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## **MORAL HAZARD IN THE OIL PATCH: THE EFFECT OF THE BANKING CRISIS ON RTC HOTEL APPRAISALS IN THE AMERICAN SOUTHWEST**

**Michael C. Dalbor**

### **ABSTRACT**

This paper compares appraised hotel values of Resolution Trust Corporation (RTC) properties in the American Southwest ("Oil Patch" states) with their respective market values. The RTC was given the task of having hotel properties appraised and subsequently auctioned for sale. However, RTC officials were aware they had limited time and funding for their operations. Consequently, RTC officials faced a significant amount of political pressure to sell non-performing assets quickly, particularly in the Oil Patch where banking problems were especially severe. Given these circumstances, the RTC may have been motivated to influence appraised hotel values downward to sell more assets faster. The results of this paper indicate appraised hotel values to be lower than their market values in the region. Moreover, the differences between appraised values and market values were significantly more negative in the Oil Patch than in other regions.

### **Introduction**

The purpose of this paper is to compare appraised hotel values completed for the Resolution Trust Corporation (RTC) with hotel market values in the American Southwest during the period of RTC operations (1989–1995). Given the overwhelming task for the RTC of resolving the nation's savings and loan crisis and the limited amount of funding given for this task, the RTC needed to sell assets rapidly. This may have led the RTC to encourage appraisers to push hotel values downward in an effort to accept lower bids and remove non-performing assets from the books. This paper provides evidence that appraised hotel values were significantly lower than market values in the southwestern states, and that these differences were significantly greater than those in other regions of the United States. The results support the notion that relationships in the process and the motivations of the parties affect appraised values.

### **Background**

The banking crisis of the 1980s was particularly severe in the southwestern United States. More than half of the Federal Deposit Insurance Corporation's resolution costs from 1986 to 1994 were generated by bank failures in the "Oil Patch" states of Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. Furthermore, over 70 percent of United States bank failures between 1987 and 1989 occurred in the Southwest. The state with the most problems was Texas, which accounted for nearly 30 percent of RTC resolution costs (FDIC, 1997).

A major contributing factor to the banking crisis in the region was the steep decline in oil prices that began in 1981 and bottomed out in early 1986. As the oil industry declined, lenders began to look for other investments, primarily commercial real estate. However, many lenders ignored the links between the energy markets and commercial real estate markets, including hotels. Despite indications of overbuilt real estate markets, bank funding of projects continued to increase in the 1980s. This in turn led to the banking crisis of the late 1980s and the formation of the RTC in 1989.

The RTC was intended to be a temporary agency charged with the task of selling non-performing assets and non-performing loans. The motivations for establishing the RTC were to generate cash flow to help recover some costs of the cleanup and to get assets "off the books" so the federal government would not have to manage them. Because of the magnitude of the problem and the overall uncertainty regarding this new government function, government auditors monitored RTC sales practices carefully.

The General Accounting Office (GAO) conducted annual audits of RTC operations and tracked various statistics for the U.S. Congress. While the auditors measured the ratio of sales price to book value of assets (i.e., a "recovery rate"), they also measured the cumulative number of assets sold by the RTC and the ratio of sales price to appraised value. For example, between August 1989 and October 1991 the cumulative assets sold totaled 16,597. However, this number had increased to 37,169 by September 1992 and to 52,863 by September 1993.<sup>1</sup> These reports clearly indicate that the number and speed of asset sales were important statistics presented to the U.S. Congress for evaluation. These statistics were used to assess the effectiveness of the RTC and influenced the availability of funding for the RTC operations from year to year.

The formation of the RTC was only part of the Federal Institutions Reform Recovery and Enforcement Act (FIRREA) legislative package. Other parts of the package addressed issues related to the lending practices. The factors that contributed to this problem and the lack of prompt attention thereto have been examined extensively in the literature regarding the moral hazard problem.

## Literature Review

Moral hazard, in the context of the banking crisis, was a problem that involved loan officers and other lending institution officers taking actions to improve their financial position at the expense of others (primarily depositors). These actions were encouraged by a combination of favorable federal regulation and lenience by overseers, the availability of deposit insurance, and the lack of sufficient equity capital at many financial institutions.

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<sup>1</sup> United States General Accounting Office, *Resolution Trust Corporation: Real Estate Recoveries, 1993: Fact Sheet for the Chairman, Subcommittee on General Oversight, Investigations and the Resolution of Failed Financial Institutions*, House of Representatives, March 1994, pp. 4, 22.

The initial problem of the 1980s for savings and loan institutions became the steep increase in interest rates in 1980 and 1981. Rates on deposits subsequently began to exceed the rates on existing home mortgage loans held by these institutions. In an attempt to help the thrift industry, the Depository Institutions Deregulation and Monetary Control Act of 1980 phased out interest rate controls and allowed thrifts to earn higher returns by lending for commercial real estate projects.

However, this action was taken too late to effectively help the thrifts. In response, the Garn-St. Germain Act was passed in 1982 to help the industry become solvent. As discussed by Dotsey and Kuprianov (1990), the major feature of the act was to forestall government intervention via institution closure, which led to further accumulated losses for deposit insurance funds.

A policy of non-government intervention, called regulatory forbearance, was strictly adhered to in the American Southwest. Research by Cole (1993) found that thrift institutions in that region were significantly more likely to be insolvent, but had a much lower probability of closure than did thrifts in other regions. Cole attributes this fact to political pressure to keep thrifts open in the Southwest and to the insufficient regulatory staff in the region that was overwhelmed by the magnitude of the problem.

The lack of non-risk-based deposit insurance before 1992 also provided an incentive for moral hazard by bank officers. As shown by Gilbert (1990), deposit insurance created an investment atmosphere that allowed banks to assume greater risks than they normally would have without the insurance. Thus, bankers had the incentive to "grow out of their problems" by engaging in risky lending activities such as increased commercial real estate lending.

Additionally, thrift officials took excessive risks because of the lack of equity capital. As shown by Jensen and Meckling (1976), the less management equity in the firm, the greater the incentive for managers to consume perquisites. Banks have historically maintained some of the lowest amounts of equity capitalization. Furthermore, Park (1994) shows that the lack of equity capital encouraged banks to engage in risky behavior because owners can reap any positive benefits while losses will be borne primarily by debt holders.

The moral hazard problems at lending institutions spilled over into the appraisal industry. As problems in the banking industry began to increase, the appraisal process and the industry itself fell under increased scrutiny. The U.S. House Committee on Government Operations (1986) held hearings in 1985 on appraisal practices and concluded that the lack of appraiser certification and the practice of "client advocacy appraising" contributed to the savings and loan crisis. Moreover, according to federal regulators in the southwestern U.S., "many appraisals were apparently out of touch with reality and ... inflated appraisals were easy to obtain."<sup>2</sup> Thus, for perhaps the first time, relationships in the appraisal process were considered to have a significant impact on appraisal results.

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<sup>2</sup> Federal Deposit Insurance Corporation, *History of the Eighties: Lessons for the Future*, 1997, p. 304.

Vandell (1988) was one of the first in the real estate profession to suggest that appraisal problems were not due to the lack of regulation. He suggests that agency relationships in the process and individual motivations may have affected appraised values. Moreover, according to Duvoisin (1988), "the real estate appraiser is caught up in a process which often controls him, rather than vice versa." Problems in the appraisal process led to the passage of FIRREA of 1989. Some of the major changes included certification of appraisers and the prohibition of buyers or developers commissioning appraisals in hopes of increasing appraisal accuracy.

However, only a modest amount of research has been conducted on appraisal accuracy. Studies by Cole, Guilkey, and Miles (1986, 1987) examine appraisal accuracy and show mixed results. Furthermore, their samples contained few hotels and they did not examine the relationships in the appraisal process that may have caused discrepancies.

In a previous paper, I examined the relationships and motivations of the parties in the appraisal process for the Resolution Trust Corporation and private lenders (Dalbor, 2000). I examined the differences between appraised values and adjusted sales prices of hotels. I hypothesized that differences for institutional lender appraisals would be significantly greater than zero. My research shows that for institutional lenders in the 1988–1989 and 1993–1997 periods, the mean difference was 6.71 percent and significant. On the other hand, hotel appraisals for the Resolution Trust Corporation between 1989 and 1997 had a mean difference of only 1.08 percent, which was not significant. However, this research does not focus on the motivations of the RTC or any problems in any particular region.

Accordingly, the motivation for a rapid clean-up of savings and loan assets in the American Southwest may have led RTC officials to influence appraised hotel values downward. This would have favorably affected two key statistics tracked by federal officials: the number of cumulative assets sold (the more, the better) and the ratio of sales price to appraised value (the higher, the better).

## **Methodology and Findings**

The research question of this study is whether differences between appraised hotel values and market values of RTC properties were greater in the Oil Patch region of the United States than elsewhere. A database from the Federal Deposit Insurance Corporation supplied the data used to address this question. Hotel property sales between the years 1989 and 1995 were used. Condominium, timeshare, and properties with sales prices below \$1,000,000 were excluded. Sales prices and appraised values were examined, with the percentage difference represented by the appraised value minus sales price, divided by the sales price. Additionally, sales prices were indexed to the date of the appraisal as described by Corgel and DeRoos (1992). The index makes use of a Fisher Ideal Price Index and a Hedonic Price Index. Key hotel characteristics such as average room rate, property age, franchise affiliation and others are drawn from a large database of hotel transactions. A time series regression model is used to estimate the parameters associated with each characteristic. The index measures the changes in the

product of the median value of each characteristic and its associated parameter. The index is known as the *Lodging Property Index* and has been published on a quarterly basis since 1996. This index can then be used to help determine what the sales price should have been on the date of appraisal.

The data for the study was divided into two samples: RTC hotel appraisals for properties in the Oil Patch states—Arkansas, Louisiana, New Mexico, Oklahoma and Texas—and RTC hotel appraisals for the other states. Table 1 provides descriptive statistics of the observations. Panel A describes the entire sample by year; Panel B examines the Oil Patch region by year; and Panel C examines the Oil Patch region by state. Most of the hotel sales occurred in 1991 and 1992 and most of the hotel sales in the Oil Patch region were in Texas. There were no sales after 1993 and none in the state of New Mexico.

Table 1  
Descriptive statistics

Panel A – Descriptive statistics for entire sample by year			
Year	Number	Mean Appraised Value	Mean Sales Price
1989	4	\$8,637,500	\$8,900,838
1990	16	\$6,111,688	\$6,620,123
1991	38	\$2,774,579	\$2,866,383
1992	40	\$4,105,250	\$4,543,455
1993	23	\$3,718,652	\$3,339,543
Panel B – Descriptive statistics for Oil Patch states by year			
Year	Number	Mean Appraised Value	Mean Sales Price
1989	0	—	—
1990	7	\$1,823,571	\$1,685,017
1991	14	\$2,580,357	\$2,882,724
1992	13	\$5,552,462	\$6,704,112
1993	4	\$2,116,000	\$2,183,596
Panel C – Descriptive statistics for Oil Patch states by state			
State	Number	Mean Appraised Value	Mean Sales Price
Arkansas	1	\$2,300,000	\$1,651,575
Louisiana	5	\$8,792,400	\$10,452,950
Oklahoma	4	\$1,662,500	\$1,779,187
Texas	28	\$2,736,571	\$3,107,429

\*There were no observations from New Mexico.

For every year except 1990, the RTC appraisals of hotels in the Oil Patch region were lower on average than their sales prices. Furthermore, the negative differences for the Oil

Patch hotels were greater than in other states from 1991 through 1993. The mean for Oil Patch hotels for all states in all years was negative 4.6 percent. On the other hand, the mean difference for non-Oil Patch hotels in all years was positive 4.1 percent. The test of these differences is discussed later in this paper.

A Ryan-Joiner test was conducted on the samples to assess the normality of the distributions. There are a few extreme outliers in each sample that affect the distribution. The Ryan-Joiner test produced p values lower than .05, rejecting the null hypothesis of normality. Consequently, non-parametric methods were used in conjunction with standard t tests to see if these outliers affected the results in a material fashion.

Two sets of t tests were conducted (1) to see if each sample's mean difference was significantly different from 0, and (2) to see if the mean differences of the two samples were significantly different from each other. Additionally, an analysis of variance (ANOVA) was conducted to see if appraisals in the Oil Patch produce significantly different results from appraisals in other regions. The t tests are shown in Table 2.

Table 2  
T tests for mean differences

Sample / alternative hypothesis	T Statistic	P Value
Oil Patch / mean difference less than 0	-1.42	.08
Non-Oil Patch / mean difference equal to 0	1.61	.11
Oil Patch / non-Oil Patch mean differences equal	2.11	.04

The mean difference is calculated as the appraised value minus the sales price, divided by the sales price. For hotel appraisals in the Oil Patch, the expectation is for the mean difference to be less than zero. Furthermore, hotel appraisals in the Oil Patch are expected to have greater negative differences than appraisals in other regions.

As can be seen, the mean difference for the Oil Patch appraisals is less than 0 as expected, but at only a 10 percent level of significance. On the other hand, appraised values in the non-Oil Patch regions are not significantly different from market values. Finally, and most importantly, the mean difference for RTC hotels in the Oil Patch is significantly less than that in other regions. This lends support to the notion of RTC officials influencing appraised hotel values downward in hopes of selling assets quickly and improving sales price/appraised value ratios.

As previously mentioned, the distribution of the samples could bias any t test results. Accordingly, a variety of non-parametric tests were used to examine significant differences using median values. The results of these tests are shown in Table 3.

Table 3  
Non-parametric test results

Panel A – Wilcoxon test of medians		
Sample/ alternative hypothesis	W Statistic	P Value
Oil Patch / median difference less than 0	260.5	.05
Non-Oil Patch / median difference equal to 0	1951.0	.35
Oil Patch / non-Oil Patch median differences unequal	5456.0	.03
Panel B – Kruskal-Wallis test of medians		
Sample/ alternative hypothesis	H Statistic	P Value
Oil Patch / non-Oil Patch median differences equal	5.82	.02
Panel C– Mood's median test		
Sample/ alternative hypothesis	Chi-Square Statistic	P Value
Oil Patch / non-Oil Patch median differences equal	5.24	.02

The median difference is calculated as the appraised value minus the sales price, divided by the sales price. For hotel appraisals in the Oil Patch, the expectation is for the median difference to be less than zero. Furthermore, hotel appraisals in the Oil Patch are expected to have greater negative differences than appraisals in other regions.

Panel A of Table 3 repeats the three tests used in Table 2 by using the Wilcoxon Signed-Rank Sum test. The results of this test largely confirm those found using the *t* distribution. The most important test is to examine the differences between the two subsamples. Accordingly, the Kruskal-Wallis method and Mood's Median Test were also used to further assess the reliability of the Wilcoxon results. Both tests support the results previously obtained. Furthermore, the Mood's Median Test is highly robust against outliers and both Kruskal-Wallis and Mood's Median tests are considered non-parametric alternatives to an ANOVA model.

Nevertheless, the ANOVA model for this analysis is  $\%DIFF = \mu.. + \alpha_1 OILPATCH + \epsilon_i$ . The single explanatory variable used is OILPATCH, an indicator variable for those appraisals completed for hotels located in Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. ERROR is the error term in the model. The results of the analysis are shown in Table 4.



Table 4  
One-way analysis of variance results

Source of variation	Adjusted Mean Square	F
OILPATCH	2,245	4.52*
ERROR	497	

Table 4 shows the results of the general linear model where  $\%DIFF = \mu.. + \alpha_1 OILPATCH + \epsilon_j$ . OILPATCH is an indicator variable for those hotels located in the Oil Patch states.

\* Indicates significance at alpha = 0.05

As shown in Table 4, the Oil Patch location produces significant effects in the ANOVA model. This also follows the conclusions reached by Cole (1993), who shows that regulatory forbearance led to a large number of non-performing assets in the Oil Patch. Consequently, there were more troubled assets in this region that had to be sold. This, in turn, influenced appraised values downward to help clean up the problem in a timely manner and increase the sales price/appraised value ratio.

### Conclusions and Implications for Further Research

Overall, this research builds on previous work that examines agency relationships and motivations in the appraisal process. The results indicate that hotel appraised value/market value differences were greater in the Oil Patch region of the United States. Furthermore, the Oil Patch location was a significant factor in explaining the differences. This lends support to the notion of motivations in the appraisal process affecting appraised value outcomes.

FIRREA legislation was enacted to help address some of the agency problems in the process. However, there may still be agency problems even when appraisals are completed for government officials. Accordingly, appraisal accuracy research need not focus only on methodological issues but should also include economic circumstances and motivations of parties who have a vested interest in appraised values. More research is needed to uncover other specific motivations for parties in the appraisal process and for other types of commercial real estate.

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