REAL ESTATE ISSUES®

Published by THE COUNSELORS OF REAL ESTATE® *Volume 39, Number 3, 2014*

FEATURES AND PERSPECTIVES

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Published by THE COUNSELORS OF REAL ESTATE®

Published by The Counselors of Real Estate, a not-for-profit organization of the National Association of REALTORS®, 430 N. Michigan Ave., Chicago, IL, 60611.

Third class postage paid in Chicago. *Real Estate Issues*® publishes three times annually. Subscription rates are: $60 for one year (3 issues); $99 for two years; $120 for three years; $52 per year to students and faculty; $85 for two years; $97 for three years; $67 for one year (3 issues) foreign rate, $115 for two years; $142 for three years - submit in U.S. currency; single copy $25. Remittance may be made by credit card or personal check, payable to The Counselors of Real Estate. Remittance, change of address notices, undeliverable copies, orders for subscriptions and editorial material should be sent to *Real Estate Issues*. The Counselors of Real Estate, 430 N. Michigan Ave., Chicago, IL, 60611. Phone 312.329.8427; Fax: 312.329.8881; Email: *info@cre.org*; Website: *www.cre.org*. Library of Congress card number LC 76-55075.

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CONTENTS

Editor's Note

BY MARY C. BUJOLD, CRE

"REI is YOUR publication and we want to ensure that you consistently look to it for critical thinking on important real estate subjects."

Alas, even the best laid plans……

We had intended for this, our final issue of 2014, to be focused on housing and housing-related topics. The stars did not align however, for us to be able to bring these articles to you this year.

Nevertheless, we continue to work on publishing important topics related to housing, which is in recovery across the country. Stay tuned in 2015 to see more on this subject.

We are pleased to publish a counterpoint response to the article on the topic of fracking authored by **Robert F. Kennedy, Jr.** that appeared in the previous issue of *Real Estate Issues*. The article presents a different and well-researched perspective. Readers can consider both sides of the arguments. **Richard J. Roddewig, CRE**, and **Rebel A. Cole, Ph.D.** co-wrote the article and present a clear and cogent discussion of the impacts on real estate values in areas of fracking.

Mahlon 'Sandy' Apgar, CRE, gives us a great review of the financial tome *Capital in the 21st Century*. I am not certain how he managed to get through the entire book, but we are delighted that he did. If you are willing to tackle this one, see you in about another 12 months.

David Lennhoff, CRE, presents *Valuation of Big-Box Retail for Assessment Purposes: Right Answer to the Wrong Question*. This article reviews and discusses the fundamentals of valuing big-box retail that are frequently misunderstood in the appraisal process.

In *The Rise of the Market for Auto Dealerships: Bad News for Landlords?* **Bradley R. Carter, CRE,** discusses how a recent boom in auto sales can have some negative consequences for the associated real estate.

Our inaugural *Legal Update* segment is being coordinated by **CRE Anthony DellaPelle, Esq.**, and he starts us off with *Property 'Inspection' or Taking?* followed by *Federal Water Reform Act Spurs Development* by **Charles Noel Schilke, JD, AM, CRE**. This will now be a regular feature for *REI* and we welcome all submissions you may wish to offer.

We are approaching 2015, which promises to be an exciting year for *REI*. A sneak peak of what is in the works for next year includes a water-focused issue, two roundtable discussion panels on important real estate topics, one of which includes participants from Europe as well as the U.S., and more articles on the Top Ten Real Estate Issues and related subject matter.

REI also plans to survey our membership early next year to understand more about how you use *REI,* the information and topics that are of interest to you and what you would like to see in forthcoming issues. *REI* is YOUR publication and we want to ensure that you consistently look to it for critical thinking on important real estate subjects.

Thank you again to those who contributed the articles in this issue and to those who continue to devote their time, ideas and energy to the *REI* Editorial Board.

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Real Estate Value Impacts from Fracking: Industry Response and Proper Analytical Techniques

BY RICHARD J. RODDEWIG, CRE, MAI, FRICS; and REBEL A. COLE, Ph.D., CRE

INTRODUCTION

Fracking has emerged as an environmental and real estate issue in the past 10 years because of the enhancements in drilling technology that enable oil and gas to be economically captured from shale deposits in many parts of the country. Figure 1 below shows the various shale formations across the country in which fracking is either actively underway or potentially possible in the future.

In some fracking exploration and development areas, especially above the Marcellus Shale formation in New York and Pennsylvania, there are serious concerns that future groundwater contamination and methane leaks will invariably lead to adverse impacts on home prices and values and affect mortgage lending.

In this article, we discuss the following six points to consider before concluding that fracking will inevitability lead to adverse impacts on home prices, values and mortgage lending:

Figure 1
Lower 48 States Shale Plays

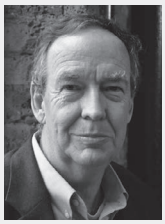
Source: U.S. Energy Information Administration

- First, economic factors that can enhance prices and values in fracking areas must be carefully weighed against environmental concerns that could create potential negative impacts;
- Second, the oil and gas industry and federal, state and local governments are developing programs, policies and regulations to decrease the risks of environmental contamination to respond to groundwater and well water contamination concerns, and to mitigate potential adverse impacts of fracking on home prices and values;
- Third, the real estate appraisal profession has developed well-established methods for determining the impact of those risks and the effectiveness of industry and government responses on prices and values;
- Fourth, the few fracking impact studies published to date have weaknesses and limitations, and are only an opening round in what will be a long process of understanding the effects of fracking on the single-family real estate market;
- Fifth, past studies related to oil field groundwater contamination and methane leaks show that real estate impacts, when they do occur, typically are temporary and can be eliminated by careful environmental and policy responses;
- Sixth and finally, mortgage lenders and real estate appraisers will be able to deal effectively with the additional risks for the security of mortgage loans extended to borrowers in communities and regions where fracking is taking place.

REAL ESTATE IMPACTS FROM FRACKING: TALLYING THE PLUSES AGAINST THE MINUSES

There are both pluses and potential minuses for communities and regions experiencing fracking exploration and development. Fracking creates jobs, and more workers mean increased demand for goods and services resulting in an enhancement to retail and commercial real estate values. While that can put pressure on local rents, making it more difficult to find affordable housing in fracking boom areas, it also enhances the value of existing rental properties, and even single-family homes. The net result is an economic benefit to the local

About the Authors



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Rebel A. Cole, Ph.D., *has been a professor of finance and real estate at the Driehaus College of Business of DePaul University in Chicago since 2003. He received his doctoral degree in business administration from the University of North Carolina in 1988, after which he spent ten years working in the Federal Reserve System, primarily at the Board of Governors in Washington, D.C. where he oversaw design, development and implementation of the System for Estimating Examination Ratings (SEER), the Fed's primary system for off-site monitoring of banks and bank holding companies.*

Since 1997, Cole has served as a special advisor to the Asian Development Bank, the International Monetary Fund, the World Bank and other non-governmental organizations, providing training and technical assistance to central banks around the world. He has participated in more than 40 international missions to these countries to assist in the development of stress tests, financial stability indicators, and off-site monitoring systems for commercial banks and other financial institutions.

Cole has published peer-reviewed articles in top academic journals including the Journal of Finance, the Journal of Financial Economics, the Journal of Financial & Quantitative Analysis, *the* Journal of Banking & Finance, *the* Journal of Real Estate Finance and Economics and Real Estate Economics. *His primary areas of research are commercial banking, corporate governance, financial institutions, real estate and small business finance.*

Cole is a frequent commentator in the financial press, and has been quoted in, or appeared on: The American Banker, Bloomberg Businessweek, CNN, Fox Business News, The Huffington Post, The New York Times, National Public Radio, PBS, The Street.com, the Voice of America, the Washington Post, and Yahoo! Finance.

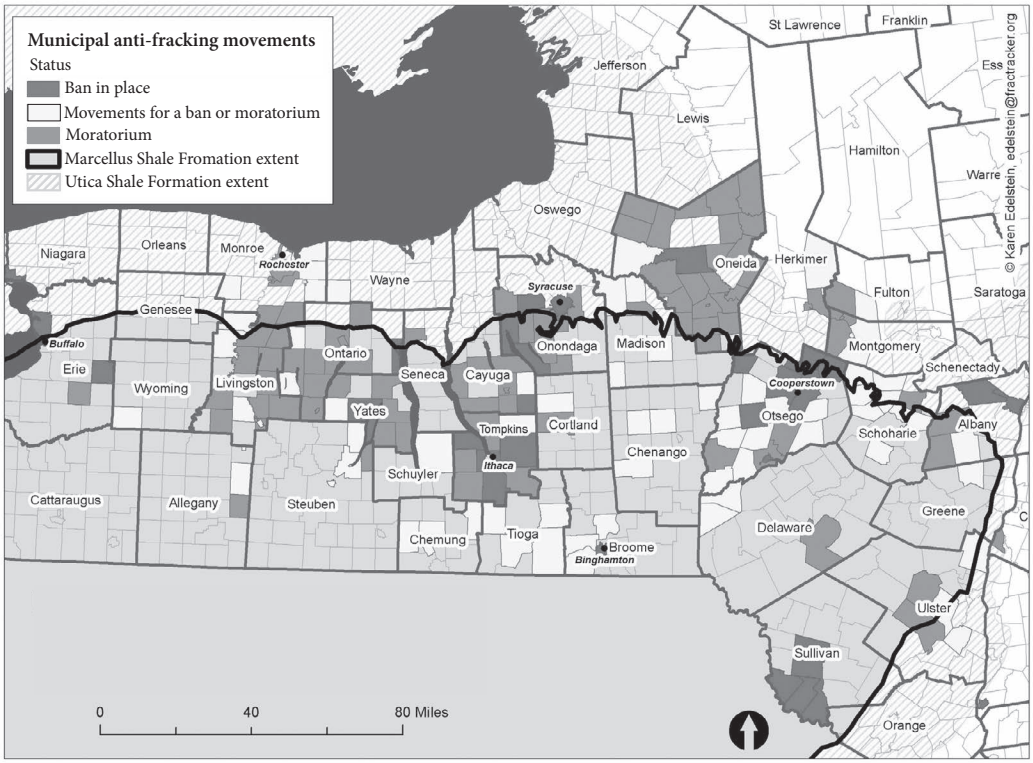
economy and increased state and local tax revenues. For example, North Dakota, as a result of oil drilling in the Bakken formation, has the lowest unemployment rate in the country. Between 2007 and 2012, it also had the most counties showing increases in median household income. Shale development impact fees levied by some state and local governments have generated significant investment in local infrastructure, which in turn creates jobs and enhances local property values. For example, the Pennsylvania Public Utility Commission estimates that the Commonwealth of Pennsylvania collected $225.75 million in drilling impact fees in 2013, an increase of 11.4 percent over the 2012 impact collections[1] and much of that revenue is redistributed to local governments.

The value of the land on which the fracking operations occurs also typically increases because of well site rents and royalty revenues. Rents—sometimes called "signing bonuses"—for drilling sites have been increasing rapidly. In Ohio, Pennsylvania and New York, signing bonuses that were at $2.00 to $5.00 per acre pre-2000 had increased to $30 per acre by 2005, more than $2,000 per acre in 2008, and typically ranged between $5,000 and $10,000 per acre in 2012.[2] The *Oil and Gas Monitor* reports that "historically, in the eastern United States, oil and gas royalties were in the range of 12 to 14 percent" but that at least one production company has paid rates as high as 20 percent in fracking boom areas.[3] Both Pennsylvania and New York have state laws guaranteeing a landowner royalty payments equal to at least 12.5 percent of the "value of production."

THE GOVERNMENTAL AND OIL AND GAS INDUSTRY RESPONSE TO FRACKING CONCERNS

State and local governments across the country have been reviewing and revising regulations related to oil and gas explorations in response to some of the unique issues raised by horizontal drilling and fracking. A statewide fracking moratorium in New York has been in place for six years while the state's Department of Environmental Control considers the scope of necessary regulations. As shown on Figure 2 below, many cities and towns in New York State have adopted zoning and land use laws either prohibiting fracking or significantly limiting its use as a drilling technique.[4]

Figure 2
Municipal Anti-Fracking Movements in New York State



Source: © Karen Edelstein

To avoid outright bans on fracking at the state and/or local levels, the oil and gas industry knows it must address public concerns about the possible effects of fracking on the environment and on home prices and values in areas experiencing the fracking boom. As a result, the oil and gas industry and various professional groups have been responding to environmental concerns by working with states to improve regulations and to develop "best management practices" (BMPs) for fracking. For example, the *Times-Tribune* newspaper headquartered in Scranton, Pennsylvania, in the Marcellus Shale fracking region reported in May of 2013 that the oil and gas industry was working in conjunction with the Pennsylvania Department of Environmental Protection to protect drinking water wells from above-ground drilling-related activities and to improve construction standards for domestic supply wells.[5] The Marcellus Shale Coalition, an oil and gas industry-aligned organization in the New York, Pennsylvania and West Virginia fracking boom area, has issued various recommended practices related to drilling, pipelines, stray gas incidents, water testing prior to drilling, and drill site development and restoration.[6] Although some of the language in the Marcellus Shale Coalition's BMPs is quite general, more detailed standards are being developed by other organizations. The American Society of Testing Material (ASTM) has created a subcommittee to develop consensus standards related to "critical areas" such as site investigation and permitting, well installation integrity, drilling techniques, management and disposal of drilling fluids, groundwater monitoring and remediation, well fluid reinjection techniques, and well abandonment.[7]

Other non-oil and gas professional organizations that also are stakeholders in assuring that fracking is done in a manner that minimizes adverse environmental impacts have been putting pressure on the industry and state governments to do more to protect groundwater from contamination and methane intrusion. For example, the National Ground Water Association, while recognizing that "no widespread water quality or quantity issues have been definitively documented that are attributable to the hydraulic fracturing process itself." has developed a set of principles "as a foundation for policymaking focused on groundwater and drinking water protection."[8] The principles include:

- proper construction and maintenance of water wells;
- improved construction standards for domestic water supply wells and more effective state and local government enforcement of well construction standards;
- improved construction standards for oil and gas production wells to assure integrity and prevent migration of fluids and gas;
- proper sealing of unused or abandoned water wells and production wells;
- water management plans in areas where water is scarce;
- implementation of best management practices for handling surface spills;
- disclosure of all chemicals used in the fracking process;
- pre- and post-drilling testing of groundwater according to a set of recommended testing protocols;
- integrated groundwater studies to determine short- and long-term impacts of fracking; and
- acceptance by the oil and gas industry of its financial responsibility for enhanced long-term groundwater monitoring and for remediation when contamination to groundwater sources does result from fracking.

Government regulators have been responding. The United States Environmental Protection Agency (EPA) has been involved in a three-year review of the effect of fracking on drinking water. The EPA issued a progress report in December of 2012, and a draft report for public comment is expected in 2014. In May of 2014, the EPA announced it was considering regulations requiring the fracking industry to publicly identify the chemicals used in the hydraulic fluids essential to the process.[9] Among the states that adopted stronger regulations for fracking as well as traditional oil and gas exploration and drilling are Montana,[10] Wyoming,[11] California,[12] and Illinois.[13]

Pressure from such outside organizations and government regulators will result in enhanced procedures to avoid contamination from fracking which, in turn, will likely lessen future public concerns about fracking, and reduce or eliminate any current adverse impacts on property prices because of groundwater contamination and methane intrusion concerns.

LONG ESTABLISHED AND GENERALLY RECOGNIZED APPRAISAL METHODS CAN BE USED TO DETERMINE THE REAL ESTATE IMPACTS OF FRACKING

As discussed in an article entitled "Power Lines and Property Prices," which appeared in the previous issue of *Real Estate Issues* (Volume 39 Number 2), the real estate appraisal profession over the past four decades has developed a set of recognized and generally accepted techniques for determining the impact of "detrimental conditions," including groundwater contamination and vapor intrusion, on real estate prices and values. The Appraisal Standards Board (ASB) in Washington, D.C. has issued specific guidance for determining the impact of "adverse environmental conditions" on prices and values.[14] The ASB's Advisory Opinion 9 (AO-9) deals specifically with properties affected by such adverse environmental conditions. As discussed in that power-line-impact article, AO-9 requires that every analysis of the impact of an environmental condition on property value "must be based on market data, rather than unsupported opinion or judgment."[15]

It is, and will continue to be, licensed real estate appraisers who, on a daily basis, will be determining the impact of fracking on real estate prices and values in particular markets undergoing the exploration and horizontal drilling boom. Their single-family home appraisals, undertaken to support mortgage loans, will be the testing ground on which the effects of fracking on real estate prices and values are determined. They are also likely to be the expert witnesses in the looming litigation concerning the effects of fracking on home values.[16]

Unlike unlicensed economists who analyze home prices in areas experiencing fracking, licensed real-estate appraisers are required by standards of professional practice to apply a set of carefully selected techniques to determine such impacts. Licensed appraisers are required by their professional standards to utilize the methods that their peers would use in similar assignments, and they determine what their peers would do in similar situations by reference to their professional appraisal journals and publications, their professional meetings and conferences, and their professional appraisal education courses, seminars and appraisal discussion groups.[17] This is echoed in many publications of the Appraisal Institute, the largest professional organization of real estate appraisers, including Real Estate Damages: Applied Economics and Detrimental Conditions, Second Edition, 2008, which, on page 238, reads: "In the analysis of detrimental conditions, it is important that the appraiser be knowledgeable about the available tools, properly select and apply those tools, avoid unproven or suspect methodologies, and ultimately have relevant market data to support opinions and conclusions."

The courses and peer-reviewed publications of the appraisal profession list the following generally recognized and accepted methods for determining the impact on real estate markets, property prices, market rents, and market value from environmental conditions such as groundwater contamination or vapor intrusion that could result from fracking:

- analysis of environmental case studies;
- paired sales analysis;
- multiple regression analysis;
- adjusting income and capitalization rates to reflect environmental risk; and
- market interviews (but only as part of the other four generally accepted techniques or to support or supplement results from the other four methods).[18]

Those courses and publications also make clear the following central caveat: proximity to a source of an adverse environmental condition—or even the presence of known contamination on a property—does not automatically cause an adverse impact to prices and values.[19] And, while opinions of homeowners and other non-real estate professionals may have some relevance to understanding a marketplace, such opinions are not a substitute for analysis of actual sales prices.

PROBLEMS AND ISSUES IN THE USE OF HEDONIC REGRESSION MODELING TO DETERMINE THE REAL ESTATE IMPACTS OF FRACKING

How have the environmental concerns that accompany fracking affected home prices and values in fracking boom areas? To date, there have been only a few published studies of that issue. The two most frequently cited studies are two non-peer-reviewed working papers distributed by researchers at Duke University.[20] Both studies, one dated 2012 and the other 2014, employ hedonic regression analysis—a methodology discussed in more detail below. Regression modeling has long been used by academic real estate economists and property tax assessors. It is less frequently used by licensed real estate appraisers in their everyday appraisal practice. A hedonic regression

model can be defined simply as "a statistical technique used to isolate the effect and contribution of various housing attributes to real estate prices."[21] The 14th edition of *The Appraisal of Real Estate* has the following, more detailed definition that concludes with a reference to how regression analysis can be used to support an opinion of the effect of a contamination situation on prices and values:

> "Regression analysis is a statistical technique in which a mathematical equation can be derived to quantify the relationship between a dependent (outcome) variable and one or more independent (input) variables. In appraisal the dependent variable is usually price or rent. The independent variables are usually broadly derived from the four forces that affect value (social, economic, governmental, and environmental) and the physical characteristics of the land and improvements…. it is not uncommon to include an environmental variable or variables when investigating the effects of an external factor such as traffic noise or factory odor."[22]

And, as indicated above, hedonic regression analysis has long been recognized as one of the appropriate methods for determining the impact of various types of detrimental conditions, including groundwater contamination and other types of environmental conditions and risks on property prices and values. However, there are significant challenges involved in arriving at relevant and statistically significant conclusions when using complex regression models, as discussed in many previous articles in *Real Estate Issues*,[23] *The Appraisal Journal* [24] and elsewhere. And the appraisal profession has clearly recognized that regression modeling has only a limited role in assignments involving analysis of the impacts of various types of environmental conditions on prices and values[25] and is not a substitute for individual property-by-property analysis.

Another fracking article that appeared in the most recent issue of *Real Estate Issues* (Volume 39 Number 2) summarizes the results of those two studies as follows:

> "A 2012 study published by the National Bureau of Economics Research, Duke University and Resources for the Future analyzed the effects of shale gas development on property values in Washington County, Pennsylvania. Those researchers found that, 'by itself, groundwater risk reduces property values by up to 24 percent.' Similarly, a more recent investigation by researchers from Duke University, Resources for the Future, and the Environmental Defense Fund found large negative impacts on property values for groundwater dependent homes in areas with shale gas development."

The first of the two Duke University researcher studies (2012) focuses on Washington County, Pennsylvania, while the second (2014) expands the area of analysis to other areas in Pennsylvania and parts of New York. The 2014 paper appears to be a major revision of the 2012 paper that incorporates numerous improvements over the methodology used in the first paper, such as analyzing matched pairs of properties, using fixed effects models to control for property heterogeneity, and looking only at properties adjacent to the Public Service Water Area (PSWA) boundaries that delineate properties relying upon piped central water versus on-site well water.

Both studies were conducted by the same team of researchers from Resources for the Future, the Environmental Defense Fund and Duke University. Both are unpublished and non-peer-reviewed working papers sponsored by the National Bureau of Economics Research. Both utilize hedonic regression to analyze property values. Both attempt to link the risk of groundwater contamination from fracking to lower sales prices.

The 2014 paper presents more formidable evidence concerning possible price diminution attributable to the perceived risk of groundwater contamination since it is based on a more comprehensive sales price data base from a broader region of both Pennsylvania and New York and uses a superior methodology.

Among the more important conclusions of the 2014 study are the following:

- Only homes on individual domestic wells showed adverse impacts to prices. Homes that are supplied with piped central water (as opposed to individual wells) "in fact benefit from being adjacent to drilled and producing [fracking] wells" due to "royalty payments (or expectations of royalties) from productive wells."[26]
- The adverse impacts on prices of homes served by individual wells ranged from -10 to -22.4 percent, and the impacts decrease as distance from a well increase.
- Since the study only deals with the "perception

of risk" and not the actual impact of groundwater contamination—apparently there had been no significant adverse groundwater or methane contamination incidents that could be studied in the areas researched—"there could be large gains to the housing market from regulations that reduce the risk."[27]

- Visibility of a well is an important factor—when properties benefit from proximity, the benefit is greater if the well drilling pad is not visible, and when properties are impacted in price, the impacts are greater when the well is visible.

The estimated effect of a -22.4 percent impact shown in Table 1 for houses within 1.0 kilometer of each well pad appears to be at odds with prior studies of risks associated with living in areas experiencing traditional oil and gas drilling, areas with documented contaminated groundwater, and areas with methane gas or petroleum-related vapor intrusion issues,[28] as we discuss below.

The specification of the Muehlenbachs, et al. 2014 model raises some questions about its reported -10 to -22.4 percent impact for properties served by on-site domestic water wells. The property specific characteristics included as variables (in addition to well water vs. piped central water) are age of home, total living area, number of bathrooms, number of bedrooms, and lot size.[29] This excludes a variety of other property specific characteristics that the authors call "unobservable house and neighborhood attributes . . . that might otherwise bias our results." Some of these "unobservable attributes" relate to the actual fracking leasing, drilling and payment process itself, while others are more general property characteristics that are likely important variables affecting prices paid.

In both the 2012 and 2014 papers, the authors fail to account fully for the fact that the sales price of a property is a function of the value of the land, the improvements on the land, and the rights to the minerals below the land. When a property sells with diminished or no mineral rights, it will sell for less than an otherwise identical property with full mineral rights. When a property sells with encumbrances, such as easements or surface rights granted for construction, access roads, etc., it will sell for less than an unencumbered property. To the extent that property owners near wellheads outside of the PSWAs are more likely to have diminished their property rights through leases to third parties or encumbered surface rights, sale prices of their properties would be significantly lower than otherwise identical properties, unless the properties also were continuing to generate lease and royalty payments.

In both papers, the authors fail to account for terms of drilling leases. Many property owners in rural areas came to the bargaining table very early in the shale boom, selling or leasing their mineral rights for what turned out to be bargain-basement prices.[30] If properties located outside the PSWAs were more likely to have diminished their property rights through leases, easements, etc., then a hedonic pricing model that fails to account for this would find that these properties sell for less than properties located within the PSWA. Yet this 'diminution' would not be attributable to the deleterious effect of fracking; rather it would be attributable to the leases, easements, etc.

While the 2014 paper is a marked improvement over the 2012 paper, looking at more than a million property sales, the newer study fails to address other issues that call into question the authors' conclusions about the link between groundwater contamination risk and sale prices.

In the 2014 study, the authors analyze the subsample of their properties that sold more than once during their sample period; this enables them to include property fixed effects to control for time-invariant property characteristics that are omitted from their model. While this is an important improvement over their 2012 analysis, this methodology cannot account for one of the most important omitted characteristics: the mineral rights that are the subject of leases to the energy companies, which are not time-invariant. In fact, it is highly likely that the mineral rights changed between sales. Without this information, the authors' hedonic models are hopelessly compromised. In marked contrast, a licensed appraiser would take into account the mineral rights that do or do not convey with a particular property. In addition, the properties analyzed are not a random sample so that the authors' results would only be relevant for other properties that sold more than once during the sample period.

In another part of the 2014 study, the authors limit their sample to properties located within 1,000 meters of the border of the PSWA, again, in an attempt to control for property heterogeneity. This analysis, however, suffers from the same problem as other analysis samples: the majority of wellheads are located outside the PSWAs, so that properties outside the PSWA are closer to the wellheads and more likely to convey with diminished

mineral rights. In this analysis, the authors look at properties less than one kilometer, less than 1.5 kilometers, and less than 2 kilometers from wellheads. However, the sample less than 1.5 kilometers and less than two kilometers from wellheads appears from the data to also contain the properties less than one kilometer from the wellheads, so their analysis tells us nothing about diminution in value for properties located between one and two kilometers from wellheads; the latter results are likely driven by the properties located less than one kilometer from the wellheads. One way to address this issue is to include piecewise indicator variables for distances, such as 0K – 0.5K, 0.5K – 1.0K, 1.0K – 1.5K, and 1.5K – 2K. The authors' results likely reflect the diminished mineral rights and surface rights that convey with sales in the immediate vicinity of the wellheads, but they fail to acknowledge this likelihood.

A thorough review of both the 2012 and 2014 studies is hampered by the limited information provided to the reader by the authors. Many important descriptive statistics, such as the median, mean, standard error, minimum and maximum values that would enable the reader to evaluate the representativeness of data included in the analysis, and to identify potential outliers that can badly bias a hedonic regression model, are not provided. The authors present only means and standard deviations for the full sample of 1.04 million property sales; no minimums or maximums are presented so that the reader cannot tell if outliers are included in their analysis. The authors fail to present descriptive statistics for any of their subsamples, such as the 400,000 repeat sales, or the 3,000 PSWA boundary properties, even though they claim that these subsamples provide their most important and convincing results.

The authors also fail to present the coefficients and standard errors/t-statistics for explanatory variables in their hedonic regressions—other than the groundwater contamination variables of interest. This makes it impossible for the reader to judge whether or not their model makes economic sense; for example, is the coefficient on square footage positive or negative? We simply don't know because the authors withhold this information from the reader.

The authors account for time-fixed effects by including a set of county-year indicator variables, in spite of the fact that housing prices changed by large percentages during the sample period. With such a large sample, month dummies would be much more effective in controlling for intra-year price changes. Moreover, the county-year dummies account only for the average effects across all properties in a county, no matter the location within the county. Our previous experience with such models indicates that prices in rural areas often move quite differently from prices in urban areas; hence, the authors have failed to properly control for the macroeconomic impact of the subprime financial crisis. If prices fell by more in the rural areas than in the urban areas, one might obtain the same results as the authors—properties located in the rural areas outside of PWSAs sell for less than otherwise identical properties within the largely urban PWSAs--but this would say nothing about the impact of fracking. Or if the Great Recession and housing market collapse resulted in more foreclosure sales in groundwater well areas than in central water areas, that too could be contributing to differential price impacts in these areas, but, again, would say nothing about the impact of fracking.

Failure to consider whether foreclosure sales or even short sales should be eliminated—or at least determine if they should be—is one of many central issues that licensed real estate appraisers would consider in structuring a matched pairs regression model such as that employed by the authors. The researchers acknowledge that in "matched pairs analysis" "the key to success . . . is to structure the problem so that unobservable house and neighborhood attributes are not correlated with treatment status."[31] One of the ways the researchers claim to have controlled for this is to "require exact matches by census tract" and explain this by the following example: "The idea behind these restrictions is that houses within six kilometers of a well pad in the same census tract that rely on the same water source will be located in similar neighborhoods."[32]

But many census tracts in the 36 Pennsylvania counties included in the 2014 sale price study are quite extensive in geographic area and vary significantly in topography as well as in location of various amenities and disamenities that may also be affecting prices paid for homes in groundwater domestic well areas. Among the factors that will cause variation in price even within the same census tract are the following:

- school district boundaries;
- location on paved or unpaved roads, and whether the road is maintained by local government;
- slope, topography and resulting impact on land usability;
- location in a floodplain or with creek or stream frontage or wetlands;
- proximity to noise and traffic from interstate highways;
- proximity to oil and gas pipelines and high voltage power line corridors.

Washington County, Pennsylvania, was the focus of the 2012 Muehlenbachs study and was one of the 36 Pennsylvania counties included in the more robust 2014 study. Figure 3 below shows the 2010 census tracts in Washington County. It also shows the location of gas transmission lines and 345,000 kilovolt power lines, as well as rivers and streams and the varied topography.

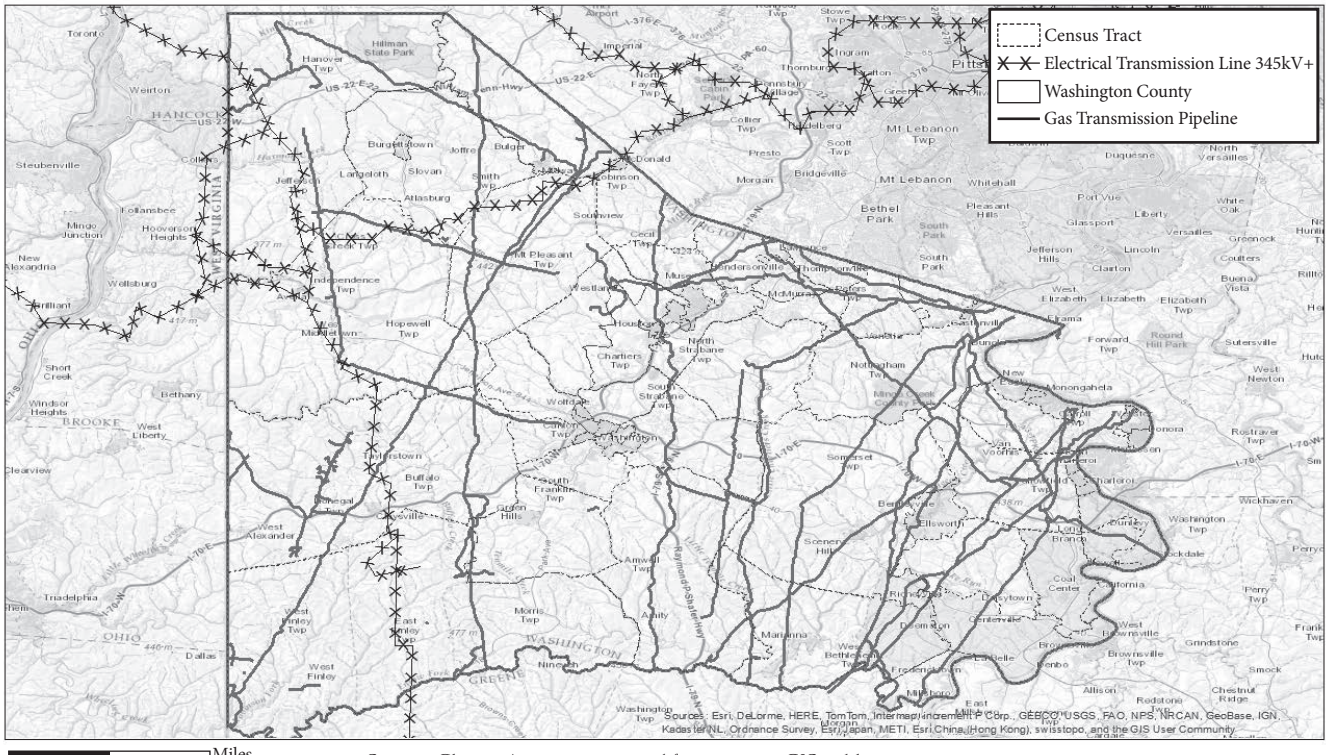
The map demonstrates that the price impact of many such "unobservables" have not been eliminated simply by structuring the paired sales analysis on a census tract level.[33] Some parts of a single census tract may be affected by steep slopes and proximity to creeks and rivers, power lines, and gas transmission lines while other parts of the same census tract are not.

There are many other potential issues related to the 2014 study, including the following that can only be resolved by a review of the entire data set and model:

- It is impossible to tell if some houses have sold for lower (or higher) prices because the prior owners already had leased their drilling rights but sold the home while retaining the drilling royalties.
- It is impossible to know if the well pads are producing or dry. Endnote 27 to the article indicates that 42 percent of the wells drilled do not produce gas. That factor could lower prices paid for homes on dry well sites with no anticipation of future leasing revenues

Figure 3

2010 Census Tracts in Washington County



Source: Clarion Associates, created from various GIS public sources

and increase prices paid by buyers of nearby homesites with lowered risk of future groundwater contamination.

- While the researchers controlled for time effects with a dummy variable for year of sale, there can be significant differences in sale prices from month to month in the same year, especially in times of quickly rising or falling prices. Including a dummy variable for year of sale averages out these month-to-month changes but does not necessarily control for changes in price over time.
- In some tests, the authors "match" samples of groundwater and pipe water but it is impossible to determine from the information in the article how effective this is.[34]
- The data set may not have been properly quality controlled to eliminate large outliers as evidenced by the unusually large standard deviations for some of the variables specified in the model.[35]

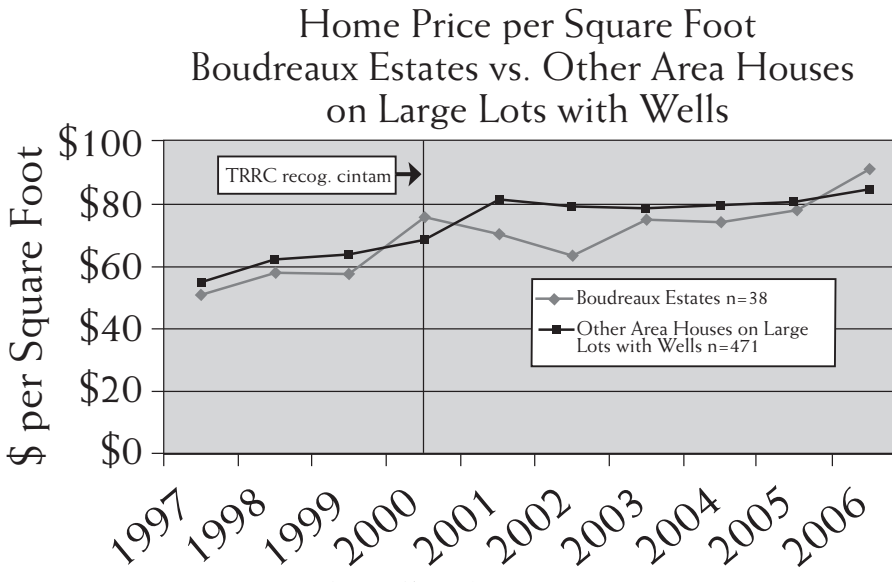
PAST REAL ESTATE MARKET STUDIES INDICATE THAT INVESTIGATION AND REMEDIATION CAN LIMIT PRICE AND VALUE IMPACTS FROM OIL AND GAS CONTAMINATION

Past experience and market research indicate that groundwater and soil contamination because of oil and gas vary and can be eliminated by prompt investigation, remediation and market assurance programs.

A good example of such a situation is the Tomball Oil and Gas Field in Harris County on the northwest edge of the Houston metro area, the subject of a groundwater contamination investigation by the State of Texas. The Tomball Field had been in active oil and gas production for more than a half century. Hydrocarbon contamination (benzene) and chlorides from the Tomball Field contaminated groundwater in the Boudreaux Estates portion of the town of Tomball.[36] At the time of the contamination discovery, domestic water in Boudreaux Estates was provided by private on-site wells. Test results disclosed that fewer than half the wells were affected by contamination.[37] As part of the settlement of litigation over the impact of the groundwater contamination, ExxonMobil agreed to pay for installation of a central water supply line, pay for hookups to residents that agreed to be connected, and pay for well-plugging for owners that requested it. Plugging of wells and connection to the central water supply system was voluntary rather than mandatory.

To determine the effect of the groundwater contamination, home prices in Boudreaux Estates can be compared with prices for a control group of other homes in northwest Harris County built on similarly sized lots and with similar on-site wells and septic systems. The price trend comparisons for the period before and after the Texas Railroad Commission first recognized the groundwater contamination situation in Boudreaux Estates are shown in Figure 4 below.

Figure 4



Source: Clarion Associates, Inc.

The graphed data indicate a possible temporary impact on prices in Boudreaux Estates during 2001–2002, the years immediately following the discovery and announcement of groundwater contamination. In three of the four years prior to 2001, prices in Boudreaux Estates were slightly below prices for the control group. However, prices dropped significantly in Boudreaux Estates in 2001 and 2002 before rebounding in 2003. Sale prices in 2003 and afterward returned to their historical pattern prior to 2001, that is, they were a bit lower than the average price in the control group. The return to the normal relationship coincided with the finalization of plans for the central water line in 2003 and commencement of construction of the central supply line and distribution lines within Boudreaux Estates in 2004.

That evidence indicates no permanent impact on prices in Boudreaux Estates from the groundwater contamination situation. It also indicates a possible temporary impact on prices of between 10 and 20 percent during the years 2001 and 2002. Any impact on prices had ended by February 2004 when the Texas Railroad Commission announced that ExxonMobil would install central water lines and pay for hookups.

In the 1980s Seattle discovered that methane was leaking from its closed Midway Landfill. The situation become so serious that 11 families were evacuated from the neighborhood between November 1985 and February 1986. According to the director of the City of Seattle's Engineering Department at the time, "there was general perception among residents in the area that their properties and their community had lost all value" and angry community meetings attended by as many as 600 residents resulted in extensive negative media coverage.[38]

The city launched aggressive efforts to monitor and control the methane leakage while also launching what it called a "Good Neighbor Program "to stabilize property values, to rekindle real estate activity, and to restore confidence in the Midway area as a safe and stable family community and a desirable place to live."[39] A central component was a property value assurance program. The City of Seattle agreed to make up the difference between an independently derived fair market value estimate disregarding the methane gas situation and the actual sale price of a home. If a homeowner listed but could not sell a home within six months, the city would buy the home at fair market value. The program was designed to end "either two years after the gas was removed from the neighborhood, or when 10 homes sold for full FMV (fair market value) without any City subsidy."[40]

By December of 1986, the City had been able to reduce methane levels in homes to background ambient air levels. By March of 1988, thanks to the effects of the home price guarantees in the Good Neighbor Program, eleven sales had closed at 100 percent of fair market value and by January of 1990, 49 homes had so sold. A total of 104 privately transacted sales occurred during the operation of the program from 1986 through 1989. The average impact on market price/value as measured by the subsidies paid by the City to privately transacted homes steadily decreased from an average of 9.38 percent in 1986 to 8.16 percent in 1987 and to only 2.45 percent and 2.78 percent in 1988 and 1989.

The Seattle property value assurance program was one of the first, if not the first, such program in the United States. Since then, property value assurance programs have been used widely around the country, both proactively as part of approvals of landfills that create community concerns about possible groundwater, air and methane contamination, as well as in the wake of oil and gas pipeline leaks and explosions.[41]

FRACKING AND THE MORTGAGE MARKET

A recent law review article[42] (Radow, 2014) discusses issues related to mortgage lending in fracking boom areas and posits that mortgage lenders will increasingly be reluctant to make home loans in fracking boom areas because of the environmental and liability risks. However, the article readily admits that "nationwide, people own properties encumbered by mortgages and gas leases." The author presents anecdotal evidence but no statistical data to support any conclusion that banks are turning down mortgage loans in fracking areas in any large numbers.

Many of the environmental risks that accompany fracking also accompany traditional oil and gas drilling. Mortgage markets in the traditional oil patch of Texas, Oklahoma and Louisiana have a long history of dealing with issues related to drilling leases and proximity of oil wells and production pipelines.

And real estate appraisers in those areas long have dealt with the requirements of mortgage lenders related to reporting and analysis of environmental conditions. For example, the March 2005 versions of Fannie Mae Form 1004 and Freddie Mac Form 70 (Uniform Residential Appraisal Report, or URAR) require the appraiser under

the "Site" section of page 1 to answer "Yes" or "No" to the following question: "Are there any adverse site conditions or external factors (easements, encroachments, environmental conditions, land uses, etc.)?" This puts a responsibility on the appraiser to look for "environmental conditions" and then describe them. The published FHA and HUD guidelines for single-family home appraisals include specific requirements related to investigating, noting and commenting on "all hazards and nuisances affecting the subject property that may endanger the health and safety of the occupants and/or the structural integrity of marketability of the property." Among the listed items are "known hazards and adverse conditions" including "toxic chemicals, radioactive materials, other pollution, hazardous activities, potential damage from soil or other differential ground movements, ground water, inadequate surface drainage, flood, erosion, excessive noise and other hazards on or off site."[43] If hazards or nuisances are observed that need to be remediated,[44] the appraiser must describe the condition(s) and include in the site section of the report a statement that the appraisal opinion is "subject to repairs" and/or "subject to inspection." Supporting documentation provided by the appraiser may include extra photos or copies of site studies or analyses, property reports, surveys or plot plans, etc.

And appraisers in areas that are the subject of environmental investigation or concerns, but in which no remediation is necessary, typically handle the issue of the impact of the situation on prices and values by identifying the environmental issue and the area affected and then selecting the comparable sales from the same affected area. That process typically assures that the market value conclusion reflects the effect of the environmental situation on prices in the particular local marketplace as of the date of value in the appraisal report.[45]

In rare cases, a lender may ask the appraiser to determine the effect of the environmental situation on the market value. In such a case, a sales analysis using sales from a similar neighborhood or area unaffected by the environmental situation can be compared to prices in the affected area through a paired sales analysis or trend line analysis such as that described earlier involving the Boudreaux Estates neighborhood in Tomball, Texas. Because of its inherent limitations, hedonic regression modeling, such as that used in the two Muehlenbachs, et al. studies, is not typically used as part of the property-by-property analysis that accompanies the single-family home lending process. As a *Real Estate Issues* article dealing with real estate appraising in New Orleans in the wake of Hurricane Katrina noted**:** "Because of their inaccuracies, the home lending industry had not been widely utilizing AVM products to determine the value of individual properties for mortgage origination: 'The reluctance to use this product [AVMs] for first mortgages is due to uncertainty concerning the reliability of the product in high loan-to-value situations.' "[46] An even more recent article in *Real Estate Issues* reviewing the accuracy of Zillow's hedonic models concluded that "mean error rates are so great that they are of little value" in determining market values of either high-priced or low-priced homes.[47]

CONCLUSION

The fracking boom has been accompanied by important environmental issues and concerns about the impacts of fracking on real estate prices and values in areas experiencing the boom. However, there has been only limited research to date on the actual effects of those concerns on prices and values. Two of the most frequently cited studies involving prices in portions of Pennsylvania and New York above the Marcellus Shale formation have significant model specification issues. The limited information presented in each study also makes it difficult to determine their statistical reliability. The two articles also acknowledge that impacts can vary by source of domestic water (domestic well vs. central piped water) and that the price impacts reflect concern that may be eliminated by new federal, state and local regulations concerning the fracking process.

Research into the effects of fracking on real estate prices and values has just begun. Much more work needs to be done. And as new regulations are adopted, it will be possible to determine their effect on prices and values. Recognized and generally accepted appraisal methods developed in response to various environmental issues and situations are available to determine the impact of fracking and the resulting environmental issues. Those generally accepted research methods have been effective in understanding the impacts of past ground water

contamination from oil exploration and methane gas leaks from landfills. If past experience is a guide, any adverse impacts on home prices and values resulting from environmental conditions resulting from fracking, if and when they occur, will likely be only temporary in nature, and can be eliminated or minimized by sound governmental regulations and programs, thorough investigation of any spills or gas leaks, and appropriate remediation in accordance with well-established health and safety standards. ■

ENDNOTES

1. Marcellus Shale Coalition, "Shale Impact Fee Tax Revenues 'A Tremendous Help' for Pa. Communities," June 4, 2014, *http://marcelluscoalition.org/2014/06/shale-impact-fee-tax-revenues-a-tremendous-help-for-pa-communities.*
2. Properties can transact with or without, the rights to natural gas production. Previous owner may have captured lease payments for future production.
3. Terence M. Fay, "Fracking: Economic and Environmental Considerations," *Oil and Gas Monitor*, July 2, 2012. *http://oilandgasmonitor.com*. A study by the Pennsylvania Chapter of the National Association of Royalty Owners as referenced in a 2013 Allegheny Institute report also reports that royalty payments were "typically not above 12.5 percent in the beginning, but as the boom progressed the royalty share has ranged up to 20 percent, depending on the individual contract." Allegheny Institute for Public Policy, "Marcellus Royalty Payments Rising Rapidly," May 30, 2013, *http://www.alleghenyinstitute.org/marcellus-royalty-payments-rising-rapidly/*.
4. The legal authority of New York local governments to adopt fracking moratoria has been challenged in a series of lawsuits.
5. According to the article, Pennsylvania is "one of only a few states in the nation that does not have private water well construction standards" and that the state needed new regulations to "to address pre-existing water quality problems and make sure water wells are stable enough to handle any nearby industrial activity, including oil and gas operations." Laura Legere, "*Sunday Times* review of DEP drilling records reveals water damage, murky testing methods," May 19, 2013, *http://thetimes-tribune.com/news.*
6. *http://marcelluscoalition.org/category/library/recommended-practices/.*
7. *http://www.astm.org/sn/features/hydraulic-fracturing-nd12.html.*
8. "Hydraulic Fracturing: Meeting the Nation's Energy Needs While Protecting Groundwater Resources," National Ground Water Association, Feb. 19, 2014, pp. 2–3.
9. *www.bloomberg.com/news/2014-05-09/epa-considers-requiring-disclosure-of-fracking-chemicals.html.*
10. The Montana Board of Oil and Gas Conservation (MBOGC) adopted new rules in August 2011 related to prior approval for fracking operations, disclosure of the composition of fracking fluids, and well construction and testing.
11. In 2010, Wyoming became the first state to require disclosure of some of the chemicals used in fracking fluids. Montana in 2013 adopted additional rules requiring testing of wells and springs within 0.5 miles of drilling sites both before and after drilling.
12. California passed legislation in 2013 requiring drilling companies to obtain fracking permits, notify neighbors of proposed fracking locations, publicly disclose some fracking chemicals, and test and monitor groundwater quality.
13. Illinois in 2013 enacted what some have called the "strictest regulations" in the country. The new rules not only require public disclosure of fracking chemicals and groundwater testing and monitoring, but also "hold the companies liable for contamination."
14. State licensing laws require real estate appraisers to follow the *Uniform Standards of Professional Appraisal Practice* (USPAP) promulgated by the Appraisal Standards Board in the late 1980s in the aftermath of the federal bailout of the savings and loan industry.
15. USPAP 2014–2015 Advisory Opinions, p. A-20, pp. 177–178.
16. A Fall 2011 article in *Natural Resources & Environment* estimated there had been 15 to 20 lawsuits filed since September of 2009. The article claimed that "nearly all of the plaintiffs in these suits are either landowners who leased oil and gas rights to the defendants or landowners who reside in close proximity to where hydraulic fracturing operations were conducted." Barclay Nicholson and Kadian Blanson, "Tracking Fracking Case Law: Hydraulic Fracturing Litigation," *Natural Resources & Environment*, Vol. 26, No. 2, American Bar Association, Fall 2001. Some cases have involved claims for adverse impacts to prices and values as well as loss of use and enjoyment of plaintiffs' homes. Most have involved one or two plaintiff homeowners, or members of one family, but others have included a larger number of homes. See, for example, *Fiorentino v. Cabot Oil & Gas Corp., et al.*, No. 3:02-cv-02284 (M.D. Pa., Nov. 19, 2009) involving property value impact and other claims by 19 Susquehanna County families. In Arkansas, three class actions were filed in federal district court. Two of the cases involved a proposed class consisting of all Arkansas residents who reside or own property within three miles of wells and gas extractions operations. See, *Ginardi v. Frontier Gas Services, LLC, et al.*, No. 4-11-cv-0420 BRW (E.D. Ark. May 17, 2011); *Tucker v. Southwestern Energy Co., et al.*, No. 1:11-cv-0044-DPM (E.D. Ark. May 17, 2011); and *Berry v. Southwestern Energy Co., et al.*, No. 1:11-cv-0045-BRW (E.D. Ark. May 17, 2011).
17. USPAP, 2014–2015, supra, FAQ 160, p. F-73.
18. For detailed presentation and discussion of these techniques, see generally, the 2010 Appraisal Institute seminar entitled *Analyzing t he Effects of Environmental Contamination on Real Property* and

Thomas O. Jackson, PhD, MAI, "Methods and Techniques for Contaminated Property Valuation," *The Appraisal Journal*, October 2003, p. 311.

19. "The fact that a property is impacted by a detrimental condition does not automatically mean that it has a material impact on the property's value. Detrimental conditions may or may not cause a material impact on value. Frequently, detrimental conditions have no material impact on value whatsoever." Randall Bell, MAI, with contributing authors Orell C. Anderson, MAI; Michael V. Sanders, MAI, SRA, *Real Estate Damages: Applied Economics and Detrimental Conditions*, Second Edition, The Appraisal Institute, 2008, p 238.

20. The two studies are Lucija Muehlenbachs, et al., "Shale Gas Development and Property Values: Differences Across Drinking Water Sources," National Bureau of Economic Research, Working Paper 18390 (September 2012), available at *http://public.econ.duke.edu/~timmins/w18390.pdf;* and Lucija Muehlenbachs, et al., "The Housing Market Impacts of Shale Gas Development," National Bureau of Economic Research, Working Paper 19796 (January 2014), available at *http://public.econ.duke.edu/~timmins/MST_AER_1_3_2014.pdf*.

21. Brian H. Hurd, "Valuing superfund site cleanup: evidence of recovering stigmatized property values," *Appraisal Journal*, October 2002. Pp. 427–431

22. *The Appraisal of Real Estate*, 14th ed. (Chicago: The Appraisal Institute, 2013), p.295.

23. A 2012 article in *Real Estate Issues* discussed the regression modeling problems encountered in New Orleans in the wake of Hurricane Katrina. Richard J. Roddewig, CRE, MAI, FRICS; Charles T. Brigden, CRE, ASA, FRICS; and Gary R. Papke, CRE, MAI, AICP, "Real Estate Counseling in Class Action Litigation: Determining Real Estate Damages from Natural Disasters," *Real Estate Issues*, Volume 37, No. 2 and 3, 2012, 77, at 93. Because of the regression modeling problems, New Orleans and Louisiana Office of Community Development officials had decided by January of 2007 to commission individual appraisal reports by local appraisers to determine pre-storm values for purposes of the Road Home Program to provide aid to New Orleans home owners.

24. See, for example, Thomas O. Jackson, Ph.D., MAI, "Methods and Techniques for Contaminated Property Valuation," *The Appraisal Journal*, October 2003.

25. The Instructor Notes to the 2010 Appraisal Institute seminar entitled *Analyzing the Effects of Environmental Contamination on Real Property* states that regression modeling is useful in measuring "the average differences between groups of properties (impacted and non-impacted neighborhoods)" but "it is not used for estimating individual property values." (Seminar, Part 4, Instructor Notes, pp. In-15 and In-16). However, there may be some situations in tax assessment appraisal practice when mass appraisal modeling to determine the individual value of a contaminated property is appropriate. And, regression modeling to determine impacts on values of individual properties may also be appropriate when used (and weighted appropriately) in conjunction with other contaminated property appraisal techniques, such as individual appraisal reports using two sets (affected and unaffected) of sales comparables, trend line analysis and case studies.

26. Muehlenbachs, et al., 2014, p. 36.

27. Ibid., p. 37.

28. As the 2012 study states, a 2005 investigation of "exposure to sour gas wells and flaring oil batteries in Central Alberta, Canada" found a negative property value impact of 3.0 to 4.0 percent and a 2012 paper analyzing prices in Washington County, Pennsylvania, found only a "small negative impact on property values." Muehlenbachs, et al. (2012), p. t 5–6. The two referenced studies are P.C. Boxall, W. H. Chan, and M.L. McMillan, "The impact of oil and natural gas facilities on rural residential property values: a spatial hedonic analysis," Resource and Energy Economics, Vol. 27, No. 33, 248–269; and H. Allen Klaiber and Sathya Gopalakrishnan, "The Impact of Shale Exploration on Housing Values in Pennsylvania," Working Paper, 2012.

29. Other locational variables relate to distance from an MSA, various demographic characteristics of the census tract in which the home is located, distances from well pads, number of wellbores and number of undrilled permits in the vicinity.

30. See "Lowball gas leases haunt Pennsylvania landowners," *The Leade*r (Corning, N.Y.), July 25, 2011. Available at: *http://www.the-leader.com/article/20110725/News/307259925#307259925*.

31. Muehlenbachs, et al., 2014, at 23.

32. Ibid.

33. The Muehlenbachs, et al., attempt to control for neighborhood "unobservables" raises the following fundamental issue in specifying every regression model: No model can property account for all of the independent variables that affect prices paid for real property and is always subject to the "omitted variable" problem. See George Letz and Ko Wang, "Residential Appraisal and the Lending Process: A Survey of Issues," *Journal of Real Estate Research*, Vol. 15, Nos. 1 and 2, 1998. There is also no agreement among economists as to which factors affecting price should be included in a model. Scott Atkinson and Thomas Crocker reviewed 15 hedonic price value models produced by other researchers. They found little agreement as to which independent (predictor) variables should be included. The 15 studies recognized 110 different potential independent variables. The number of predictor variables used typically ranged between 15 and 18, with one study using 29 and another only 11. See, "A Bayesian Approach to Assessing the Robustness of Hedonic Property Value Studies," *Journal of Applied Econometrics*, Vol. 2, pp. 27–45, 1987.

34. The authors explain this "matching" process as limiting the sales

actually analyzed based on four criteria: (1) sales within six km of a well pad; (2) homes in the same census tract; (3) that occurred in the same year; and (4) differentiation between homes on wells and those on centrally supplied piped water.

35. The standard deviations for lot size (acres), PWSA, and PA/Off are particularly large. That is solid evidence of unusually large outliers in the variables. This is particularly important in terms of lot size because, as the authors readily admit, lot size is an important contributor to the price that drilling companies are willing to pay for leases.

36. One of the lots in Boudreaux Estates actually contained a producing well.

37. *The Houston Chronicle* reported that 166 wells were tested in Boudreaux Estates and two nearby subdivisions. High levels of chlorides were reported in 43 wells (25.9 percent) and high levels of benzene levels in 15 wells (9.0 percent) "Cumulative Monthly and Quarterly Water Treatment System Analytical Results in Boudreaux Estates," as found on website *http://www.tomballwatersettlement.com*. This website was established pursuant to Cause 2000-60119 *Wayne Sisson, et al. vs. Exxon Mobil Corporation*, in the 125th Judicial District Court, Harris County, Texas.) However, test results posted on the Internet after settlement of litigation over the contamination showed only four wells in Boudreaux Estates with even a single test result with benzene levels above heath risk levels of five ppb.

38. Gary Zarker, director, Seattle Engineering Department, "Seattle-Kent Good Neighbor Program: Final Report 1990," as included in Richard J. Roddewig, MAI, CRE, editor, *Valuing Contaminated Properties: An Appraisal Institute Anthology*, Appraisal Institute, 2002, p. 508.

39. Zarker, supra, as included in Roddewig, supra, p. 509.

40. Ibid.

41. For detailed information about the various ways in which value insurance programs can be structured, especially to resolve concerns about the impact of contamination on market value and future sale prices, see, Jerry M. Dent, II, CRE, FRICS, and Christina M. McLean, CRE, CFA, "Value Assurance Programs: An Alternative Response to Property Value Disputes," *The Environmental Litigator*, Vol. 20, No. 2, Spring 2009; and Christina M. McLean, CRE, CFA and Jerry M. Dent, II, CRE, FRICS, "Value Assurance Programs: A Case Study in a Model City," *The Environmental Litigator*, Vol. 22, No. 4, Summer 2011.

42. The article is Elisabeth N. Radow, "At the Intersection of Wall Street and Main: Impacts of Hydraulic Fracturing on Residential Property Interests, Risk Allocation, and Implications for the Secondary Mortgage Market," Albany Law Review, Vol. 77, Issue 2, pp. 673–704 (April 16, 2014), available at *http://www.albanylawreview.org/Articles/Vol77_2/77.2.0673%20Radow.pdf*.

43. *http://HUD.gov.offices/adm/hudclips/handbooks/hsgh/4150.2.*

44. Licensed real estate appraisers, like the real estate brokers and the general public, look to the federal and state health and safety standards as well as investigation and remediation action plans and reports when deciding whether a particular level of a substance amounts to "environmental contamination" that needs to be reported and considered in the appraisal process. Advisory Opinion 9 (AO-9) of USPAP defines "environmental contamination" as "adverse environmental conditions resulting from the release of hazardous substances into the air, surface water, groundwater or soil. Generally, the concentrations of these substances would exceed regulatory limits established by the appropriate federal, state, and /or local agencies." USPAP, 2014–15 Edition, p. A-17, Lines 77–79.

45. The process by which licensed real estate appraisers handle environmental issues on FNMA and Freddie Mac appraisal forms is the subject of one of the sessions of the educational sessions at the Appraisal Institute's 2014 annual meeting in Austin, Texas. See, "URAR Form Appraisal Reports and Adverse Environmental Conditions: Issues, Problems and Techniques," *www.appraisalinstitute.org/2014-annual-meeting-sessions-descriptions-and-speakers*.

46. Richard J. Roddewig, CRE, MAI, FRICS; Charles T. Brigden, CRE, ASA, FRICS; and Gary R. Papke, CRE, MAI, FRICS, AICP, "Real Estate Counseling in Class Action Litigation: Lessons from Hurricane Katrina," *Real Estate Issues*, Vol. 37, Nos. 2 and 3, 2012.

47. Charles Corcoran, Ph.D., CFA, and Fei Liu, "Accuracy of Zillow's Home Value Estimates," *Real Estate Issues*, Vol. 39, No. 1, 2014, 45, at page 48.

Valuation of Big-Box Retail for Assessment Purposes: Right Answer to the Wrong Question

BY DAVID CHARLES LENNHOFF, CRE, MAI

INTRODUCTION

What is it about the way big-box retail property is being valued for tax assessment purposes that results in the wrong answer? Surprisingly, it can be traced to a misunderstanding of real estate appraisal fundamentals. These properties are never built speculatively, then put up for rent or sale. Instead, they are built to suit, and often built to suit, sold and leased back. The occupant never leaves the building. Also, they are custom built to capture a particular retailer's business image. The exterior design is intended to strike a familiar chord with the customer. A passerby sees the exterior of a Home Depot, for example, and instantly recognizes it. The interior similarly matches the tenant/occupant's brand standards.[1] Unfortunately, when the property is sold—for whatever reason—the new buyer often must endeavor as hard to remove the recognizable trade dress as the original occupant invested in building it. Recently, for instance, Englewood (Lemont, Ill.-based Englewood Construction) turned a former Circuit City store into an H. H. Gregg…the work involved gutting the interior and installing the new tenant's brand standards. The exterior was completely altered as well to make sure that customers see H. H. Gregg and not a former Circuit City.[2] This article reviews the fundamentals that are so frequently misunderstood—value in use vs. market value, leased fee interest vs. fee simple estate, market rent vs. contract rent, and real property vs. intangible personal property—and then discusses proper application of these concepts in the context of each of the three approaches to value. Finally, a review of relevant decisions from various jurisdictions, though not comprehensive, is included to help illustrate the concepts in a legal context. Armed with this information, both property owner and assessor alike will be better prepared to understand how these properties should be properly assessed.

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THE EVOLUTION OF BIG-BOX REALTY

Prior to examining the valuation issues, it is useful to review the evolution of this real estate product and to study the trends that are influencing its future, and, in turn, the way it must be valued.

Big-box retail was born in 1962. That was the year Walmart, Kmart and Target all opened their first large discount stores. As they grew, the new big-boxes began offering a broad selection of merchandise and low prices to a growing population of suburbanites. These chains boomed in the early 1990s, and began expanding from the suburbs into small towns, fueled by a strong stock market and easy credit. The housing boom propelled the big-box retailers into the new millennium with increased

demand and further expansion. Then came the 2007–2009 recession and consumers pulled back.[3] According to Sprague, with the recession came a dramatic shift in retail. Consumers began buying more products online. That shift of 18–25 percent of online purchases began to affect brick-and-mortar stores. There became a real case for downsizing stores. *Amazon.com* began as an online book retailer in 1993. By the late 90s it had expanded to other consumer goods and overnight delivery, forever changing the retail landscape. Most retail chains and "mom-and-pop" stores were not ready for this dramatic change in profit margins and access to quick delivery.

Other forces began working against the big-box model. Aging baby boomers no longer had kids at home and didn't need to stock up on food and packaged goods or buy new appliances. Retail developers began to see both big and small retailers push back on renewal of leases and in many cases scaling down in size rather than renewing or expanding. By 2016, Richfield, Minnesota-based Best Buy plans to have as many as 800 Mobile Stores, up from 305 now. It's part of a plan to generate revenue from warranties, accessories and connections between phones, tablets and other electronics.[4] Other trends influencing big-box values include omnichannel retailing and 'Social Curation,' both of which involve retailers leveraging shopper social data and insights to curate product assortment online and in-store. Retailers looking to differentiate themselves with shoppers will invest in 'recognizing' or knowing shoppers across platforms and routes to market and providing individualized, customized messaging and content through each.[5] Some see a risk the brick-and-mortar store will evolve into a 'showroom' for the e-commerce vendor. That is, the consumer will find what he or she wants to buy online, then visit a store to view it, then return home and purchase it online; or, more recently, visit the store and scan the item of interest on a smartphone, then order the item on the spot from an online merchant. All of this information will be helpful in understanding functional and external obsolescence in the cost approach; rent, vacancy and cap rates in the income approach; and adjustments in the sales comparison approach.

VALUATION TERMS AND CONCEPTS

Experience has shown that all three traditional approaches to value—cost, sales comparison and income capitalization—are being used in the valuation of big-box realty. Sometimes, however, the applications are flawed by fundamental mistakes with respect to what is being appraised. That is, the valuations typically reflect either investment value, value in use or value of the wrong interest. These errors are largely a result of confusion about very basic valuation concepts. A review of key terminology is a logical beginning toward an understanding of the valuation issues involved.

The following terms are at the heart of big-box valuation methodology.

> **Market Value:** *The most probable price, as of a specified date, in cash or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress.*[6]

A number of different definitions of market value can be observed in various publications, courses and case law, and it is important that the appraisal be based on the one applicable in the property's jurisdiction. Most, however, share the same basic characteristics: the assumption of a sale of defined rights occurring on the date of appraisal, willing and typically knowledgeable buyer and seller, and reasonable exposure. It is also implicit that the buyer and seller are aware of—and the price is based upon—the property's highest and best use, which is not necessarily its current use. Critical are which rights are being valued and the fact that a transfer of those rights occurs. It is not possible to get the value right if the type of value and the rights appraised are wrong. Misunderstandings such as these are at the heart of the confusion relating to the valuation of big-box realty.

> **Investment Value:** T*he value of a property interest to a particular investor or class of investors based on the investor's specific requirements.*[7]

In contrast to market value, investment value is value to an individual, not necessarily value in the marketplace.[8] It is obvious how a misunderstanding of these terms can result in erroneous valuations. Consider a jurisdiction where real estate assessments are to be based on the market value of the fee interest in the property. Assume the property is currently owner-occupied by a Lowe's store for which it was custom built. Market value would be the price the property would fetch had it been offered on the open market to a pool of knowledgeable buyers. It would not

be the value to Lowe's. Furthermore, the custom features that distinguish it as a Lowe's big-box, such as size of building and exterior appearance, and for which Lowe's was willing to pay above and beyond what it would have otherwise cost, carry little if any value to a buyer other than Lowe's. In fact, for reasons illustrated in the earlier Circuit City to H. H. Gregg transaction, the buyer may pay less because they will have to spend money to "de-Lowe's" the property.[9] This is analogous to the resale of a custom built house. Take the case of a very expensive house in Potomac, Maryland, just outside of Washington, D.C. The owner for whom the house was built put an indoor racquetball court in the lower level, which added $70,000 to the original cost. It was very professionally built and state of the art. The owner loved the court. Upon resale, however, the seller learned a hard lesson: The market did not want a racquetball court, regardless of how nice a court it was. In fact, not only would they not pay more because the court was there, they actually penalized the price in an amount equal to the cost to convert the space to more traditional living area. This classic case of functional obsolescence is exactly what occurs when you must assume a sale of the Lowe's property. The question becomes how much would the market pay for the property (market value), not how much would Lowe's pay for the property (investment value).

> **Value in Use:** *The value of a property assuming a specific use, which may or may not be the property's highest and best use on the effective date of the appraisal. Value in use may or may not be equal to market value but is different conceptually.*

The confusion with this term and market value, which assumes highest and best use, is similar to the confusion between market value and investment value. What happens is the appraiser looks at the building and sees the occupant, often the entity for which the building was built. The appraiser then makes a leap of faith and assumes that occupant/use is the highest and best use. This leads to value in use rather than market value. Again the focus must be on the assumption of a transaction. What would the hypothetical new buyer desire? Another Washington, D.C. example may help illustrate the issue. A local big-box home-improvement chain, Hechinger, existed here from 1911 to 1999. One of its vacated stores was end-cap space in a community shopping center in Loudoun County, Virginia. Although the space had been perfect for Hechinger, the owner of the center tried in vain for several years to re-lease the space. Because it was so large and deep there were no takers. Ultimately, what the owner had to do was carve the space into three more traditionally sized stores, then string curtains across the back 20 feet and just lease the front part. No one wanted, or was willing to pay rent for, the extra depth that was so suitable for Hechinger. An appraiser confusing value in use with market value would ignore the functional obsolescence associated with the extra depth and tax the property on the basis of its value in use to Hechinger.

> **Fee Simple:** *Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.*[10]

The owner of the fee interest retains the right to sell, lease, occupy, etc. Therefore, the fee refers to the building/property vacant and available to be leased. It does not refer to being leased at market rates. Any lease would compromise the interest, as the owner would no longer have the right to occupy. The problem related to the misunderstanding of this term frequently manifests itself in sale/leaseback transactions. A sale/leaseback is defined as a financing arrangement in which real property is sold by its owner/user, who simultaneously leases the property from the buyer for continued use.[11] The property is never on the market for rent and is never vacant. The lease does not represent market rent for the real property; in fact, it is usually simply amortized construction cost, often to include interior leasehold improvements.[12] Because it represents the amortization of cost that reflects the original occupant's preferences, usually it is above market. Imagine if the house with the racquetball court were leased on the basis of its cost new. The full fare for the functionally obsolete court would be reflected in the rent so calculated. An appraiser valuing a sale/leaseback property will often take the rent so developed and capitalize it as representative of market rent. Furthermore, he usually ignores the fact that the fee simple assumption requires consideration for time and expense of lease up.

> **Leased Fee:** *A freehold (ownership interest) where the possessory interest has been granted to another party by creation of a contractual landlord-tenant relationship (i.e., a lease).*[13]

Note that the definition does not just refer to situations in which the property is leased at above or below market rates, or something other than market rent. It refers to any situation in which the occupancy has been given up in exchange for rent. The confusion between leased fee and

fee simple seems to be the fallacy in logic that if a property is leased at market rent it represents the fee interest. When this confusion occurs the appraiser ends up valuing the wrong interest; in other words, he answers the wrong question.

> **Market Rent:** *The most probable rent that a property should bring in a competitive and open market reflecting all conditions and restrictions of the lease agreement, including permitted uses, use restrictions, expense obligations, term, concessions, renewal and purchase options, and tenant improvements (TIs).*[14]

The keys to understanding the issues relating to this concept are "competitive and open market." Just as with market value, market rent assumes exposure on the open market. The problem with many valuations of big-box realty involves a sale/leaseback or other prearranged financing arrangements in which the property is never exposed on the market. The rent was just a calculated number, based on the cost of construction to the occupant for whom the building was built. The fact that there are a lot of sale/leasebacks out there, and that they sell regularly, confuses many appraisers into thinking they must represent market rent.

> **Distress Sale:** *A sale involving a seller acting under undue duress.*[15]

The way to establish that a sale was not distressed is verification that terms and conditions were conventional and under open competitive market conditions.[16] Recall the issue with market value and the assumption of a transaction as integral to it. All first-generation big-box retail real estate is built to suit. That is, none is built speculatively, and then put on market for rent or sale. When valuing these properties under the assumption of a sale, the appraiser must assume the property was marketed for a reasonable exposure period to knowledgeable buyers. As a result, the hypothetical sales transaction would necessarily involve a second-generation buyer; that is, someone other than the current occupant. And there are a lot of second-generation transactions involving big-box retail real estate available. (Even if the appraiser were to include the current occupant as one of the pool of potential buyers, there is no reason the occupant should be willing to pay more than a dollar more than the rest of the pool. Why should he?) As described in the evolution of big-box realty section, trends indicate downsizing is prevalent, and a lot of the larger stores are either being sold or the occupant is looking for opportunities to sublease space in the store. Walmart stores, whose Supercenters typically encompass over 185,000 square feet, has announced plans to build a number of 30,000–60,000 square foot stores.[17] Target is planning smaller future stores because it is going into more urban locations where it is harder and more expensive to buy larger tracts of land. It is planning stores that will be 60,000 to 100,000 square feet, compared with 135,000 in a traditional Target. Office Depot could reduce store size from 24,000 square feet to about 15,000 to 17,000 square feet.[18] Lowe's recently experimented with a 50,000-square-foot Lowe's Express model, which it premiered in Wall, New Jersey in June 2013.[19] Lowe's also recently purchased 72 Orchard Supply Hardware stores that average just 36,000 square feet of selling space compared to 112,000 square feet of selling space for an average Lowe's store.

Another reason a big-box occupant might choose to move is to improve its productivity and increase profits.[20] This has nothing to do with the existing site being a bad location necessarily, rather it is simply a strategic decision based on a theory that tells us that the tenant will not immediately exercise this option (to relocate) until the net operating income exceeds the net operating income at the current store by an amount to compensate for the costs of moving, including possibly poorer sales at the new location.[21]

All of these are helpful in explaining why there is ample evidence of transactions of big-box stores in the second-generation market, and that these sales do not represent distressed property.

The problem occurs when the appraiser incorrectly classifies all second-generation sales as "distressed." However, there is no distress to them. They receive a normal marketing time and typical exposure, and there is no undue duress involved with the seller. Ample evidence of this is found on the websites of most of the big-box retailers, (for example, *http://www.walmartrealty.com/Listings/#PropType[]=Buildings&Listings* or *http://www.lowes-realty.com/search.aspx?t=buildingformerlowesstores*) where they list former stores being marketed for sale.

So, when the question is: what would the big-box store currently owner-occupied by a particular brand have sold for had it been offered on the open market for a typical exposure time—which is exactly the question being asked when market value of the fee interest is sought—these second-generation sales should not be viewed as distressed, but in fact are the best evidence of the correct

answer. Stated differently, the value of existing property must be based on the market for existing property…not on (the cost to future user of) 'to-be-built' properties.[22]

> **Functional Obsolescence:** *A loss in value due to something inside the property boundaries; it can be an overimprovement, an underimprovement, or something that is not there.*[23]

A McDonald's store is one of the most easily recognizable pieces of real estate in the world. This is because they all exhibit the expensive trade dress that distinguishes them from other, usually freestanding retail food establishments. Both the exterior and interior are custom fit to McDonald's business image. If you were estimating the market value of the fee interest in the real property, however, none of these costly distinguishing features would be included. That is because, in answering the question of how much would this real estate have sold for on the open market had it been exposed for a typical exposure time—again, the question being answered when market value of the fee is asked—you would not be answering how much would McDonald's pay, but how much would a knowledgeable pool of informed buyers pay. As with the Circuit City example presented earlier, the answer is: a lot less than cost new. The expensive trade dress—so important to McDonald's—represents functional obsolescence when the property is put on the open market (either actually or hypothetically, as is required by the definition of market value).

> **External Obsolescence:** *A loss in value due to something outside the property boundaries. An improvement may have been built just right, but something outside the property causes a loss in value. External obsolescence is caused by problems having to do with the location or the market.*[24]

Then e-commerce leveled some of their big-box tenants, hurt others and ignited a downsizing trend.[25] After 50 years of putting mom-and-pops out of business, big-box retail is having a mid-life crisis. A slow economy has hurt same-store sales, narrowing margins at big stores. Meanwhile, consumers, armed with price-comparison technology, are visiting more stores seeking deals or exclusive merchandise rather than making one-stop, fill-the-cart excursions.[26] We're undergoing a seismic shift. People are still cutting back. People are buying more products online so there is a real case for downsizing stores.[27] All of this, plus changes in the location, etc., represents external obsolescence, which often explains why cost new does not equal value. After all, depreciation is, by definition, the difference between cost new and value.[28] Failure to recognize external obsolescence—although not unique to big-box retail valuation—results in an overstatement of the value.

> **Intangible Assets:** *Nonphysical assets, including but not limited to franchises, trademarks, patents, copyrights, goodwill, equities, securities, and contracts as distinguished from ph*ysical assets such as facilities and equipment.[29]

Any contribution to value created by intangible assets must be removed from the equation when market value of the real property is sought. If only tangible assets are subject to property taxation, then the value of monetary and intangible assets must be extracted as a first step.[30] With respect to big-box retail, the cachet associated with Lowe's, Walmart and others known worldwide is undeniable. The exterior colors and façade design send a clear signal to passersby that the business is in place. Any increment these intangibles create in rent, occupancy, capitalization rates and comparable sales must be removed.

> **Net Lease Properties:** *In general, income-producing property leased, often for 20 years or longer, to a national creditworthy tenant. Some real estate market studies treat net lease properties as a distinct property type.*[31]

More specifically, however, the reference here is to single-tenant, free-standing retail real estate. Such properties are not leased on a square-foot basis, as is multi-tenant real estate. Rather, the rents are a function of property construction cost and, therefore, must be acceptable to tenants on the basis of anticipated business earnings potential…real estate appraisals do not take into consideration tenant economics. They instead emphasize landlord economics. Single-tenant retail properties are not leased in an auction marketplace because they are not speculatively constructed. Instead, single-tenant retail property rents are a function of the cost to build the property and are affected by long-term interest rates and credit risk…Consequently, a lease becomes essentially a mortgage substitute and is part of a corporate strategic financing decision…the link between rents and tenant economics is undeniably direct.[32] So, these transactions have not been exposed to the market—which is a criterion of market rent—and thus do not represent indications of market rent. They are abundant, however, and are often

inappropriately incorporated into direct capitalization analysis. (They are abundant indeed, to the extent that there are numerous websites devoted exclusively to net lease properties. *NNNEX.com*, for example, is a popular net lease site.) To use them as indications of market rent for the purposes of estimating the market value of the fee interest in a big-box real property analysis is wrong on a couple of levels. First, inasmuch as they are not rented in an auction marketplace (exposed on the market for a typical period of time), they are not representative of market rent. Secondly, because they represent contracts in place they are not representative of the fee simple interest. Using net lease transactions as comparables results, at best, in providing an indication of value (probably use value rather than market value) of the leased fee interest in the assets, which potentially includes both intangible and tangible personal property.

> **Build to Suits:** *An arrangement where a landlord builds or alters a property to the specifications of the tenant and recovers the cost of the improvements as part of the rent.*[33]

The issue relating to big-box retail and build to suits has already been introduced. In effect, the properties are never built speculatively and then placed on the market for either sale or rent. Rather they are custom built to suit the needs of a particular entity. As such, whether or not they reflect the market is a function of whether or not functional obsolescence exists. However, if the product were for all intents and purposes generic, as some would suggest, then one would expect to see speculative construction. The fact that they are never built speculatively strongly indicates they are not one-size-fits-all. When the costs of the build to suit are used as a proxy for market value the appraiser inappropriately mixes value in use with market value. Referring again to the earlier example of the house with the racquetball court, were cost equal to value the sales price on the open market would have equaled not penalized the cost of construction.

THE THREE APPROACHES TO VALUE AND MARKET VALUE OF THE FEE INTEREST

All three of the traditional valuation approaches are potentially applicable in the market value estimate of the fee interest in big-box realty. Whether or not an approach can be used is a function of the availability of data and support for the elements of its application, as well as legal rules, regulation and precedent in the specific jurisdiction. As will be demonstrated, all of the terms and concepts reviewed earlier factor into the correct methodology for each of the three approaches.

Sales Comparison

The definition of market value asks the question, what is the most probable price for which the subject property would have sold under specified conditions? As such, sales comparison becomes a compelling approach when it is market value that is sought. The key to correct application is identification of comparables that match the criteria of the definition. Recall, regardless of whether the occupant has any intention of selling, an opinion of market value demands the assumption of a willing seller. So, if Lowe's is occupying a building custom built by them for them, and an appraiser is asked to estimate its market value, the appraiser must assume the vacant building will be turned over willingly. It follows then that the very best comparable sales would be sales of vacant big-box buildings, and there is ample evidence of these transactions.

A study of multiple sales of both Lowe's and Target real property revealed surprisingly consistent sales prices per square foot of building. Of 11 transactions of Lowe's properties, the prices ranged between $18.48 and $39.34 per square foot. If the one high and one low extreme are excluded the range tightens to $19.34 to $29.00. These transactions occurred between March 2010 and December 2013, and across eight different states. If adjustments are considered for slight differences in store age and condition, building size, lot size, location, and market conditions, the range tightens even more. The Target sales are equally compelling. From the 20 transactions studied the unadjusted range was $19.04 to $45.52. When the two highest and two lowest transactions are removed the range tightens to $19.47 to $33.12, remarkably similar to the Lowe's sales range. The Target sales occurred between October 2011 and September 2013 and across ten states. In addition, on April 2, 2014, Walmart Realty publically listed 25 big-box properties for sale on *http://www.walmartrealty.com.* Of these, 16 ranged between $22.39 and $33.74.

These are very convincing sales data. So, where do appraisers go wrong when applying sales comparison? There are a couple of mistakes made regularly. First, instead of using properties such as those summarized, which reflect the type of value being sought and the correct rights to be appraised, uninformed appraisers rely exclusively on sale/leaseback transactions, which

more closely reflect value in use for the leased fee interest. In other words, the appraiser answers the wrong question. Furthermore, recognizing how a sale/leaseback transaction develops reveals how unrepresentative of the market value of the fee it is. Using an example: suppose Walmart buys a site and has a big-box custom built to its business standard. Once occupied, Walmart sells the property to an investor and leases it back, never vacating the building. The rent, of course, was never exposed to the market and is simply a function of Walmart's cost to acquire and construct. However, by selling then leasing back, in effect, Walmart gets back what it invested and is able to replicate the process on another site. In other words, it achieves 100 percent construction financing for its developments. Now suppose the investor turns around and sells the leased fee interest he/she holds to a second investor. The buyer is buying the very secure—bond-like—income stream from Walmart that usually extends 20 years. Notice, the income stream that is bought is the same one the first investor purchased, the income stream that was never exposed on the market. So, it should be obvious that using such a sale would hardly represent the market value of the fee interest. In summary, sale/leaseback transactions present difficulties as comparable sales. Such transactions are frequently financing arrangements in which the seller often agrees to an above-market lease rate in return for an above-market sale price. Due to the problems in deriving accurate market based adjustments for such factors, the sale may not provide a reliable indication of value. The appraiser may consider avoiding the comparable altogether or at least using extreme caution.[34]

A second problem is the use of property-purchase decisions that are affected by tax considerations, such as Section 1031 tax-deferred property exchanges.[35] These transactions, in simple terms, (involve) a trade of real estate and/or other considerations, such as cash, between two or more investors to accrue tax benefits. The name, Section 1031 exchange, relates to the IRS Tax Code section, which permits and governs such transactions. The 1031 exchange could involve one or more parcels from each investor being traded for other properties. As with sale/leasebacks, there are benefits and considerations beyond just real estate in making these transactions.[36] A further issue with 1031 sales is the necessity to complete the transaction within an often tight window of time.

Income Capitalization

Income-producing real estate is typically purchased as an investment, and from an investor's point of view earning power is the critical element affecting property value.[37] As such, as a valuation method that explicitly incorporates the income generating potential of the property it is particularly well suited to the valuation of these properties. While big-box retail real estate is frequently owner-occupied, much is leased. (Target and Lowe's, for example, want to own, not rent. Although they are willing to lease land and construct their leasehold improvements on it, they prefer not to rent improvements.) As such, careful consideration of the income approach in the valuation of these properties is essential. Almost always direct capitalization (rather than yield capitalization, which includes discounted cash flow analysis) is the income capitalization method used for assessment valuations. In fact, several courts will not allow discounted cash flow analysis as they consider it too speculative.

There are four primary components to correct application of direct capitalization: Potential gross income, vacancy and collection loss, operating expenses and an overall capitalization rate. However, given the characteristics of these big-boxes, a direct capitalization model most likely would involve a single tenant and a net lease. Therefore, vacancy—at least as a stabilized matter—and expenses can be eliminated from this discussion. So, one might consider potential gross income and the capitalization rate, as these are the two components that cause the most problems in the faulty valuations.

Potential Gross Income

The problem with estimating the market rent is the same problem that occurs in the sales comparison approach with comparable selection: it must be based on comparables that represent an amount a willing landlord and willing tenant agreed to after typical exposure on the open market. In other words, it must meet the definition of market rent. As with the second generation sales, there are lots of second generation rentals. Walmart Realty, for example, provides lists of available rentals on its website, and includes professional marketing brochures that detail building, site and area demographics. Similar information is readily available from other big-box owners as well. These are not "fire-sale" opportunities, but represent professionally marketed real estate transactions. As such, these rates represent the best answer to the question, for

how much would the subject have rented had it been exposed on the market for a typical exposure period? Faulty appraisals, on the other hand, use the build to suits and sale/leasebacks as their comparables. These rental rates, however, were not based on market rent criteria. Instead they represent amortization of custom built construction costs.

Overall Capitalization Rates

An overall capitalization rate is simply that metric that equates one year's net operating income to value. Market value of the fee interest is equal to one year's net operating income, based on market rent, divided by a market derived overall capitalization rate, less any necessary costs associated with lease up. If an ex-Walmart property sold for $30 per square foot and was rented at a market rate of $3.00 at the time, then the indicated overall capitalization rate that could be extracted from it would be 10 percent ($3/$30). The best evidence of an appropriate capitalization rate to apply to an estimate of the subject market rent would be extraction from market sales that were rented at market rates at the time of sale. Instead, however, faulty appraisals are based on capitalization rates that are either extracted from sale/leaseback transactions or taken from websites and publications, such as PricewaterhouseCoopers quarterly *Real Estate Investor Survey*, using the "national net lease market" section. These rates, however, answer the question of how much should an investor pay for the right to receive the bond-like income stream generated from the sale/leaseback? For the same reasons that sale/leaseback rent isn't equal to market rent and sale/leaseback sales prices are not equal to market value of the fee interest, sale/leaseback capitalization rates are not applicable to the answering the question asked in a real estate assessment of big-box property. Even when the correct comparables are used to develop market rent and the correct evidence is used to develop the overall capitalization rate, the appraiser (still) must account for an absorption period to achieve occupancy by a tenant.[38] This is because, by definition, fee simple means vacant and available to be leased, not as if already leased at market rates.

Cost Approach

The cost approach is most applicable in valuing new or proposed construction when the improvements represent the highest and best use of the land as though vacant and the land value is well supported.[39] The method comprises three parts: site value as if vacant, cost new of improvements, and depreciation. Almost all problems with this approach emerge from a mishandling of the latter, depreciation, with much of the error due to a confusion of value in use with market value. As with the other two approaches reviewed, the objective of a properly applied cost approach is an estimate of market value. As a result, those features—whether building size, custom finishes, ceiling heights, building depth, etc.—for which the market would not be willing to pay are deducted as obsolescence. It is important to emphasize that the approach is *not* seeking to identify how much the entity for which it was built would be willing to pay, but how much the *market* would be willing to pay. Correctly calculating depreciation is how cost-new is distinguished from value and how value in use is converted to market value.

Site Value

The site value estimate is usually straightforward. Keys to proper application are using comparables that are similar in size, location, highest and best use, and market conditions. Traffic, access and demographics are critical to location, and excess land can be an issue with size. Two other truisms: larger sites usually sell for a lower unit price than otherwise equal smaller sites. So, a 20-acre site might sell for $2.00 per square foot while an otherwise equal 10-acre site might sell for $2.50 per square foot. Surplus land often has a lower unit rate than the primary site, although not always. So, if 12 acres were needed to accommodate the improvements, and the site comprised 18 acres, the six acres of extra land would probably command a lower unit rate, all else equal. The exception would be when the extra land had a separate highest and best use and could be sold off for that purpose.

Cost New of Improvements

The cost to construct an improvement on the effective appraisal date may be developed as either the estimated reproduction cost or estimated replacement cost of the improvement.[40] If applied correctly, both reproduction cost and replacement cost will result in the same value; however, there is an important and germane difference between the two. Reproduction cost represents the cost to construct a replica of what exists; while replacement cost is cost of a substitute of what exists, using contemporary materials, standards , design and layout. So, suppose one was estimating the cost new of a Costco store that had 30-foot ceiling heights—10 feet higher than market standard. The additional cost of building the extra 10 feet plus the excess utilities expense it creates is functional obsolescence—superadequacy. The entire 30 feet would be

included in the *reproduction* cost new estimate, and then the value loss represented by the excess would be deducted as depreciation. Only the market standard 20 feet would be included in the *replacement* cost new estimate, but no depreciation for this item would be deducted, other than that for the excess utilities expense. Errors occur when an appraiser uses replacement cost new, and then deducts depreciation for the excess ceiling height. That would be double counting the obsolescence. Or, more likely, the appraiser uses reproduction cost of the 30 feet and makes no deduction for the superadequacy. Again, while he/she may be correctly estimating the value to Costco (value in use), it would represent an incorrect estimate of market value.

Depreciation

Depreciation is simply the difference between cost new plus site and market value. If cost new plus site equals market value, then there is no depreciation. There are three primary categories of depreciation and three primary methods of measuring it.

The three categories of depreciation are physical deterioration, functional obsolescence and external obsolescence. Physical deterioration refers to simply aging, the wearing out process. Functional obsolescence, on the other hand, refers to a flaw in the structure, materials or design of the improvements. It can occur when the subject does not have a feature the market demands (air conditioning, for example), or when it has a feature for which the market is unwilling to pay (the excess ceiling height). External obsolescence is a loss in value caused by factors outside a property. Examples include effects of the 2008 financial crisis (which would be properly labeled external obsolescence—economic) and location on a highway that only allows right turn in and right turn out (which would be labeled external obsolescence—locational).

The three methods of measuring depreciation are economic age/life, market extraction and breakdown. The latter is not particularly practical for these assignments so it will not be discussed further. Suffice it to say, the difference between it and the other two methods is that the breakdown method is much more comprehensive and treats each of the elements of depreciation separately, while the other two are limited in that they require that lump-sum depreciation from all causes be expressed in an overall estimate, which is rarely accurate if obsolescence is present.[41]

Economic age-life is used most frequently because of its apparent simplicity. It will work, but only if the appraiser accurately identifies the property's effective age and total economic life—often both are quite different than chronological age and total physical life. Furthermore, the more obsolescence that exists, the less likely this method will accurately capture total depreciation. And given the issues that have been described earlier, it is obsolescence that distinguishes value in use from market value.

A better method is market extraction. It is realistic and efficient as long as market sales exist, and as has been explained, they are abundant with this property type. To use an example to illustrate how it works, consider the following comparable transaction (ideally, depreciation would be extracted from more than one transaction).

Figure 1

Sales Price (adjusted for all transactional elements of comparison):	$3,750,000
Less **Site Value** by sales comparison	($750,000)
Value of the improvements:	$3,000,000
Cost-new of improvements (as of date of value)	$5,000,000
(125,000 sf x $40/sf)	
Depreciation	
In dollars	$2,000,000
In percent	40%
Percent good	60%
Age	13 yrs
Percent per year (assumes straight line)	3.08%

So, if the subject cost new was $5,400,000, and it was 10 years old and the site value was $950,000, the indicated market value would be calculated as follows:

Subject Cost-new of Improvements	$5,400,000
Less Depreciation from all causes (3% x 10 years)	$1,620,000
Indicated Improvement Value	$3,780,000
Estimated Site Value	$950,000
Total Indicated Value by Cost Approach (fee simple)	$4,730,000

Source: David Lennhoff

An appraiser might erroneously use the *Marshall Valuation Service* depreciation tables to calculate depreciation with, say, an effective age of eight years and a total life of 40 years, and conclude eight percent total depreciation, and thus overvalue the property, all else being equal, by 25 percent ($5,400,000 x .92 + $950,000 = $5,918,000). As emphasized in standards for federal land acquisitions, the estimating of depreciation by use of published tables or age-life computation is to be avoided.[42]

Reconciliation

This somewhat overlooked step in the valuation process requires the appraiser to evaluate the strengths and weaknesses of each approach applied and explain how he/she got from them to the final opinion of value. It is not an averaging process. So, when an appraiser uses sale/leaseback transactions as indications of subject market rent and an overall capitalization rate, and sale/leaseback transactions as sales comparables, an explanation will be needed as to how the indications by them apply to a fee simple conclusion. A cost approach—without adjustment—provides an indication of the fee interest; however, without proper treatment of depreciation, especially obsolescence, it is likely an indication of value in use of the fee interest. As with other approaches, perhaps a right answer, but to the wrong question.

A FEW RECENT DECISIONS RELATING TO BIG-BOX ISSUES

A comprehensive survey of case law relating to this topic is better left to an attorney; however, this discussion will summarize a few decisions that address the issues explicated in this white paper. Although obviously not exhaustive, these decisions report an understanding of the concepts presented, and the erroneous results obtained when these concepts are violated.

Lowe's Home Centers, Inc., v. Township of Marquette

Home Depot USA, Inc. v. Township of Breitung

State of Michigan Court of Appeals of Michigan Tax Tribunal Decision

LC No. 00-385768 April 2014

LC No. 00-366428 April 2014

The Lowe's decision arises out of taxpayer consolidated appeals of ad valorem property tax assessments for two big-box retail stores located in the Upper Peninsula. The tribunal found in favor of the taxpayers in both cases and rejected the townships' assessments of the subject properties. The key issue was the use of second generation sales by the taxpayer's appraiser. All of his comparables were sales of vacant and available big-box properties, instead of sale/leaseback comparables of occupied properties, which were used by the jurisdiction's appraiser. The appeals court decided the taxpayer's appraiser "properly valued the TCV of the fee simple interest in the subject properties."

CVS v. City of Richmond

Michigan Tax Tribunal

Docket 425425 October 2012

The City of Richmond opinion dealt with the appeal of the real estate tax assessment for a CVS Pharmacy store in Macomb County, Michigan. The Petitioner's appraiser relied primarily on sales comparison while the Respondent's appraiser relied on a cost approach. The tribunal concluded sales comparison was the most useful valuation method in determining true cash value of the subject property. The Petitioner's appraiser successfully established that pharmacy retailers are not motivated by the resale value of the stores and that secondary uses of such properties "result in a lower market value than the original construction cost." The tribunal continued: "like big-box stores, modern pharmacies and drugstores are specifically constructed to meet the design, location, and physical requirements of one major retailer's business needs. The build-to-suit nature of these properties creates a certain degree of functional and economic obsolescence." The Respondent's appraiser selected comparables of sale/leaseback transactions. The Petitioner's appraiser relied only on sales that were vacant and available at time of sale. The tribunal concluded: "sale/leasebacks are not true sales, but are more in the nature of a financing tool similar to a mortgage" [and] "finds that sales (the sales of vacant and available properties) best represent the fee simple interest in the subject property."

Meijer Stores Limited Partnership v. Franklin County Board of Revision and Marvin J. & Ursula F. Siesel, Shops at Waggoner LLC, and Fifth Third Bank

Supreme Court of Ohio Appeal from the Ohio Board of Tax Appeals

BTA Case Nos. 205-T-441 & 443 February 2009

This review of a decision by the Ohio Board of Tax Appeals concerning a Meijer's big-box property embraces all of the issues presented in a 2009 article that Lennhoff wrote for *The Appraisal Journal*, which the court

cites repeatedly.[43] Specifically, the court concludes: "it is clear from the report and the testimony before the Board that [Respondent's appraiser] focuses on the value in use of the subject property to the occupant for which it was originally designed and built…and intertwines the non-real estate business value of the owner occupant with that of the real estate." [The Petitioner's appraiser's] "opinion is of the value at which the fee simple interest in the subject property would sell for in the open market while [the Respondent's appraiser] indicated the value to the current owner/occupant and not what it would sell for on the open market."

SUMMARY AND CONCLUSIONS

The key issues at stake in the estimation of market value of the fee interest in big-box real property are value in use vs. market value, leased fee vs. fee simple, second generation transactions vs. build to suits and market rents and sales vs. sale/leaseback rent and prices. All of these are interrelated to a point, and when misunderstood, result in an appraiser at best providing the right answer to the wrong question. The credibility of the assessment is compromised when value in use of the leased fee interest is substituted for market value of the fee interest. On the other hand, with a firm understanding of these fundamental concepts, an appraiser is able to correctly value the mandated basis of ad valorem tax, which is usually the market value of the fee interest. ■

ENDNOTES

1. Michael Fickes, "Re-inventing Power Centers," *http://www.chainstoreage.com,* (October 2013), p. 46.
2. Ibid.
3. Mark Sprague, "The Era of Big Box Retail Dominance is Coming to an End," *http://independencetitle.com/the-era-of-big-box-retail-dominance-is-coming-to-an-end,* (November 2012).
4. Ibid.
5. Justin Honaman, "Top 6 Retail Trends to Watch in 2014," *http://risnews.edgl.com/print,* (January 2014).
6. Appraisal Institute, *The Appraisal of Real Estate*, 14th ed. (Chicago: Appraisal Institute, 2013), p. 58.
7. Appraisal Institute, *The Dictionary of Real Estate Appraisal*, 5th ed. (Chicago: Appraisal Institute, 2010), p. 105.
8. *The Appraisal of Real Estate*, op. cit., p. 63.
9. Martin A. Skolnik and Gary E. Heiland, "Big Box Retail Properties: Pitfalls of Valuation," Working Paper, p. 366.
10. *The Dictionary of Real Estate Appraisal*, op. cit., p. 78.
11. Ibid., p. 175.
12. Skolnik and Heiland, op. cit., p. 368.
13. T*he Dictionary of Real Estate Appraisal*, op. cit., p. 111.
14. Ibid., p. 121-122.
15. Ibid., p. 60.
16. Interagency Land Acquisition Conference, *Uniform Appraisal Standards for Federal Land Acquisitions* (Chicago: Appraisal Institute, 2000), p. 38.
17. David Kaplan, "Stores Reversing Big-box Trend," *http://www.chron.com/business/article/Stores-reversing-big-box-trend,* (*Houston Chronicle*, April 2014).
18. Ibid.
19. Michael L. Diamond, "Smaller Lowe's Express in Wall is First in the Nation," http://www.tmcnet.com/usubmit;-smaller-lowes-express-wall-first-the-nation, (*Asbury Park Press*, June 2013).
20. James D. Shilling, Tammie X. Simons-Mosley, and Stephen F. Thode, "Stand-Alone Centers Occupied by Big-Box Retailers," T*he Journal of Portfolio Management* (Special Issue 2005), p. 125.
21. Ibid., p. 127.
22. Michael B. Shapiro, "Big-box Retailers Beware How Assessors Overvalue Your Property," *http://www.NREIonline.com,* (September 2000), p. 52.
23. E. Nelson Bowes, *In Defense of the Cost Approach* (*Chicago: Appraisal Institute*, 2011), p. 20.
24. Ibid., p. 21.
25. Fickes, op. cit., p. 44.
26. David Welch, Chris Burritt, and Lauren Coleman-Lochner, "The Era of Big Box Retail Dominance is Coming to an End," *http://www.bloomberg.com,* (March 2012).
27. Natalie Berg, *http://www.topics.bloomberg.com/london/.*
28. *The Appraisal of Real Estat*e, op. cit., p. 576.
29. Appraisal Foundation, *Uniform Standards of Professional Appraisal Practice*, 2014–2015 ed. (Washington, D.C.: Appraisal Foundation, 2014), p. U-3.
30. Gordon V. Smith and Russell L. Parr, *Valuation of Intellectual Property and Intangible Assets*, 3rd ed. (New York: John Wiley & Sons, Inc., 2000), p. 443.
31. *The Dictionary of Real Estate Appraisal*, op. cit., p. 134.

32. Christopher H. Volk, "Single-Tenant Retail Real Estate Valuation and Financing: An Enterprise Approach," *The Real Estate Finance Journal* (Spring 1997), pp. 49–51.

33. Henry S. Harrison and Julie S. Harrison, *Illustrated Dictionary of Real Estate and Appraisal* (Reston: Reston Publishing Company, Inc., 1983), p. 35.

34. The Appraisal Foundation, "APB Valuation Advisory #2: *Adjusting Comparable Sales For Seller Concessions*" (Washington, D.C.: Appraisal Foundation, March 2012), p. 15.

35. Christopher Volk, op. cit., p. 53.

36. Skolnik and Heiland, op. cit., p. 369.

37. *The Appraisal of Real Estate*, op. cit., p. 439.

38. Skolnik and Heiland, op. cit., p. 364.

39. *The Appraisal of Real Estate*, op. cit., p. 566.

40. Ibid., p. 569.

41. Ibid., p. 598.

42. Interagency Land Acquisition Conference, op. cit., p. 20.

43. David C. Lennhoff, "You Can't Get the Value Right If You Get the Rights Wrong," *The Appraisal Journal* (Winter 2009), pp. 60–65.

The Rise of the Market for Auto Dealerships: Bad News for Landlords?

BY BRADLEY R. CARTER, CRE, MAI, CCIM

INTRODUCTION

The rise in vehicle sales has brought about a recovery in the auto industry. While this has a generally positive influence on the value of the real estate from which dealers operate, the ramifications of the industry's recovery on landlords is somewhat complex. Understanding how the boom in an industry can have negative consequences for the associated real estate is critical for property owners and those who advise them.

AUTO DEALERSHIPS: HOW THEY BEGAN, HOW THEY WORK

Since the automotive industry began more than a century ago, manufacturers have focused on vehicle design, manufacturing and brand promotion. Toward that end, retail distribution is accomplished through a network of independent dealers. Dealers receive exclusive franchises for specific trade areas and act as representatives of the manufacturer to the car-buying public.[1]

Manufacturers grant franchises to dealers, without charge, and the manufacturers and dealers are, in effect, partners in the process of marketing automobiles. The franchises are not transferable, and when a dealer change occurs the parties involved negotiate a buy-sell agreement for the dealership operating company. When multiple brands are marketed, the prospective purchaser of the dealership operating company submits applications for franchises to each manufacturer, and approval is typically subject to the buyer's demonstrating sufficient experience in the industry and having strong financial backing.

About the Author

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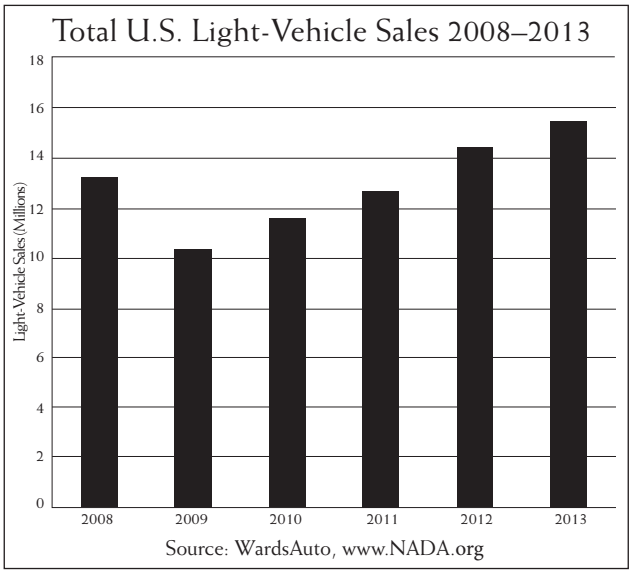
RECENT TRENDS AFFECTING AUTO DEALERSHIPS

Six years after the financial crisis, two trends have become evident regarding properties designed for automobile dealership use: 1) auto sales have skyrocketed, resulting in an increase in demand for the properties at which they are sold, and; 2) auto manufacturers are moving quickly towards standardizing the architecture and design at the dealerships marketing their products. The second trend is in response to the first—we will explore both.

The recession and financial crisis nearly crippled the auto business, but unlike many other industries, its recovery has been robust. Volume is increasing steadily, with 2013 light-vehicle sales of 15.5 million units up 7.5 percent from 2012's total of 14.4 million units.

The Rise of the Market for Auto Dealerships: Bad News for Landlords?

Figure 1



In 2013 automakers sold vehicles at higher prices with lower rebates, and higher margins coupled with increasing sales resulted in widespread prosperity. All six large publicly traded new-car dealership groups have posted higher average finance and insurance (F&I) revenue per vehicle since recording a recent low in 2009.

Figure 2

Average F&I Revenue/Vehicle			
Groups	2009	2013	Change
Asbury	$896	$1,308	46%
Group 1	$996	$1,345	35%
AutoNation	$1,104	$1,361	23%
Sonic	$929	$1,138	23%
Lithia	$960	$1,122	17%
Penske	$913	$1,040	14%
Average-all six groups	**$966**	**$1,219**	**26%**

Source: *Automotive News* (citing company reports)

The average U.S. dealership produced return on equity of 29 percent in 2013, according to *Automotive News* (citing the National Automobile Dealers Association as its source). That figure has risen in four of the past five years, and dealerships also are now enjoying record profits.

The return to profitability, and at record levels, is a trend welcomed by auto dealership owners and operators. Good times for auto dealership businesses, though, have triggered another trend that can cause enormous losses associated with the dealership's real estate component.

During and following the recession, manufacturers had been extremely flexible in auto dealership design standards, as few operators could afford a costly renovation. However, as a direct result of the improving finances of the dealers in their network, manufacturers are now focusing their attention on modernization and standardization of the properties that fly their flag. Manufacturers often impose costly standards, and can do so because of their enormous leverage in this situation. While franchisors having influence over a franchisee is not unique, there are some characteristics regarding the manufacturer/auto dealership relationship that are unique. The manufacturer can link the inventory it makes available to a franchisee to how willing they are to comply with requirements to make alterations to their property; and if the manufacturer is not satisfied, they can withhold the supply of the most sought-after models. The manufacturer can cancel a franchise agreement, which is a particularly intimidating prospect in markets when no other major manufacturer franchises remain. Or, if the dealer wishes to sell its business to another party, the manufacturer can withhold approval for the transfer of the franchise. Auto dealer franchise agreements typically include the manufacturer having a right of first refusal for the real estate, so the manufacturer can even insert itself into a simple sale of the dealer's real property.

WHO DECIDES WHAT MAKES AN AUTO DEALERSHIP FUNCTIONAL?

Generally speaking, functional utility is determined by the market. However, this truism is only partially true for automobile dealerships. In interviews with automobile dealership experts conducted in 2013 and early 2014, many expressed the opinion that the most important real estate consideration related to this specialized property type is whether the improvements are up to the manufacturer's standard, since a dated appearance can result in the manufacturer's requiring a "re-imaging" project. (Re-imaging is an auto industry term meaning remodeling or renovation; it can be as simple as changing the color scheme and signage, but is often more costly, and can include new finishes and design changes that require partial demolition and constructing additions.) Consequently, if a renovation has not been performed within the past several years, there is significant risk that the manufacturer will require one. While the market encourages owners of most types of real estate to keep their properties modern and up-to-date, the pressure on auto dealership owners is more direct.

In his 2000 article, "Appraising Auto Dealership Facilities," Charles E. Tholen, ASA, presented a detailed description of typical physical requirements at that time for dealerships based on their anticipated sales volume.[2] When asked in a 2014 interview if these requirements were still appropriate, Tholen responded, "Today, the manufacturers want all their dealerships to have a similar look, just like McDonalds."[3]

CASE STUDIES

The shift towards modernization and standardization can be very costly. When market forces suggest it's time to remodel, the design usually incorporates cost engineering, and a competitive bidding process is used throughout. However, when an automobile manufacturer requires a dealer to renovate, the requirements may be too stringent for significant cost engineering, and limitations regarding who does the work also could reduce or eliminate opportunities for savings. (There is a certain frugality that is lost when standards are set by an entity that is not paying the bill.) Investment decisions that may make sense from a business standpoint can sometimes have a horrific effect from the perspective of a real estate investment. When the owner of the property is also the owner of the dealership business being operated, it is possible that incentives from the manufacturer may make a bad real estate investment worth the cost. When the dealer is a tenant, though, and the lease does not have a very long remaining term, the landlord may be forced to pay or contribute towards a renovation that pleases no one but the manufacturer…or lose the tenant.

The following case studies demonstrate how manufacturer-mandated renovations (or re-imaging projects) of automobile dealerships often play out.

Case Study #1 - Chevrolet Dealership

The Property: There are three buildings constructed from 1985 through 1998 that total 37,920 square feet; they are supported by an 11.126-acre site fronting the on-ramp of an interstate highway within a grouping (or "cluster") of competitive dealerships. The area is in the decline stage of the real estate cycle, characterized by falling demand and rising vacancy. Median Household Income: $56,989 (five-mile radius).

The Renovation: The project required 15,941 square feet of new construction, along with partial demolition of existing structures and renovation of others. The net change in building size was an increase of 3,921 square feet. The scope of the manufacturer-mandated renovation is summarized as follows:

- A 1,540-square-foot used automobile sales office was razed in favor of additional parking;
- The office/showroom and service drop-off was razed and re-built;
- Portions of the parts area were renovated;
- 1,580 square feet of building area was added for parts delivery.

Impact: After construction, the improvements were largely concentrated in a single building, which is a more functional design. The dealership also had a newer, more modern appearance. The effective age of the improvements was reduced from approximately 23 years to ten years.

Cost Budget: $2,945,184

Financial Viability Considerations: Construction projects are considered financially viable if the increase in income (or value) is sufficient to justify the cost. Factors influencing the financial viability of this renovation and expansion included:

- The local market area was at the decline stage of the real estate cycle, which is usually not a good time for new construction projects;
- The renovated property was only 3,921 square feet larger than prior to construction, and most of the building area was still second-generation (albeit renovated) space;
- Many of the areas demolished had not reached the end of their economic life, meaning that they were razed while still contributing value;
- While the project resulted in the property having a more efficient layout and a newer, more modern appearance, it was generally functional prior to construction as well; further, even after construction it still did not have a new appearance or completely modern design.

Indications of Feasibility: The following indications were considered in assessing the project's financial feasibility:

- The value of the real estate prior to construction was $3,300,000. Adding the expansion/renovation cost of $2,945,184 resulted in the basis of the renovated property being $6,245,184, or $149.26/SF of building area (based on its size after expansion).

Market comparables consistently showed lower prices, suggesting that it may be advantageous for the current occupant to sell this property (or vacate if it were the tenant) and relocate to one of similar utility and appeal that is available at a lower cost.

- Using a market capitalization rate of 9.00 percent indicates that net income of $13.43/SF would need to be achieved to justify an investment of $149.26/SF ($149.26 x .09 = $13.43); assuming vacancy and collection loss of five percent, an absolute net rental rate of $14.14/SF would be needed to achieve this level of net income ($13.43 ÷ 0.95). Market rent comparables were materially lower than this feasibility threshold.
- While constructing a property similar to this dealership either before the renovation or after may have been financially feasible, converting the property from its original design to what would conform to the manufacturer's requirements was not. The high cost of this project was evident when comparing it with the cost to construct a similar property new. The renovation budget of $2,945,184 is only slightly less than the cost of a new building; however, the renovated and expanded building still had a relatively advanced effective age, and lacked the appeal of brand new construction. The high cost is likely attributed to the inefficiency often associated with modifying an existing property, requirements by the factory that did not lend themselves to significant cost engineering, and restraints imposed on who did the work and what materials could be used.

Return on Investment: Prior to construction, the property was valued at $3,300,000, and after construction it was valued at $4,250,000; therefore, the contribution to value made by the renovation and expansion was $950,000 ($4,250,000 - $3,300,000). By comparison, the investment required to achieve this $950,000 increase in value was $2,945,184. Business considerations may have motivated the dealer to comply with the manufacturer's requirements; however, from a real estate perspective, the project resulted in a significant loss. Consider the following indications from this investment:

- Profit From Construction: Negative $1,995,184 ($950,000 - $2,945,184);
- Return on Investment: Negative 68% (-$1,995,184 ÷ $2,945,184);
- Recapture of Investment: $0.32 on the dollar of capital investment was recovered ($950,000 ÷ $2,945,184).

Conclusion and Relevance: A real estate project not initiated by market forces can result in a big loss from a real estate investment perspective. However, an auto dealership operator seeking to retain its franchise may still proceed if the business considerations outweigh the real estate considerations. If a landlord is leasing an auto dealership property to such a franchisee, it may end up being the one with the difficult choice; pay for a renovation project that will not enhance the property's value enough to justify its cost, or watch its auto dealer tenant build its own facility elsewhere or find another existing dealership property that costs less to modernize.

When an automobile manufacturer require its franchisees to renovate their property, the results outlined above are not unusual.

Case Study #2 - Cadillac and Buick Dealership

The Property: Nine buildings constructed from 1976 through 1984 that total 141,034 square feet are scattered throughout a 24.15-acre site. The property fronts a heavily traveled, four-lane roadway near a regional mall. The area is in the recovery stage of the real estate cycle, characterized by rising demand and decreasing vacancy. Median Household Income: $51,374 (five-mile radius).

The Renovation: A renovation was recently completed at a cost of $862,747. However, Cadillac and Buick GMC required a second phase, as a result of a new image deployed by General Motors. The scope of the second phase of the renovation is summarized as follows:

- The Capital Buick GMC Showroom and an office building were gutted, completely reconstructing the interior with finishes required by the manufacturer;
- The front portions of the Capital Cadillac Showroom/ Office and Service Building were demolished and re-built;
- The angular floor plan of the showroom and office were replaced with a more "boxy" floor plan;
- A customer service area with customer drive-through bays was added;
- Site repairs were made, including resurfacing the asphalt paving at the front of the site at "customer touch point" areas;
- New signage was added.

Impact: Prior to the renovation, the property suffered from significant functional challenges: it is inordinately large for its market; the improvements are in multiple buildings that are some distance from each other, with some areas serving redundant functions; the large amount of parking exceeds the requirements of this market (while this is advantageous, it is not beneficial enough to justify its cost given high land prices in the area). After the renovation the property was more attractive with a modern appearance. However, all of its design flaws remained. The effective age of the improvements was reduced from approximately 25 years to 20 years.

Cost Budget: $4,399,281 (for the second phase of renovation being required)

Financial Viability Considerations: The renovation reflects specific requirements by the manufacturer, some of which were high-end, costly finishes. Significant capital was invested to get the dealership to look more like others under the same flag; little was done to resolve its functional issues.

Indications of Feasibility: The following indications were considered in assessing the project's financial feasibility:

- The real estate was valued at $13,500,000 prior to construction, and at $15,500,000 after renovation, indicating that the contributory value of this construction is $2,000,000. The cost of the renovation was much higher at $4,399,281, indicating that renovating the property is not financially feasible.

Return on Investment: The $2,000,000 contribution to value made by the renovation and expansion ($15,500,000 - $13,500,000) was much less than the budgeted cost of $4,399,281.

- Profit From Construction: Negative $2,399,281 ($2,000,000 - $4,399,281)
- Return on Investment: Negative 55% (-$2,399,281 ÷ $4,399,281)
- Recapture of Investment: $0.45 on the dollar of capital investment was recovered ($2,000,000 ÷ $4,399,281)

Conclusion and Relevance: Despite the property's good location and enhanced post-renovation condition, this construction project was grossly infeasible. A large part of the reason for this is that, atypical of most high-budget renovation projects, even after renovation the property still suffered from significant functionality and design issues, as the manufacturer required improvements only to aesthetics and finishes. While the franchisee may have received discounts and incentives from the manufacturer to help recoup some of the construction costs, a landlord paying for such a renovation would not likely recoup this investment unless the costs were amortized through a lease (and that lease was honored).

SUMMARY OF CASE STUDIES

The case studies presented demonstrate that automobile dealership renovations can cost far more than they contribute to the value of the real estate. Therefore, a franchisee that owns the real estate from which it operates must be very careful to ensure that the factory's incentives are sufficient to offset its loss. However, when a dealership is leased, who pays for the renovation is a matter of negotiation. When the tenant has viable alternatives, such as building a new facility or relocating to an existing property in the same trade area, the landlord can be at a decided disadvantage in the negotiation. And, as explained below, while a tenant facing a renovation cost that rivals that of new construction has little to lose, a landlord has plenty to lose if its out-of-date dealership property is vacated.

WHAT TO DO IF THE TENANT LEAVES?

When a tenant vacates an auto dealership, whether or not it was related to capital improvements required by the factory, ramifications to the landlord can be far more serious than for landlords of conventional property types. There are a limited number of manufacturers, and as discussed earlier, each grants their dealers an exclusive territory; therefore, there is a finite number of auto dealerships that can operate in a given area. Markets with the greatest demand can be the worst place to lose a tenant because another manufacturer relationship simply might not be available.

As shown in the case studies, re-imaging can be costly, and rarely generates a positive return to the real estate. While all dealerships have some chance of being subjected to a manufacturer-required renovation, the risk associated with an application to establish a new franchise is enormous. If a landlord cannot come to terms with an auto dealership tenant about how to handle the cost of a factory-mandated re-imaging, it seems unlikely it can escape major construction by simply finding a different tenant, as any new tenant would also be an applicant for a new franchise. Dealerships that suffer from an outdated appearance or antiquated design eventually reach the end of their economic life, meaning that continuing this

use is no longer economically practical. While that day may come for all dealerships, it is often best to postpone it as long as possible. Given their singular use—to sell vehicles—and specific design requirements, automobile dealerships do not lend themselves well to conversion. Auto dealerships historically had been viewed as prime candidates for alternative uses because they generally have large sites with good commercial locations. However, the large supply of dealerships that became vacant in the years following the recession and financial crisis gave property owners and their advisers a first-hand lesson on how rare it is for a re-adaptive use to actually make financial sense for a failed dealership.

CONCLUSION

Landlords who own an automobile dealership property that has not been renovated or re-imaged within the past several years find themselves at significant risk. Making matters worse, since auto dealership operators require a manufacturer to grant them an exclusive territory, these tenants can be hard to replace. Many auto dealerships are owned by REITs or large private groups who generally understand these risks. However, there also are many dealerships owned by individuals and smaller groups. Further, sudden improvement in profitability is also drawing a significant number of investors who are new to this industry, and who may not understand its nuances. Issues specific to the automotive industry should be understood and analyzed by investors contemplating entering the market for these special-use properties, as well as by the counselors that advise them. ■

ENDNOTES

1. Charles E. Tholen, ASA, "Appraising Auto Dealership Facilities," Valuation 2000 Papers and Proceedings, p. 81.
2. Ibid., p. 86.
3. Charles E. Tholen, ASA, January 2014 email conversation.

Property 'Inspection' or Taking?

BY ANTHONY F. DELLAPELLE, ESQ., CRE

Editor's Note: *This new "Legal Update" section will feature summaries of recent judicial decisions, legislative and regulatory updates, or other legal news that concerns the real estate industry. Summaries can refer to published case law, news items, blogs and other reference materials. To provide a summary, email* REI@cre.org.

The California Supreme Court recently agreed to review an appellate court's decision that a condemning authority's "preliminary entry" constituted a taking under California's eminent domains. The appellate court ruling required the condemning authority—a water resource board—to pay just compensation to thousands of property owners in order to conduct invasive preliminary testing regarding the viability of a tunnel to transport fresh water from Northern California to the arid South. The case, entitled *Property Reserve, Inc. v. Department of Water Resources*, (Cal. App. JCCP No 4594, March 13, 2014), raises important constitutional property rights questions.

Pursuant to a statutory procedure, condemning authorities around the United States are routinely authorized to enter private properties to conduct pre-condemnation due diligence investigation. The entry can consist of visual inspections by real estate appraisers and surveyors, but may also in some states include more physically invasive testing. In the *Property Reserve* case, the government sought entry to conduct geologic studies such as borings and drillings which would leave cement "plugs" in bored holes up to depths of 200 feet. It also sought to conduct environmental studies by permitting personnel to enter the properties in question for weeks at a time over the course of a year.

A trial court granted the State preliminary entry for environmental testing on set terms, but denied preliminary entry for geological testing on the grounds that those activities would result in the permanent physical occupation of private property, (**i.e.**, a taking of private property which could only be accomplished by commencement of a condemnation action. The California Supreme Court has limited its review to determine if either the environmental testing or the geologic testing, or both, constitute a taking, for which just compensation is required, and also to determine whether California legislation provides a government agency with the right to use its eminent domain powers for this investigatory purpose.

As noted above, it is common for states to legislatively authorize government agencies with the power of eminent domain to "preliminarily enter" properties it may seek to condemn, in order to assist those agencies in determining

About the Author

Anthony F. DellaPelle, Esq., CRE, *is a shareholder in the law firm of McKirdy & Riskin, P.A. in Morristown, New Jersey. He is a certified civil trial attorney by the New Jersey Supreme Court and has represented property owners in eminent domain, redevelopment and real estate tax appeal matters for more than 25 years. DellaPelle also has experience in land use, zoning and planning matters. He has served as special counsel to municipal agencies and public utilities in condemnation cases, real estate tax appeals, and in planning and zoning matters. He has been appointed by the Superior Court of New Jersey as an expert in real estate valuation matters, and has published several articles and lectures regularly, both in New Jersey and nationally, on real estate valuation and property rights issues.*

DellaPelle is the sole New Jersey representative for Owners Counsel of America, a national association of leading eminent domain lawyers across the country. He is rated AV® Preeminent™ by the Martindale Hubbell Law Directory, *and has been recognized by his peers as a "New Jersey Super Lawyer" as published in the* New Jersey Monthly Magazine *since its inception in 2005, in which he was selected as one of New Jersey's Top 10 attorneys for 2012. Previously he was selected as one of New Jersey's Top 100 attorneys in 2009, 2010 and 2011. DellaPelle appears regularly on national television, where he provides commentary on eminent domain and property rights issues around the country. He served on Governor Chris Christie's transition team in 2009, and is the author of two blogs:* New Jersey Condemnation Law and New Jersey Property Tax Law.

DellaPelle received a bachelor of arts degree in economics and English from Franklin & Marshall College, and his juris doctor degree from the Seton Hall University School of Law. He is a member of the American Bar Association's Condemnation Committee and is chairman of the Morris County Bar Association's Condemnation Committee. DellaPelle currently serves as a commissioner of the New Jersey Public Broadcasting Authority, is an officer and Trustee of the Franklin & Marshall College Alumni Board of Directors, and is the vice president of the New Jersey Hall of Fame Foundation.

whether future projects are viable and to estimate property acquisition costs. For instance, the New Jersey statute which applies to preliminary entry allows a potential condemnor to "enter upon property to make photographs, studies, surveys, examinations, tests, soundings, borings, samplings or appraisals or to engage in similar activities reasonably related to acquisition…." *N.J.S.A.* 20:3-16. The agency in New Jersey must, however, restore the property to its original condition if eminent domain is not used to acquire the property within two years of entry; otherwise it is required to pay damages to the property owner.

To determine whether preliminary entry proceedings go too far, courts will often conduct a balancing test by considering: 1) the degree to which the invasions are intended; 2) the character of the invasions; 3) the amount of time the invasions will last; and 4) the economic impact of the invasion. That test was employed by the California court in the *Property Reserve* case, and led the appellate court to conclude that the factors weighed in favor of a "temporary taking" equivalent to a temporary easement.

In keeping with the criteria above, a New York appellate court followed suit in late July 2014, when it held that the pre-condemnation inspection rights did not give the condemning authority's representatives the right to enter and inspect the interior of a property, as that type of intrusion would violate the property owners' Fourth Amendment rights. *Jacobowitz v. Bd. of Assessors of Tp. of Cornwall*, 2014 NY Slip Op 05544 (N.Y. App. 2014).

Now that the California Supreme Court has agreed to hear this case, and New York has chimed in, property rights advocates and condemning authorities around the country will be watching. While the government is certain to argue that it needs to have this tool available to conduct due diligence, whether agencies will be permitted to do much more than look at a property is likely to be addressed in detail in *Property Reserve*, and could lead to reactive legislation and/or case decisions in other states in the future. ■

Federal Water Reform Act Spurs Development

BY CHARLES NOEL SCHILKE, JD, AM, CRE, FRICS

On June 10, President Obama signed the Water Resources Reform and Development Act (WRRDA) into law. The $12.3 billion WRRDA (U.S. Public Law 113-121) provides broad authorization for U.S. Army Corps of Engineers water infrastructure projects. The act makes funds available for a variety of water projects that facilitate real estate development and enable the water infrastructure of existing communities to function more efficiently.

WRRDA authorizes a Water Infrastructure Finance and Innovation Authority (WIFIA), which provides loans for water projects separate from the long-standing state revolving fund (SRF) program. WIFIA is modeled on the popular Transportation Infrastructure Finance and Innovation Authority.

WIFIA loans will enable municipalities to execute the "repair, rehabilitation, or replacement" of a community water system or treatment works, construct desalination infrastructure, and enhance the energy efficiency of a water system. WIFIA may also fund any project eligible for the SRF program. The program will reduce the

About the Author

Charles Noel Schilke, JD, AM, CRE, FRICS, *is director of the Edward St. John Real Estate Program and senior lecturer at Johns Hopkins Carey Business School in Washington, D.C. and Baltimore. At Hopkins, he teaches courses in Real Estate Development, Real Estate Transactional Law, Real Estate Environmental and Land Use Law, Business Law, Financial Institutions, Economics for Decision Making, The Firm and the Macroeconomy, and Financial Crisis and Contagion. Schilke has created commercial mortgage-backed securities (CMBS) on Wall Street, performed the real estate legal due diligence for the Exxon-Mobil merger, and financially restructured the real estate holdings of The American National Red Cross. He has developed major office buildings, large blood processing facilities, hotels, and mixed-use projects. He also frequently consults as an expert witness in real estate cases. Schilke earned a bachelor of arts degree from the University of Chicago, a master of arts degree from Harvard University, and a juris doctor degree from Cornell Law School. He is currently completing his doctoral degree at Harvard University, where he is writing a detailed financial analysis of the development of CMBS as his dissertation.*

so that communities may repair and expand water systems at lower cost to water users and taxpayers than would otherwise have been possible.

WIFIA provides that the Corps and the Environmental Protection Agency (EPA) may each lend $175 million in low-interest loans over five years for water and wastewater projects expected to cost at least $20 million. If fully funded, after selecting borrowers through a competitive process, the Corps and the EPA together could leverage this to offer $3.5 billion worth of loans over a five-year period.

However, Congress provided that WIFIA must deny funding if a state plans to lend an equal or greater amount of SRF funds to a given project in a single year. Congress further mandated that 15 percent of each year's WIFIA appropriation be reserved for lending to small community water system projects.

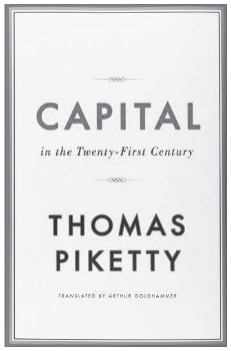
Congress also limited WIFIA funding to 49 percent of project costs, and prohibited additional tax-exempt financing, such as general obligation and revenue bonds, for the residual project costs. This prohibition effectively prevents communities from combining WIFIA funds with tax-exempt debt to pay 100 percent of project, reducing the impact of WIFIA in facilitating infrastructure development and repair.

Still, WRRDA and WIFIA constitute the first true appropriations bill for Corps water infrastructure since 2007, and should significantly alleviate the dearth of funding in this area for many communities. ■

Capital in the 21st Century

by Thomas Piketty (© 2014, Harvard University Press, 696 pages)

REVIEWED BY MAHLON APGAR IV, CRE, FRICS



By the time readers have read this, *Capital in the 21st Century* will have become its publisher's most popular title ever. Author Thomas Piketty already has emerged from relative obscurity in the French Academy to become an international celebrity, and his main theme, "income inequality," is at the heart of the current political discourse in America and Europe.

Capital is heavy reading. With 577 pages of prose and 685 endnotes, readers must be seriously interested in the topic to even begin. It is, however, clearly and, at times, gracefully written, generally free of jargon, carefully targeted in its graphics, and mercifully modest in its math requirements. Though Piketty is an economist, not a historian, he has produced an economic history that may redefine him as well as economics itself. He deftly weaves social narratives and literary references into the text, enlivening the "dismal science" and increasing its accessibility for policymakers (and their commercial real estate advisors!). Analysts will appreciate his data-driven methodology and fact-based conclusions—even if they disagree with him.

Piketty's argument has clear implications for real estate professionals. He postulates that income inequality in contemporary market capitalism is structural and inevitable. His analysis shows that returns on financial capital and real property consistently exceed the returns on human capital, or productivity, by wide margins. This divergence leads to increasing concentrations of wealth, with concomitant political power that further insulates the wealthy. Capital markets, he observes, have no "self-correcting mechanism" to dilute wealth among those who can afford to save and invest; indeed, they are embedded with massive incentives that deepen the disparity.

About the Reviewer

Mahlon 'Sandy' Apgar IV, CRE, FRICS, *advises senior executives and boards of companies and governments on real estate strategy, development and operations. In consulting, public service, teaching and research, he positions real estate and infrastructure as strategic assets, combining public policy with innovative business practices and analytics.*

Apgar began his real estate career with the visionary developer, James W. Rouse. As a former partner of McKinsey & Company and the Boston Consulting Group, and founder of Apgar & Company, he has advised more than 150 corporate and government clients on over 500 projects in 13 countries.

President Clinton appointed Apgar as Assistant Secretary of the Army for Installations and Environment, with responsibility for the Army's global infrastructure and real estate portfolio. Apgar also led the design and launch of the award-winning Residential Communities Initiative.

Apgar has authored or co-authored more than 100 articles and cases, including a real estate set in the Harvard Business Review. His articles in Real Estate Issues received the Ballard Award, and he received the James Felt Award for Creative Counseling. His report on "Placemaking: Innovations in New Communities" will soon be e-published by the Royal Institution of Chartered Surveyors (RICS) and the Urban Land Institute (ULI). Apgar received a U.S. patent for a corporate portfolio evaluation system, known as the "Apgar Real Estate Score." He has taught at Harvard, Oxford, Princeton and Yale.

Apgar is vice chair of ULI's Public Development and Infrastructure Council and a ULI Foundation Governor. He was elected an "Eminent Fellow" of the Royal Institution of Chartered Surveyors. He holds a bachelor's degree in sociology from Dartmouth College and a master's degree in business administration from the Harvard Business School.

He further opines that the scale and growth of wealth in recent years is largely invisible to most people—and their leaders—until "Occupy Wall Street"-type events create periodic, though temporary, media storms. Yet, the public's fascination with celebrity billionaires and their baubles—including $50 million New York penthouses—obscures the reality that American capitalism's main

promise—"work hard, and you'll succeed"—has become virtually unattainable for many people.

Piketty is distinctive, if not unique, in highlighting real estate's role as a pillar of economic systems throughout history. He distinguishes land values from building values, while acknowledging the challenge of dissecting them, cites the inexorable shift in domestic holdings from land in agrarian economies to housing in urban economies, and prescribes the tradeoff between equity returns and leveraged returns that macroeconomists often miss. Readers may be surprised by the remarkable constancy of real estate returns from Antiquity through the Middle Ages and the Industrial Revolution to the present. They also may be intrigued by his "mystery of land values" and comparisons of returns from real estate and financial assets.

Despite more than 60 references to property and real estate, and his otherwise robust presentation, Piketty skims over two central issues facing our industry and profession. First, he does not deconstruct real estate's risk factors and assign premiums to each—assessments that often drive investors' decisions. He simply may have lacked the data, or he possibly may not fully appreciate the profound importance of real estate-specific risks. Second, he does not differentiate between value-based and fee-based returns. Thus, he fails to acknowledge the reality that most 21st century real estate business models are built on service and management fees, comparable to professional firms and certain production businesses, and are fueled by institutional and public capital; while their predecessors were founded on highly leveraged returns from property appreciation, with little personal equity at risk and only marginal fees from ancillary services. These failings do not undermine Piketty's conclusions, but they would be welcome clarifications if he ever writes a sequel.

Piketty's most controversial solution to the widening income gap is a global wealth tax, which even he admits is politically impractical, however morally justified and fiscally feasible. In this world of ever-increasing globalization, however, with 'big data' analytics and universal telecommunications diminishing the importance of geographic borders and organizational hierarchies, the simplicity of a single one to two percent flat tax eventually may override the wrangling over complicated country-by-country solutions. As readers reflect on the historic roots of Piketty's analysis, they may consider that taxation and national accounting systems developed during the French Revolution revealed theretofore obscure values of aristocrats' assets. Similarly today, governments are keenly interested in unveiling cross-border holdings of major corporations and the "one-percenters."

Piketty has illuminated the central issue in democratic capitalism: while enabling individuals to amass wealth, it has not produced a political calculus that directly benefits everyone without impeding entrepreneurial spirit, technological innovation and management prowess. Regrettably, he does not address the recent emergence of for-profit social benefit corporations, such as Patagonia and Warby Parker. These novel structures challenge the Friedman ideology that profit is the only social responsibility of business, which has dominated business management for the past 40 years. The benefit corporations appeal especially to Millennials who want to affiliate with socially responsible companies, and are proving—as have some visionary real estate developers—that private profit and public purpose are not only compatible but also synergistic. If further leveraged by wise government policies, benefit corporations could transform the behavior of 21st century capitalists, an outcome that one presumes Piketty would endorse.

The author's work accentuates the role and responsibility of real estate professionals to sharpen clients' thinking by dissecting the complex problems they face; sizing, sequencing and prioritizing analyses that improve their decision-making; isolating data and analytics that otherwise distract and may even obfuscate their decisions; and assessing societal as well as economic impacts in every project they undertake. As thought-leaders, real estate professionals often must be their clients' intellectual guides, whether or not they are so instructed. In another life, Piketty could have been a superb counselor of real estate.

Capital seems destined to become a classic with the standing of Smith's *Wealth of Nations* and Keynes' *General Theory*. The reasons have as much to do with its timing as its content. Whatever readers may think of its merits or shortcomings, they must in the end agree that Piketty and his tome are having outsized influence on policy and practice that few others can claim. Now, that's impact! ■

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