# RESIDENTIAL AVM VALIDATION SERVICES

**Thorough ▪ Clear ▪ Compliant**

## Overview

Five federal banking agencies including the FDIC, OCC, FRB, OTS and NCUA issued the *Interagency Appraisal and Evaluation Guidelines* in December of 2010 that prescribe the risk management practices and tools that regulated institutions must establish and use for real estate-related financial transactions.

The Guidelines reiterate support for the use of automated valuation models (AVMs) as long as they meet certain informational requirements, are consistent with safe and sound banking practices, produce a reasonable market value conclusion and are routinely tested. In the latter regard, the Guidelines are clear:

> *"An institution should establish standards and procedures for independent and ongoing monitoring and model validation, including the testing of multiple AVMs, to ensure that results are credible. An institution should be able to demonstrate that the depth and extent of its validation processes are consistent with the materiality of the risk and the complexity of the transaction…"*

Boxwood Means, Inc. has for many years conducted independent validation studies on behalf of a diverse group of U.S. commercial banks ranging from modest-sized institutions to the nation's largest mortgage lender. Our scope of testing may be narrowly confined to validating the output of individual AVM models on the one hand, or designing and evaluating the performance of complex AVM cascade systems on the other. Regardless, our studies are thorough, reliable and fully compliant with federal guidelines.

## Approach

We work closely with validation clients to ensure that our testing is suitable for the client's intended use of the AVM(s). Typically, we probe even deeper into the AVM's performance to allow a client to expand the model's use beyond the intended application – if desirable and providing that the results support such expansion.

Generally, our studies are statistical in nature and assess how well the AVM predicts actual sales prices. We develop, analyze and review a number of measures of the difference between sales prices and AVM valuations including but not limited to standard deviations, mean-squared errors, coefficients of dispersion, and the percentage of valuations falling within numerous benchmark metrics of accuracy (e.g., percentage of valuations falling with 10% of the sales price, percentage of over-valuations greater than 25%, etc.).

## Approach – Cont'd.

Such analyses of the distribution and central tendencies of the model's performance errors are typically augmented by stratifying the results by various client/lending geographies, pricing tiers, property types and confidence scores.

The comprehensiveness of any study largely depends on the wealth of available data. Harnessing the largest and most complete database of residential transactions available in the country, we routinely gather all transactions over the past nine months in counties targeted for testing. In the design of our studies, we are careful to arrange for "out-of-sample" tests that assure that AVM values obtained by the model provider are not influenced or contaminated by recorded sales prices during the period of analysis.

Boxwood's studies take the form of custom narrative analyses supplemented by tables and graphs. Our turnaround time from project inception to delivery of the client's report is roughly six weeks.

## About Us

Boxwood Means, Inc. is a Stamford, CT-based real estate research and consulting firm that provides market information, valuation analytics, risk monitoring and related analytical services to clients in the U.S. and Canada. Since 2003, we have furnished independent residential AVM validation studies to large and small institutions across the country.

Having developed and maintained a number of proprietary *commercial* AVMs over the years, Boxwood's parallel and "inside" knowledge about general residential model construction, confidence scores, model performance, and data sources and sampling among other facets of model building and maintenance have proven extremely valuable to clients in understanding how to capitalize on a model's strengths while managing its risks.

Client validation assignments are managed directly by Boxwood's principal and co-founder, Michaell Taylor, Ph.D., a veteran quantitative analyst with more than 20 years of industry experience.

## Contact Info

We welcome your inquiries about our AVM validation services or to discuss your model testing needs. Our contact information is below.

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