



ARE PROPERTIES EVER UNSUITABLE FOR AN AVM?

A White Paper about
Automated Valuation

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by Robert L. Walker

Note from the Author

This is the second in a series of white papers about VeroPRECISION, a superior new alternative to the traditional AVM cascade approach for equity lenders. The first white paper, entitled “Choosing AVM Accuracy and Suitability over the traditional AVM cascade,” addresses the notion that traditional cascade logic is about hit rate and not accuracy. Focusing on hit rate and relying on multiple AVMs to value properties that are inappropriate for AVM use results in a significant loss in valuation accuracy.

This second white paper entitled, “Are Properties Ever Unsuitable for an AVM?” focuses on properties that were deemed unsuitable for AVM use by VeroPRECISION. We valued 107 properties with five independent AVMs and assessed their accuracy in relation to recent appraisals (within plus or minus 10 percent (P10)) on the same properties. The results were eye-opening. Read on to learn more.

WHEN AN AVM ISN'T A SUITABLE VALUATION TOOL

Recently, Veros Real Estate Solutions employed its new VeroPRECISION decision engine to find properties in markets across the country that it determined were not suitable for AVM use. Subsequently we ran these properties through several AVM brands, including our own.

The results are compelling and clear: There are certain properties for which lenders should avoid using AVMs.

The results of this analysis are provided later in this white paper. But first, some background on AVMs as well as AVM cascades.

For many years, equity lenders, among others, have used AVMs and AVM cascades to value properties. Clearly, AVMs have served the equity lending community well, saving them a great deal of time and money compared to other forms of valuation or appraisal.

The notion of the AVM cascade has also served the industry well by generating geographic coverage and reasonable levels of valuation accuracy. At the most basic level, an AVM cascade is a series of county level look-up tables. These county level look-up tables can come from a variety of sources. A lender, if they have the time and resources, can test the AVMs, set up and maintain the look-up tables themselves. Or, a lender can license model preference tables that are customized by AVM testing firms for that lender's risk tolerance. Additionally, cascade logic is available from most of the well-known AVM providers and AVM resellers. As a rule, most equity lenders just cycle through the relevant cascade searching for valuation coverage and assume valuation accuracy comes as part of the package.

Wouldn't it be nice if it were that simple? Unfortunately, it is not.

First, lenders need to be more aware of how their cascade was constructed. Was it developed based upon exhaustive testing, or is it merely an array of in-house brands? In any event, lenders are strongly advised to view and understand the underpinnings of their AVM cascade of choice. Asking to view their cascade provider's most recent due diligence report is a good place to start. If there is no readily available cascade testing or due diligence report, then you should view that as a red flag.

Let's assume that you are using cascade logic that has a bunch of empirical testing associated with it. The next question to ask is, "What are the AVM results being compared to?" Another way of stating this is, "Are the AVMs being compared to 'blind' purchase prices or to recent appraised values, or to some combination of both?" Since most users of AVMs are doing so for equity loans, then most of your testing should have the AVM result being compared to a recent appraisal (from a non-purchase transaction) on the same property. Clearly, the AVM is a fast and inexpensive proxy for a complete appraisal. Therefore, it makes sense to test it as such. For a variety of reasons, beyond the scope of this white paper, AVM testing results on purchase transactions are much stronger than when the AVMs are being compared to appraised values. Ideally, you want your testing methodology to be identical to your production environment. The failure to synch your testing and production environments can cause a great deal of angst among risk managers, since they will not be able to truly understand the valuation risk that is being undertaken by the bank. If this straightforward logic makes sense to you, just be prepared for the unfortunate reality that not everybody performs their AVM testing this way. In fact, you may find that your friendly regulator may still insist that you engage in the "blind" purchase testing approach. Full disclosure: Individual regulators and bank examiners may use different approaches.

Second, make sure your cascade developer employs what I call "residual analysis" in testing your AVMs for the model preference table. Some cascade developers use a simplistic ranking analysis to determine the 1st, 2nd and 3rd ranked AVMs in the cascade. Residual analysis, by contrast, contemplates how the AVMs will be used in production. If AVM#1 is the best performing AVM in County X, then the remaining AVMs are tested for valuation accuracy vs. the properties that AVM#1 did not value for whatever reason. We call this residual analysis because AVMs are tested only on those properties that remain (aka residual properties) that have not been valued in the test data set. When this kind of testing is employed, the lender needs to establish the minimum valuation accuracy criteria for adding an incremental AVM to the cascade logic. Our testing shows that when an AVM is added to a cascade, when being tested versus appraised values, the accuracy level of the incremental AVM is typically less than 50% P10, or plus or minus 10 percent of the estimated value. Users of traditional cascades should be shocked by this finding.

UNDERSTANDING THE NATURE OF NON-SUITABLE PROPERTIES.

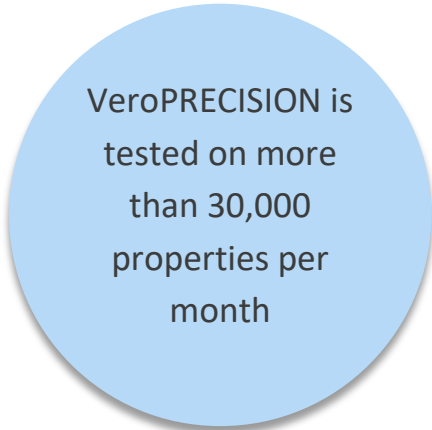
Because the VeroPRECISION decision engine has something that no other AVM or AVM derivative has -- a "suitability engine" -- it is able to determine property-level suitability. It then immediately sends properties deemed "suitable" to top-rated AVM providers and routes the "unsuitable" properties away from AVM consideration and instead to another valuation tool of the lender's choice.

This is a novel concept, correct? **What AVM technology tells you, “Don’t use an AVM on this property,” and does not charge you for this information? The answer is VeroPRECISION!**

VeroPRECISION is the only valuation decision engine that does not use county look-up tables. Instead, VeroPRECISION evaluates individual properties one at a time to make a binary decision. Is the subject property suitable for AVM analysis, yes or no? What does it mean for a property to be suitable for AVM use?

AVMs are voracious users of data. The ability to consume and utilize such a high quantity of data so quickly is one of the AVM’s biggest assets. In general, the more data that is available about the subject property in terms of physical characteristics, recent sales and MLS listing history, the more suited for AVM analysis the property becomes. Having similar data on surrounding properties is also extremely useful. The major challenge to this scenario comes when one of two things happens. First, it is possible that in a given property situation there is a dearth of data on the subject property and recent comparable sales for some unknown reason. Alternatively, the subject property could be a very unique property for its immediate area. Both of these situations can cause an AVM to have valuation challenges, not unlike all other forms of property valuations, and thus have a greater probability of producing an erroneous valuation estimate.

VeroPRECISION is tested on more than 30,000 properties per month in our continuous due diligence process. To illustrate the predictive valuation power of the VeroPRECISION suitability engine, we took 107 non-suitable properties and valued them with five competitive AVMs (Veros plus four more) to see the level of accuracy or non-accuracy AVMs can achieve when subjected to properties that VeroPRECISION determined were unsuitable for AVM analysis.



VeroPRECISION is tested on more than 30,000 properties per month

When compared to the recent non-purchase appraisal benchmark values, here are the results:

Brand	P10*	MDAE (median absolute error)
AVM1	43%	16.9%
AVM2	51%	12.6%
AVM3	43%	17.9%
AVM4	40%	20.8%
AVM5	50%	20.1%
AVG	45%	17.6%

*P10 represents the percentage of observations within plus or minus 10% of a recent appraised value.

This data illustrates several key facts about the VeroPRECISION suitability decision engine.

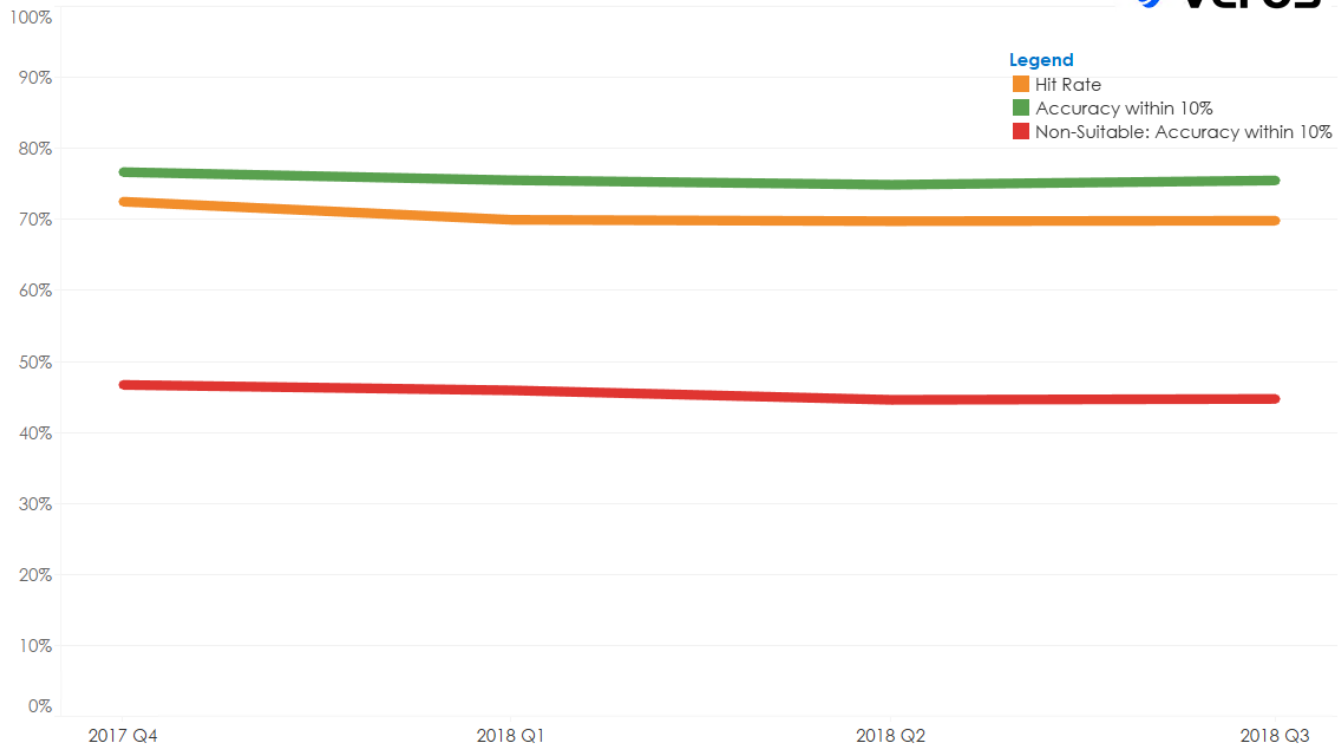
1. VeroPRECISION finds the tough-to-value properties and channels them away from AVM utilization at no cost to the end user. Would you knowingly use an AVM on a set of properties that had such poor test results? Absolutely not. Instead, VeroPRECISION will automatically send these properties to another valuation tool of the lender's choice. This escalation process is similar to the AMCs' practice of routing appraisal assignments to the appropriate appraiser based upon the nature of the property and corresponding appraiser skillset.
2. This data illustrates the concept of adverse selection in AVMs. VeroPRECISION has elected not to provide a valuation on these properties, yet in a cascade environment, these properties may be valued by the second or third AVM in the cascade. It should also be noted that, in some cases the second or third AVM choices may be held back as the result of confidence score cutoffs. For this to take place confidence score cutoffs must have been previously tested, determined and implemented. Also, remember confidence score cutoffs often come with fees. Clearly, this data illustrates the potential valuation dangers surrounding cascade logic with the second- and/or third-tier AVMs.
3. VeroPRECISION will provide the best AVM end-user experience possible by valuing the straightforward, "easy" properties and routing the more difficult properties to other valuation experts. We can all visualize properties that appeared straightforward to value, but were then ultimately valued erroneously by an AVM. (Typically, these are the AVM values provided from a lower position within a cascade.) VeroPRECISION will not completely eliminate this phenomenon, just like all other valuation approaches on occasion provide unfitting valuation estimates. But VeroPRECISION will surely mitigate these improper valuations a great deal.

TO AVOID "UNSUITABLE-FOR-AVM" PROPERTIES ALTOGETHER, USE VEROPRECISION.

As stated previously, VeroPRECISION provides a vastly superior AVM user experience by only providing values for properties that are deemed suitable for AVM use. And again, there is no charge for the notification that another valuation approach is suggested. **The customer is only charged when VeroPRECISION forwards a suitable property on for AVM use.**

The chart below shows that, based upon a year of high property volume testing, VeroPRECISION consistently produced 75%+ P10 accuracy when compared to appraised values. This kind of consistent valuation accuracy is not available with any single AVM solution today.

VeroPRECISION Accuracy by Quarter - National



Summary:

1. VeroPRECISION uses the notion of AVM suitability, before ever running an AVM, to determine if the subject property is a good candidate for AVM analysis. If VeroPRECISION determines the property is not well-suited for an AVM, this notification is provided back to the user FREE of charge.
2. VeroPRECISION takes properties that are strong AVM candidates and produces superior valuation accuracy by running two top-tier AVMs simultaneously on the subject property and selecting the value that is determined to be the most accurate for that property. VeroPRECISION does not contemplate the use of “old school” county level look-up tables to determine the property value.
3. VeroPRECISION helps users avoid running AVMs on properties that are probably inappropriate for AVM use. To support that notion, we ran five independent AVMs on 107 “unsuitable-for-AVM” properties. The results clearly showed that unsuitable properties were properties characterized by sub-standard levels of AVM accuracy. With VeroPRECISION, these “unsuitable” properties are routed immediately to the end-users’ valuation product(s) of choice, including but not limited to desktop valuations, drive-by appraisals and the like.

ABOUT THE AUTHOR

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With more than 20 years in the analytics and automated valuation space for residential real estate, Robert Walker has built a solid reputation for product innovation, providing market insight, and anticipating customer needs. In his current role of Vice President of Sales for Veros, Mr. Walker is responsible for leading the company's sales team and market strategy and for driving innovation and creating a disruptive force in the market. Mr. Walker holds a BS in Economics from Vanderbilt University and received an MBA from Columbia University Graduate School of Business. He also has the rare honor of holding both the Certified Mortgage Banker® (CMB®) and the Certified Mortgage Technologist (CMT) Designations. Mr. Walker may be reached at **866.458.3767** or **RWalker@veros.com**.

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