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## **Big Data: We must analyze and understand primary data - by Bill Pastuszek**

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Big data is with us, all around us. We are inundated by surveys, studies, charts and graphs, that allow appraisers to understand – or misunderstand – the characteristics of the varied real estate markets in which appraisers work.

Sometimes it feels like going to a dinner and having nothing but little plates. One can eat and eat, pay a lot of money, but leave the table feeling vaguely unsatisfied.

In the face of all this data, appraisers need to question in order to understand what big data does and does not explain. How was this data generated? What does the data mean? Where does it come from? How do we apply it to the subject of the assignment?

The Dictionary of Real Estate Appraisal defined Market Analysis as follows: “A process for examining the demand for and supply of a property type and the geographic market area for that property type.” Market analysis also provides a basis for determining the highest and best use of a property, and where within the larger market the property lies in the minds of participants. Market analysis informs everything from the scope of work to final, credible results, and should influence every analytical decision and conclusion made in a report. Market analysis is the foundation of a credible appraisal report. So, it is essential to understand the market data we use, and where it came from.

Market analysis breaks down into fundamental analysis based on primary data, and inferred analysis based on secondary data.

Fundamental analysis is based on primary data and can include personal confirmation and verification of market data such as comparable sales, income, and cost data. In the best case, fundamental analysis provides highly reliable results, but is often impractical in an assignment. Inferred analysis relies more heavily on secondary data.

Part of the appraiser's scope of work decision is to make a determination as to when to rely on secondary data and how to rely upon it. An appraiser needs to have a reasonable basis for relying on information not directly developed. A good appraisal should have a bit of both.

Much of the secondary information appraisers rely on comes from the many of data services that produces an abundance of survey results, metrics, and indicators. The key, then, is to understand how Big Data arrives at its conclusions.

Let's take for example how rents are quoted. Typically, office rents are quoted on a gross basis, while retail rents are quoted on a triple net basis. If the subject of the appraisal has a different rent structure from the data being referenced, then some commentary and analysis is indicated.

Or consider capitalization rates. Yes, let's consider cap rates. Leased fee cap rates often become part of the mix in a published "average" cap rate survey. Inclusion of these rates for a non-leased fee property may create difficulties in arriving at a supportable cap rate. For example, a day care that is not leased to a national/super-regional tenant is likely to have a different buyer and market appeal than one that is.

Also, many times the cap rates for a particular property type get tossed into the same "average" basket. To be sure, some data services do refine their cap rates in terms of investment quality, location, size, etc., which is useful. Appraisers need to distinguish how Big Data is, and is not, organized; and what it is, and is not, claiming to be.

Another potential interpretive pitfall is when services "imply" or "project" cap rates for properties. These are not cap rates found in nature, and, unless an analyst is aware of this practice, relying on the results generated in this manner can be problematic.

A final note on cap rates. Care should be taken to understand if the cap rate is based on actual net operating income, and, if so, are management and reserves included. Cap rates can be based on trailing I/E, pro forma, stabilized, and other variations. Understanding the underlying premise is critical to providing context for the cap rate. Of course, deriving cap rates from sales with which the appraiser is familiar is the best data available, and this kind of data should be dug up as best evidence. But it does entail exactly that, some digging.

I will end with this for now. When working with Big Data, it is incumbent on appraisers to understand how this information was gathered and organized, and what it does or does not explain. How does it, or does it not, the data apply to the specific appraisal assignments and results? We need to understand what the underlying data consists of. We need to examine big data with an informed and a critical eye.

Don't take the results at face value, or automatically assume that it applies to your appraisal assignment in the form in which you receive it. It is essential that appraisers analyze and understand primary data—not simply reproduce or report it. Draw some thoughtful conclusions from the data.

Realize also that Big Data will get better over time. And, there will be a follow-up to this article.

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