side, there was blatant fraud. And then, somewhere in the mix, was the failure to recognize an overheated market and report trends and risk to their clients. If we had credibly valued the underlying collateral, I would submit that there would be an active
MBS market. The Mortgage Backed Security market is paralyzed, in part, because no one knows what the underlying collateral is worth”.

Little has changed since those observations were made in 2009. Appraisal methodology for valuing single-family residential properties continues to rely on comparable sales and exclude any rigorous analysis of fundamentals. This was not always the case. When the Federal Housing Administration (FHA) and the Veteran's Administration (VA) led the development of modern appraisal practice back in the 1930s and 1940s, the appraiser’s role was to determine a property’s value. This was defined as “a price at which a purchaser is warranted in paying for a property, rather than the price at which the property may be sold”. The job of the appraiser was to determine the amount of debt that could be safely lent against a property without impairing the property’s ability to earn its way out of the debt.

Compounding the problem was the increasing use of low or no down payments combined with slowly amortizing thirty-year term loans. Down payments of three percent or less started becoming more prevalent in the mid-1990s as a result of government policies. By 2006 the National Association of Realtors would report that 45% and 19% of first-time buyers and repeat buyers respectively nationwide put down no money, up from virtually zero in 1980.

Over time the appraiser’s job was seen as merely confirming the price at which the property may be sold without taking market fundamentals into consideration. This is the equivalent of asking a stock analyst to evaluate a stock being bought with no money down and he reports: “Yesterday the stock sold for $14.43, therefore its market value is $14.43.” Such a report is both precisely correct and worthless.

**A Return To Fundamental Is Needed Because Real Estate Is Cyclical**

The importance of the property valuation exercise is compounded by the fact that real estate values tend to be cyclical and generally follow the “boom/bust” business cycle. Except for the recent “Great Moderation”, over the last 60 years, real house prices have followed 10-year cycles. The Great Moderation’s 17-year cycle resulted in a 2.3 standard deviations from the norm or the 98th percentile.

This extended boom cycle led to a classic asset bubble in that a bubble occurs when current home prices (or price of any asset) deviate substantially from its fundamental value.

As Charles Kindleberger observes, a bubble is characterized by:

“A sharp rise in the price of an asset or range of assets is a continuous process, with the initial rise generating expectations of further rises and attracting new buyers, generally speculators interested in profits from trading rather than its use or earnings capacity. The risk, is then followed by a reversal of expectations and a sharp decline in prices, often resulting in severe financial crisis—in short, a bubble burst”.

Past drivers of the real estate cycle have been:

- Demand created by population growth and family formation.
- Growth in income and jobs.
- Natural lags – demand tends to grow faster than supply.

As Kindleberger pointed out, rising prices fuel an expectation of further price increases regardless of fundamentals. Others call this irrational exuberance. When combined with pro-cyclical government policies, the boom phase lengthens and the bust phase deepens.

**The Role of Pro-Cyclical Policies**

Pro-cyclical banking policies support or rein-
Risk Housing

force the current phase of a cycle be it up or down. Examples include:

- Underwriting standards and loan products that tend to loosen during a boom and tighten during a bust.

- Loan loss reserve provisioning tied to loan delinquencies and charge-offs. Minimal loss reserves are built up during a boom since delinquencies and charge-offs are suppressed by rising prices and greater credit availability.

- Deposit insurance premiums reduction during boom periods because bank failures are suppressed.

- Fair value accounting rules requiring that illiquid assets be marked-to-market based on current market value. During bubbles, credit spreads tighten and higher risk assets gain value thus allowing mark-to-market gains to feed the expansion of bubbles. Consequently, more leverage increases demand for risky assets, further narrowing spreads. For example, in the United States, relaxation in lending standards was higher in areas with faster rates of house price appreciation.

All these highly pro-cyclical factors created a positive feedback leading to an increase in house prices.

Whether driven by demand momentum or the effects of governmental policies or institutional changes, these pro-cyclical factors can have a collateral feedback effect because once collateral values increase, lenders are willing to lend even more to households, feeding the housing price boom. Experience demonstrates that a high percentage of the correction needed to revert to the mean is the result of price drops, not increasing rents, rising incomes, or higher replacement costs.

United States appraisal methodology was largely designed by Fannie Mae and Freddie Mac and is entirely pro-cyclical. If prices are rising, market values are rising, if prices are falling, market values are falling. Between new sales and cash out refinances, a large portion of the market (including illiquid refinances) is constantly being “marked-to-market” at today’s market value. In the lead up to the mortgage meltdown, appraisal methodology had but one input leading to one output—boom induced comparable sales prices confirming a boom induced value for the subject property.

The Difficulty of Predicting Bursts

It is impossible to predict when a real estate peak will be reached, the only observation that can be made from an era of rising house prices is that the likelihood of a reversion to the mean is increasing. Common characteristics of a bubble include:

i. Market value-to-rent and market value-to-replacement cost deviations from mean are indicators;

ii. Real estate valuations are two standard deviations above the long-term trend;
iii. Median home sales price-to-median household income is also an indicator;

iv. Above trend credit growth which tends to perpetuate demand growth;

v. Appearance or reappearance of new or more leveraged forms of lending;

vi. Historically high levels of new home construction;

vii. Increasing speculative purchases that ignore fundamentals like rents versus expenses;

viii. Increasing levels of mortgage or home purchase-related fraud;

ix. Rising early payment defaults.

**The Solution Is Determining A Stabilized Or Sustainable Value Based On Market Fundamentals.**

While a bubble’s deviation from fundamental value relationships is difficult to observe, certain benchmarks can provide valuable insights. These benchmarks include:

- Market value-to-replacement cost.
- Market value-to-rent ratio.
- Home price-to-median income ratio.

### A. Market Value-To-Replacement Cost

The long-term relationship between market value-to-replacement cost is a fundamental determinant of stabilized value. Without the rigor of the principle of replacement, sale prices become seriously out of line with replacement costs. This requires tracking, evaluating, and stabilizing this relationship at a local market level.

The estimated cost of replacement fixes an upper limit on valuations. While the relationship between sale prices and construction replacement costs (excluding land) can deviate over time, this relationship is fairly consistent - meaning that it reverts to the mean. When a boom induced deviation in the market value-to-replacement cost ratio occurs, it is followed by reversion to the mean. After a boom induced deviation, the majority of a reversion

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**Chart 1: Ratio of Real Home Price Index Divided By Real Building Cost Index**

This trend can deviate widely on a market area basis. Charts 2-4 demonstrate a classic boom-bust (Las Vegas), a market where the relationship remained in synch (Dallas), and a market that continues to display a substantial deviation (Boston).
Chart 2: Las Vegas

- Marshall-Swift construction cost index (1978=100)
- FHFA home price index (1978=100)

Chart 3: Dallas

- Marshall-Swift construction cost index (1978=100)
- FHFA home price index (1978=100)
comes from house price declines as new houses are constructed, not replacement cost declines (unless the boom is followed by a broad based deflationary period).

On a national indexed basis, the ratio of house prices to replacement costs reverted to its long-run average three times between the early 1970s and the mid-1990s (1973-74, 1983, and 1994). In the early- to mid-2000s, the ratio rose dramatically above the long-run average and since 2005-2006 has been reverting to this average as can be seen in chart 1 above.

**B. Market Value-To-Rent Ratio**

The capacity to generate rental income is a fundamental determinant of stabilized value. If this relationship is ignored, sales prices can become seriously out of line with rents. This requires tracking, evaluating, and stabilizing this relationship at a local market level. The fundamental value of a house is the present value of the future housing service cash flows (in lieu of rents) that it provides to the marginal buyer. In a well-functioning market, the value of the housing service flow should be approximated by the rental value of the house.

The price of housing is determined by supply and demand. All things being equal, rising population, income growth, supply limitations, and geographic desirability affect rents and home prices in a similar manner. The direct substitution for owning a home is renting and the market-value-to-rent ratio measures this relationship. As standards loosen during a boom, marginal households switch from renting to owning, driving up home prices and reducing rental demand and perhaps even rents. By decoupling market values from rents, market values greatly exceed economic value. As we have recently seen, this deviation may be exacerbated by high levels of speculative investing – either by disclosed investors or through fraud. The switch from an investment based on rental return fundamentals, whether to landlords or to owner-occupants substituting owning for renting, to one based on speculation can help turn a boom into a bubble.

**Chart 4: Boston**

Source for Las Vegas, Dallas, and Boston: Marshall & Swift/Boeckh’s Residential Construction Cost Index provided to author by Marshall & Swift and FHFA home price index.
**RiskHousing**

While the relationship between price and rent can deviate, over time this relationship is fairly consistent and tends to revert to its historical mean. It also automatically corrects for normal inflationary distortions since rents are subject to more or less the same inflationary pressures as home prices. Ultimately, rents determine value. As value returns to the norm, there is a rush to the exits, which forces liquidation at fire sale prices and/or default, creating a vicious cycle. Since cash flow was initially ignored, market prices may even fall below long-term realizable economic value through the fire-sale process. Chart 5, below, shows the boom and bust in the rent-to-price ratio since 1983, while Table 1 suggests the correlation between very high rent/price ratios in 2005 and declines in home

![Chart 5: Price-to-Rent: Case-Shiller and CoreLogic House Prices](http://www.calculatedriskblog.com/)

**TABLE 1: Annual Rent-To-Sales Price and Home Price Index (HPI) Change Table.**

<table>
<thead>
<tr>
<th>MSA</th>
<th>San Mateo (San Francisco)</th>
<th>Orange County (Santa Anna)</th>
<th>LA</th>
<th>Boston</th>
<th>San Bernardino CA</th>
<th>Chicago</th>
<th>New Orleans</th>
<th>Dallas</th>
<th>ATL</th>
<th>IND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Rent/Sales Price (2005)*</td>
<td>3.1%</td>
<td>4.1%</td>
<td>4.6%</td>
<td>4.9%</td>
<td>5.0%</td>
<td>6.1%</td>
<td>7.6%</td>
<td>9.3%</td>
<td>9.5%</td>
<td>10.4%</td>
</tr>
<tr>
<td>HPI Change**</td>
<td>-21%</td>
<td>-31%</td>
<td>-32%</td>
<td>-14%</td>
<td>-47%</td>
<td>-22%</td>
<td>-5%</td>
<td>1%</td>
<td>-18%</td>
<td>-3%</td>
</tr>
</tbody>
</table>

*Smith & Smith, 2006, “Bubble, Bubble, Where’s the Housing Bubble?”

prices from 2006-2011. When a deviation in the ratio occurs the majority of the movement of the price-rent ratio comes from future (price appreciation-based) returns, not rental growth rates. This is not comforting as it implies that price-rent ratios change because prices are expected to change in the future, and seemingly out of proportion to changes in rental values. If the ratio is to return to its average level, it will probably do so through slower house price appreciation.”

C. Using Other Fundamentals To Estimate Overvaluation

IHS Global Insight’s Over/Under Valuation Index (formerly Nat City Index) demonstrates the correlation between fundamentals and home prices at the MSA level using house prices, interest rates, household incomes, population densities, and any historical premiums or discounts over time.

For the 330 MSAs tracked by IHS Global Insight, overvaluation and price change was highly negatively correlated at -0.82, with higher valuations closely associated with larger price declines.

**TABLE 2: IHS Global Insight’s Over/Under Valuation Index**

<table>
<thead>
<tr>
<th>City</th>
<th>Over Valuation 2005 (Q4)</th>
<th>Price Change (%) 2005 to 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles, CA</td>
<td>55.9</td>
<td>-29.8</td>
</tr>
<tr>
<td>Sacramento, CA</td>
<td>54.5</td>
<td>-44.9</td>
</tr>
<tr>
<td>Miami, FL</td>
<td>49.4</td>
<td>-35.8</td>
</tr>
<tr>
<td>Oakland, CA</td>
<td>46.7</td>
<td>-39.9</td>
</tr>
<tr>
<td>San Jose, CA</td>
<td>41.6</td>
<td>-29.0</td>
</tr>
<tr>
<td>Phoenix, AZ</td>
<td>38.9</td>
<td>-39.5</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>38.3</td>
<td>-18.1</td>
</tr>
<tr>
<td>San Diego, CA</td>
<td>36.8</td>
<td>-31.5</td>
</tr>
<tr>
<td>Las Vegas, NV</td>
<td>35.3</td>
<td>-57.1</td>
</tr>
<tr>
<td>Detroit, MI</td>
<td>34.2</td>
<td>-36.6</td>
</tr>
</tbody>
</table>

Source: IHS Global Insight, House Prices in America: 4th Quarter 2009 Update

**Conclusion - Reengineering The Appraisal Process For the 21st Century By Returning To Fundamentals**

Lending, including home lending, is leveraged, pro-cyclical, and prone to alternating periods of boom and bust. The current real estate bust is the worst in over 75 years largely due to the substantial elimination of down payments and the expansion of other loose lending practices. A return to real estate valuations based on fundamentals principles would help prevent a recurrence. Recommendations for such an approach include the following:

- **a.** Market valuation using the comparable method sets the upper limit for mortgage lending value:
  - i. Report an estimated sales price range so as to eliminate the need to “hit” the sales price.
  - ii. Develop a more robust and transparent comparable selection process.
  - iii. Provide both a market value using the comparable method and a stabilized value that takes into account regional and local market conditions and fundamental relationships.
  - iv. Growing investor share (both known and unknown) and increasing fraud would be an indicator of growing speculative activity.

- **b.** A collateral expert at the lender should determine loan terms based on a review and analysis of market and stabilized values.

Only by taking steps such as these can property appraisals be returned to its core function; assisting lenders in determining the maximum amount that may be prudently lent on a property.