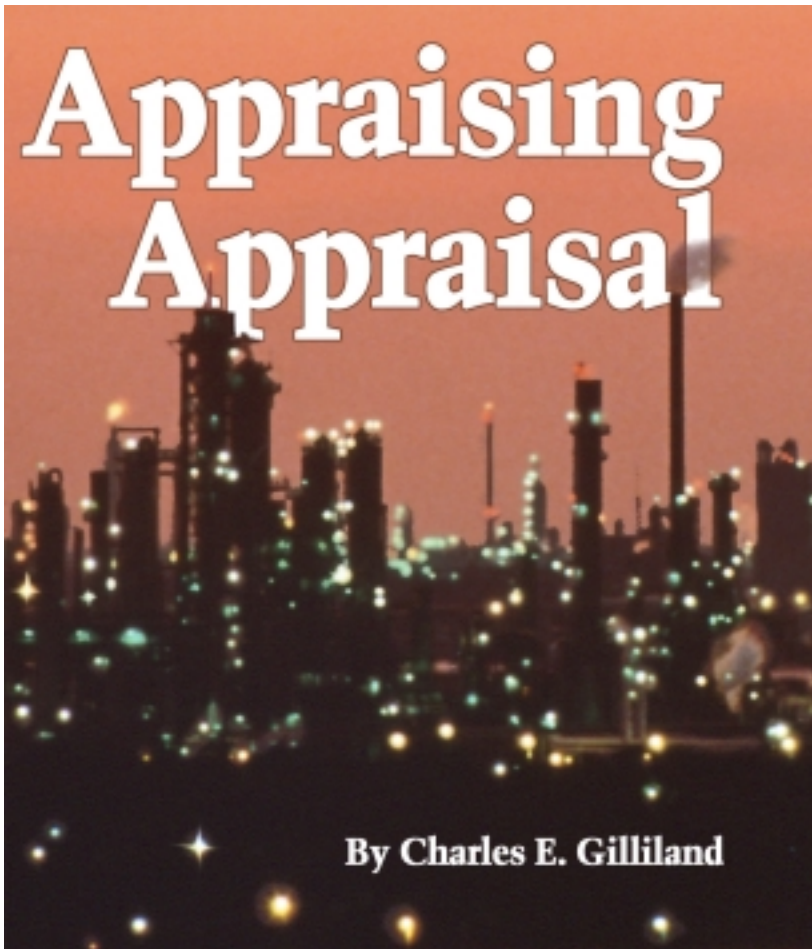


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after the contamination is cleaned up. Jackson examined 122 industrial property sales to determine whether there was a stigma-related price effect on remediated sites. The sample included 13 formerly contaminated sites.

Employing statistical models to analyze the sales, Jackson did not find a statistically significant stigma associated with the cleaned-up sites. Study results suggest that property values of uncontaminated sites and previously contaminated sites that have been cleaned up are no different.

### **The Effects of Wetlands and Other Factors on Real Estate Prices**

*Dr. John E. Reynolds, University of Florida, and Alex Regalado, Office of Program Policy Analysis & Government Accountability*

The researchers studied 212 rural land sales in southwest Florida to identify how the presence of wetlands affected property prices. Swamps, marshes, bogs, fens and prairies composed more than 99 percent of the wetlands in the study, which also examined river and lake wetlands systems. On the positive side, wetlands provide breeding areas for wildlife. Agricultural operators, however, view wetlands as useless areas adversely affecting their income potential from the land.

Using a statistical model, the researchers determined that the presence of wetlands has a negative impact on value. A 10 percent increase in wetlands reduces land prices by 0.2 percent. For example, a property made up of 50 percent wetland would sell for 1 percent less than a similar tract without any wetland. The study suggests that the presumably positive social attributes of wetlands do not result in higher market prices.

### **Land Values at the Rural-Urban Fringe: A Spatial Econometric Analysis**

*Drs. Lonnie R. Vandever, Stephen A. Henning, Huizhen Niu and Gary A. Kennedy, Louisiana Tech University*

The researchers examined 500 sales, using geographic information systems (GIS) technology to evaluate rural land values in urban fringe areas in southwestern and southeastern Louisiana. Results showed rural land prices in southeastern Louisiana depend on size of the tract, estimated value of buildings, time of sale, location in New Orleans Metropolitan Statistical Area (MSA), distance to the nearest city, location on a paved road and whether the land was purchased for commercial or recreational use.

Properties located in the four parishes surrounding New Orleans sold for 61 percent more per acre than comparable

**T**he Valuation 2000 Conference brought the three major national appraisal organizations together in an educational forum for the first time. The American Society of Appraisers, American Society of Farm Managers and Rural Appraisers and Appraisal Institute cooperated in organizing the event, which attracted more than 1,400 participants. The conference included presentations and published proceedings addressing appraisal industry topics. Highlights of papers on real estate appraisal topics are described here.

One heavily attended session at the conference presented a panel discussion of the continuing controversy regarding public interest value (PIV). Proponents continue to view PIV as a progressive step forward in appraisal practice. Opponents view PIV as a dangerous manipulation of the market value concept and a threat to the fiscal discipline built into government real estate acquisitions. To learn more about the PIV controversy, download Real Estate Center publication No. 1189: "In Defense of Market Value" at <http://recenter.tamu.edu/pubs/catappr.html>.

Published papers from the Valuation 2000 Conference can be obtained by calling 847-303-5122 and requesting stock number #0675M, *Valuation 2000 Papers & Proceedings*.

### **The Effects of Previous Environmental Contamination on Industrial Real Estate Prices**

*Thomas O. Jackson, MAI, CRE, Entrix, Inc.*

Appraisers have suggested that the decline in the value of industrial properties with environmental contamination abates

properties outside that MSA. Each additional acre in size reduced sale price by 2.4 percent per acre. Each additional ten miles from the city reduced sale price by an average of 1.5 percent per acre.

Land purchased for commercial use fetched 44 percent more per acre than sales for agricultural use. However, purchase for recreational use generally resulted in a 21 percent reduction in price per acre. Sites on paved roads produced premiums of 20 percent per acre.

Rural land prices in southwestern Louisiana were a function of size of tract, estimated value of buildings, time of sale, location in Lafayette MSA, distance to the nearest city or town, whether the land was purchased for commercial use, amount of government program base acres and soil type.

Prices for commercial land were 94 percent higher than prices for agricultural land. Each 10 percent increase in the amount of Southern Mississippi Valley silty upland soil increased per-acre price by 4.7 percent. Each 100 percent increase in the amount of government program base acres added 0.1 percent to the per-acre price.

Properties located in the Lafayette MSA sold for 16 percent more per acre than comparable properties outside that MSA. Each additional ten acres in size reduced per-acre sale prices by 1.8 percent. Each 10 percent increase in distance from Lafayette reduced sale prices by an average of 0.3 percent, while a 10 percent increase in distance from the nearest town further reduced per acre prices by 0.2 percent.

### Verifying Damaged Property Transactions

Barry J. Alperin, MAI, ASA

A thorough and defensible verification is critical in valuing damaged real estate. The author argues that, despite virtually universal insistence that sales be confirmed and verified, no standard of verification exists in appraisal theory or legal precedent. Alperin suggests the following definition of verification:

*A personal investigatory process with 14 steps involving confirmation, validation, authentication, and/or learning of information necessary to all steps in the appraisal process and leading to accurate, reliable and factual information and/or supportable opinions.*

The investigatory process consists of the following steps:

1. Identify categories of needed information.
2. Identify the people to be interviewed.
3. Prepare a list of questions for each information category.
4. Prioritize the need for information.
5. Prepare alternative question formats.
6. Review the question format.
7. Prepare introductory and closing statements.
8. Prepare to deal with objections.
9. Make an appointment for the verification interview.
10. Commence the interview.
11. Ask follow-up questions and reconfirm essential points.
12. Close the interview.
13. Review recorded answers.
14. Review the interview procedure.

Alperin sees this checklist as a process akin to the appraisal process that blends art and science through effective communication to produce a supportable estimate of market value.



**RESEARCHERS FOUND** that the presence of wetlands had a negative effect on property prices. Prices for previously contaminated property that had been cleaned up were no different than those of uncontaminated sites.



### Appraising Large-Scale, Technically Unique Industrial Facilities: An Application of Monte Carlo Techniques

Steve Dean, P.E., ASA, DAI Management Consultants and Dr. Paul Fishbeck, Carnegie Mellon University

Complex properties designed for highly sophisticated technical processes, such as refineries, power plants or manufacturing plants, present appraisers with difficulties. How can an estimate of market value account for and weigh the various sources of risk inherent in the current and future operations of such facilities?

The researchers tackle the problem by identifying sources of risk, modeling the income streams achieved under various combinations of risk and applying a Monte Carlo simulation to arrive at a value estimate. They submit a nuclear power plant with potentially crippling maintenance requirements to this analysis. For comparison purposes, they also derive a value estimate for the plant using the less sophisticated, standard discounted cash-flow model.

The results demonstrate that systematically including risk in the Monte Carlo framework can substantially alter estimates of value, in this case reducing the value from \$240.8 million to \$205.8 million. The authors conclude that failing to account for areas of uncertainty in an appraisal of complex properties may result in grossly overestimated values. ♣

Dr. Gilliland is a research economist with the Real Estate Center at Texas A&M University. His e-mail address is c-gilliland@tamu.edu.



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