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Recoveries on Distressed Real Estate and The Relative Efficiency of Public versus Private Management

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This study examines average recoveries from distressed commercial real estate assets held by FSLIC receiverships, and explores differences in the relative efficiency of public versus quasi-private and private entities in the management of these assets. It finds that properties located in markets with rising per capita income and properties that were judged to be less difficult to manage and sell provided higher recoveries, while properties with smaller writedowns prior to government takeover provided lower recoveries. The analysis also provides evidence that quasi-private management by the Federal Asset Disposition Agency provided higher mean recoveries, while private management by contractors provided lower mean recoveries than did public management by FSLIC receivership staff.

The increasing role of U.S. government agencies in the ownership and management of distressed real estate assets has generated substantial debate about asset management and disposition policies of these agencies.[1] One set of concerns relates to the recovery rates that the agencies should expect from the

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[1]See the Committee reports on the background of The Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) for discussion of the real estate-related issues as part of the legislation.

various types of distressed real estate assets in their portfolios.[2] A related issue is the strategies by which these assets should be managed and sold. Private workout specialists have argued that the most efficient policy for the government to follow is to arrange asset management and disposition contracts with the private sector. Some individuals fear, however, that such a policy may unduly enrich private contractors at the expense of the deposit insurance funds and, ultimately, the taxpayer.

This study examines these issues by providing empirical evidence on the historical recovery rates from the sale of distressed assets. These rates of recovery are then used to assess whether it is more cost-effective for a government agency to manage distressed assets in-house or through contractual arrangements with private sector workout specialists. Specifically, the study examines the historical cash flows of large and diverse samples of Federal Savings and Loan Insurance Corporation (FSLIC) receivership assets that were managed and sold by: FSLIC receivership staff (public sector), the Federal Asset Disposition Association (FADA, quasi-private sector), or private contractors (private sector) during the late 1980s.

The existing literature on recovery rates and the management and sale of distressed real estate is limited. Crockett [5] posits a conceptual framework for the development of market incentives compatible with the efficient management and disposition of distressed real estate. "Deep pockets," or the capacity to absorb negative cash flows, plays a key role in determining the efficient holder of distressed assets, while informational asymmetries between holders and potential buyers are the dominant consideration in ultimately disposing of distressed assets.

In a related article, Kane [7] discusses the issues surrounding the Resolution Trust Corporation's (RTC) management of distressed real estate by drawing reference to insurance salvage operations. Kane argues that RTC procedures favoring the disposition of failed thrift assets on an institution-by-institution basis lead to additional losses to the taxpayer. Consequently, Kane argues that the RTC should adopt policies that make distressed assets controlled by the RTC accessible to private

[2]Distressed assets are defined as all assets in the portfolios of depository institutions taken over by government regulators. There was congressional concern that regulators might dispose of distressed assets in depressed markets at "fire-sale" prices, further exacerbating the economic conditions in these markets. In response to these concerns, FIRREA includes provisions mandating specific minimum rates of recovery that regulators are to achieve upon the sale of distressed assets.

salvors on an asset-by-asset basis in order to mitigate the losses to taxpayers.

While these types of papers explore theoretical issues associated with the management and disposition of distressed assets, they provide little or no evidence about the returns generated by sales of distressed real estate. This study presents such evidence, which may have implications for Federal Deposit Insurance Corporation (FDIC) and RTC policy choices regarding the management and sale of failed-bank and failed-thrift real estate assets.[3]

The next section provides institutional background information on how the FSLIC dealt with distressed assets. It is followed by presentation of an empirical model of asset management efficiency and by a discussion of the sample and data. The empirical results and conclusions make up the final sections of the paper.

THE FSLIC RECEIVERSHIP EXPERIENCE

During the 1980s, the FSLIC resolved nearly 600 troubled thrift institutions. More than 300 additional thrifts were resolved through supervisory mergers overseen by the twelve District Federal Home Loan Banks. Of these more than 900 resolutions, 92 involved the placement of troubled thrifts into liquidating receiverships.

The use of liquidating receiverships as a method of case resolution increased significantly during the 1980s. While only two institutions were resolved by this method during 1980–1982, twenty-five were placed into receivership during 1983–1985, and sixty-five were resolved by receivership during 1986–1988. From 1984 to 1989, the net book value of the FSLIC's receivership asset portfolio increased from approximately $1.5 billion to more than $13 billion.[4]

The FSLIC responded to this rapid growth in receivership assets both by hiring additional real estate specialists and by

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[3]As of March 31, 1991, the FDIC and RTC had $87 billion of total assets in liquidating receiverships, with the prospect of additional billions forthcoming as additional troubled banks and thrifts are resolved. From August 9, 1989 through March 31, 1991, the FDIC resolved 216 institutions with total assets of $40.6 billion, while the RTC resolved 374 institutions with total assets of $145.1 billion. Furthermore, as of March 31, 1991 the RTC reported 204 institutions with total assets of $93 billion in its conservatorship program awaiting resolution.

[4]These data are taken from FSLIC records and monthly receivership reports.

contracting with private organizations possessing asset management and disposition expertise. The FSLIC's asset assignment policy called for placing with private contractors the most complex and distressed assets (usually commercial properties and non-performing loans collateralized by commercial properties) while the remaining assets were to be assigned to FSLIC receivership offices (residential properties and raw land). The private contractors acted as the government's agents in the commencement of foreclosure proceedings, in complex loan restructurings and workouts, and in the seizure of collateral on non-performing loans, as well as in the management and disposition of commercial real-estate-owned (REO). In addition, contractors would draw up business plans for asset disposition, including verifying appraised value, obtaining all legal documentation, preparing marketing plans, and estimating holding periods consistent with obtaining maximum recovery values.

Because of the disparity between private- and government-sector compensation of asset managers, the FSLIC found it difficult to attract sufficient numbers of qualified asset managers to staff its in-house needs. However, FSLIC officials believed that private contractors were cost-effective only for the most troubled assets. As a result, a plan was established to create a quasi-government entity that could offer the compensation sufficient to attract private-sector expertise, but that would funnel all proceeds of the asset management and disposition back to the FSLIC. Thus, in November 1985, the Federal Home Loan Bank Board chartered a new federal savings and loan association, the FADA, as a wholly owned subsidiary of the FSLIC. As a captive manager of FSLIC real estate, the FADA was intended to provide the best of both worlds, private-sector expertise in asset management and disposition coupled with cost savings over comparable private-sector services.

Prior to 1988, no uniform asset management agreements existed among private contractors, the FADA, and the FSLIC. Private contractors were paid management fees ranging from 0.5% to 1.2% of the book value of the assets, and disposition fees of between 1.0% and 2.0% of gross sales proceeds, depending upon the type and location of the assets. The FADA received fees for management that varied between 0.5% and 1.0% of assets, and disposition fees that were similar to those paid to private contractors. In January 1988, a Standard Asset Management Agreement (SAMA) was developed and adopted for all participants. Terms of the SAMA granted 0.5% fees for management, based upon the net takeover value of the asset. In addition, an

incentive fee was permitted for asset disposition based upon the timing of the sale: 1.5% during the first twelve months of the contract; 1.25% during the second twelve months; and 1.00% thereafter. These contract provisions persisted until the FDIC assumed FSLIC operations during August 1989.

With the chartering of the FADA, the FSLIC expanded to three its alternatives for asset management strategies: (i) public management by FSLIC receivership staff, (ii) quasi-private management by the FADA, and (iii) private management by private-sector contractors. The subsequent growth in receivership assets that accompanied the widening use of liquidations to resolve troubled thrifts forced the FSLIC to expand the role of both the FADA and private contractors in managing distressed assets throughout the latter half of the 1980s. By March 1989, nearly one-third of all non-cash receivership assets were being managed either by the FADA or by private contractors.

AN EMPIRICAL MODEL OF MANAGEMENT EFFICIENCY

In order to compare the relative efficiency of alternative asset managers, one can rank the mean present-value dollar recovery rates from assets sold by each type of manager. For each property sold, the present-value dollar recovery rate can be calculated from the initial value of the asset, the income generated by the asset, the costs of managing and selling the asset, and the proceeds from the sale of the asset. Thus, for each sold property:

$$Recovery\ Rate = \frac{NPV\ (Cash\ Flows)}{Initial\ Value}, \tag{1}$$

where

$$\begin{matrix} Net\ Present \\ Value\ of \\ Cash\ Flows \end{matrix} = \sum_{t=1}^{T} \frac{I_t - C_t}{(1+R_t)^t} + \frac{P-D}{(1+R_T)^T},$$

and

I_t = the income received in time period t,
C_t = the holding and management costs incurred during time period t,
T = the number of periods between takeover and disposition,
P = the sales proceeds,
D = the costs of disposition, and
R_t = the discount rate for period t, $t = 1$ to T.

In an ideal world, the mean value of this measure across properties under management could be used to rank asset managers. However, at least four problems arise in practical attempts to calculate this measure.

First, asset-specific historical cash flow data must be calculated. A predominant reason for the lack of empirical evidence on the recovery rates from distressed properties is the absence of asset-specific cash flow information on income generated by the assets and expenses from maintenance, management and disposition. Here, cash flow data were available from the FSLIC's Asset Management System (AMS), a database that tracked monthly cash flows of income and expenses for all FSLIC receivership assets.

Second, an objective initial value by which to calculate the recovery rates must be selected. While the terminal value of each asset analyzed in this study is observed as the sales price, the relevant base by which to calculate a measure of recovery rate is not. Three possible measures of initial value are appraised value, historic cost, and net takeover value.

Appraised value is the most current of the three measures because it is calculated after the asset has been taken over by the FSLIC. While appraisals are subjective opinions of value that will differ across appraisers even for the same property, research has demonstrated that, for portfolios of properties, appraisals are relatively accurate proxies for sales price (Cole et al. [3], [4]). However, for the distressed assets analyzed in this study, there are significant lags between takeover by the FSLIC and subsequent appraisal. Hence, use of appraised value as a base would ignore changes in value during the lag between takeover and appraisal. Because these lags may vary widely across properties, use of appraised value as a measure of initial value may give erroneous measures of relative performance across managers.

Historic cost is the most objective of the three base measures, calculated as the original book value of the loan collateralized by the asset. However, there is a substantial lag between the time when historic cost was recorded and the time of the FSLIC takeover, so that use of historic costs ignores appreciation and depreciation as well as any cash flows during this period. Because these lags vary widely across properties, the use of historic cost as a measure of initial value also may obscure the relative performance across managers.

In constrast with appraised value and historic cost, net takeover value (NTV) is calculated at the time an asset is taken over by the FSLIC and assigned to a specific manager, making it

preferable to alternative initial values on the basis of timing. By definition, NTV equals historic cost less any principal amortization while the loan was current, and less any writedowns recorded prior to takeover by the FSLIC. In addition, NTV is the base by which asset management and disposition fees were calculated in accordance with the SAMA. While NTV is not an actual transaction price, its drawbacks are less severe than those of the alternative measures of initial value for recovery rate calculations. Hence, NTV is used as the initial value for calculation of recovery rates.

The third empirical problem with calculating a recovery rate measure is the selection of an appropriate discount rate. Many economists have argued that expected cash flows from public-sector activities should be discounted at a riskless rate, or at least at a rate substantially below private rates. This position is based on two arguments. First, the proponents believe that the government can more effectively pool investment risk, eliminating, or at least reducing, the need for a risk premium. Second, government projects frequently confer benefits on society that are not captured in the cash flows. Arrow and Lind [2] maintain that success of an individual government project is independent of that of any other public or private investment. Thus, the correlation among the returns of these projects is zero and the variance of the return to the portfolio of government projects will approach zero as the number of projects becomes large. This alleged superior ability to spread risk leads Arrow and Lind to conclude that for government projects risk is irrelevant. Hence, they argue that the appropriate social discount rate for valuing government projects is the risk-free rate. This study uses the rate on one-year Treasury notes as a measure of the risk-free rate to discount asset-specific cash flows.[5]

The fourth empirical problem in calculating a recovery rate measure is the heterogeneity of real estate assets. Because a multitude of asset-specific factors affects the value of each property, the relative effectiveness of the receiverships, the contractors, and the FADA can only be assessed in an objective manner if the assets managed and sold by each are similar. This suggests that a matched sample of assets from each type of manager's portfolio should be selected for analysis. However, because the pool of sold REO assets was too small to find a

[5]Theoretically, equation (1) calls for use of discount rates equal to zero coupon bonds of different maturities. For computational simplicity, a single rate was used. In no case was a cash flow discounted for more than four years.

sufficient number of matched assets, alternative measures are employed to control for the effect of heterogeneity on managerial efficiency. In this study, managerial efficiency is modeled not only as a function of type of manager but also as a function of property type, difficulty of disposition, local-market economic health, and previous asset-specific writedowns.

Property Type

Type of property could be expected to influence relative efficiency if recoveries differ across property types and properties types are distributed unevenly across managers. Properties are assigned to one of six categories: office, retail, industrial, land, multifamily, and mixed-use/special purpose. Each category is represented by a dummy variable that takes on a value of one when the property is assigned to that category and a value of zero otherwise. In the estimation model, the mixed-use/special purpose category is excluded. Thus, the parameter estimates of the remaining categories measure the change in efficiency relative to mixed-use/special purpose facilities.

Difficulty of Asset Management

FSLIC procedures stated that smaller, less-complex assets generally were to be assigned to receivership staff, while assets that were larger and relatively more difficult to manage or sell generally were to be assigned to either the FADA or to private contractors. To control for this potential bias, a difficulty-of-disposition variable was constructed from rankings by a panel of asset-management experts. The panel of experts considered a variety of asset-specific factors that gauge the difficulty of asset management and used them to rank each property on a scale of one (least difficult) to five (most difficult). Factors considered by the group include functional obsolescence, poor design, problems with tenants, and legal problems.[6] Because these factors reduce the value of a property, a negative relationship is expected between the degree of difficulty variable and the recovery rate measure.

[6]Because the rankings by asset managers could differ systematically on the basis of their subjective perceptions of difficulty, each panel member also ranked a control group of six assets. The difference in the average control group ranking of each panel member and the average control group ranking for the entire panel were subtracted from that member's ranking of each non-control group asset to adjust for potential rating bias.

Market Health

The expected future health of a local economy impacts the value of a property located within its boundaries through expected future cash flows from the property. If sample properties managed by each entity are not distributed randomly across local markets, then managers responsible for properties in economically depressed areas would be expected to recover less per property than managers responsible for properties in more vibrant local markets. To account for this potential effect, the Metropolitan Statistical Area (MSA) in which each property is located was identified, and the change in MSA per capita income from 1985–88 is included in the model as a measure of investors' expectations about local-market economic health.[7] This variable should be positively related to the recovery rate.

Previous Asset Writedowns

Previous asset writedowns will affect recovery rates if such writedowns are consistently under- or overestimated. Writedowns taken prior to takeover may have been made for several reasons. When a real estate loan is foreclosed upon by an institution, the loan is written off and a new asset, REO, is booked. In the case of defaulted loans, the historical value of the loan invariably is greater than the appraised value of the REO property by which the loan is collateralized. The difference between the outstanding loan balance and the new REO asset balance is the amount of the writedown. This writedown decision usually is made by the management of the thrift.

Following foreclosure, the REO asset is subject to increased regulatory scrutiny by federal and state examiners and supervisors. A loss reserve may be established against the new REO asset's balance if it is considered likely that an additional loss would be recognized upon the asset's sale. This second writedown decision may be made either by thrift management or by the regulators.

Both of these writedown decisions were made prior to the asset coming under government control, although, in many cases, the assets were taken over by the government after the writedown decisions were made. The determination to liquidate a thrift

[7]Miles et al. [8] use similar measures of expected local-market economic health and report that these measures are highly significant in determining of values of commercial properties held by commingled real estate funds.

institution often was made soon after government examiners discovered large loan losses in the institution and forced their accounting recognition, thereby driving the institution into book-value insolvency.

Because the writedown decisions were subjective, it is likely that writedowns on some properties were excessive, while writedowns on other properties were insufficient. Properties with excessive writedowns would carry higher NTVs, while properties with insufficient writedowns would carry lower NTVs than would properties that were written down to correctly reflect prevailing market conditions. If, on average, writedowns were insufficient, then recoveries as a percentage of NTV should be inversely related to the writedown as a percentage of historic cost. In a deteriorating real estate market, writedowns may not fully reflect declines in market value, as owners have incentives to avoid recording book-value losses. Based upon a variety of indicators including vacancy rates, appraisal-based property returns, and non-performing real estate loans, the market for commercial real estate during the 1986–88 period can be classified as deteriorating, so that writedowns may have been systematically underestimated during this period.[8] Therefore, for each asset, the writedown as a percentage of historic cost is included as an additional explanatory variable.

The Intercept-Shift Recovery Rate Model

Having addressed the major complications in calculating the recovery rate measure, the task of testing for differences in managerial efficiency remains. Three types of property management are represented in the sample: management by public (receiverships), quasi-private (FADA), and private (contractor) entities. To test for significant differences across management entities, the recovery rate measure in equation (1) is estimated as a function of the control variables discussed above, with dummy variables included for quasi-private and private management.[9]

[8]According to Coldwell Banker Commercial, national office and industrial vacancy rates were climbing during the early 1980s to their peaks in 1985 87. These conditions were reflected, with a lag, in non-performing real estate loans reported by banks and thrifts on their quarterly call reports. The NCREIF-Russell Property Indices indicate that returns from commercial real estate became less attractive during the mid-1980s.

[9]In this analysis, receivership overhead expenses are allocated to FADA and contractor assets as well as to receivership assets. Without this allocation, the performance of the private and quasi-private managers would be overstated. However, estimation without such allocation yields results that are not qualitatively different from those presented in the text.

$$Recovery\ Rate_i = \beta_0 + \beta_1\ FADA_i + \beta_2\ CON_i + \Sigma\ \beta_j\ CONTROL_i + \mu_i\ , \quad (2)$$

where:

$FADA_i$ = 1 if property i is managed by the *FADA*, 0 otherwise,
CON_i = 1 if property i is managed by private contractors, 0 otherwise,
$CONTROL_i$ = a vector of property-specific control variables (difficulty rank, market health, and writedown as percentage of historic cost),
μ_i = a normally distributed random error term.

The Slope-Shift Recovery Rate Model

To gain additional insights into factors influencing any differences in recovery rates across managerial entity, a second specification of the model that includes a set of dummy interaction variables for quasi-private and private management is estimated. In this specification, additional explanatory variables include dummy variables for quasi-private and private management interacted with difficulty rank, market health, and percentage writedown. Significant positive (negative) interaction term coefficients indicate superior (inferior) performance in the management and disposition of distressed real estate assets with that particular characteristic relative to omitted categories.

SAMPLE AND DATA

The initial sample consisted of all receivership commercial REO assets sold during calendar year 1988. Commercial REO assets were selected because they constituted the greatest proportion of total value of receivership assets, and because they were the most common type of assets under management by each of the three organizations.[10] The year 1988 was selected for two reasons. First, a far larger number of REO assets (377) were sold in this year. For example, the FADA sold 66 properties in this year, more than double the number sold in any previous year.

[10]One- to four-family residential assets primarily were managed in-house by receivership staff. The small number of such assets sold by the FADA and private contractors precluded their inclusion in this analysis. Loans were excluded from the analysis because lengthy litigation proceedings in pursuit of clear title to collateral and other problems in analyzing loan workouts complicated the comparison of asset performance.

Second, receiverships only began to report asset-specific data in late 1987, so that inclusion of sales in earlier years would have necessitated labor-intensive collection of pre-sale cash flows. In many cases, cash flow data on asset sales in earlier periods simply were not available.

From the initial sample of 377 sold REO assets, properties were deleted if they were managed by more than one organization, if they involved a partial sale (one or more buildings sold from a multiple-building property), or if financial information on asset-specific cash flows or other demographic data was unavailable. Of the 377 initial sample assets, 141 satisfied at least one of these criteria and were deleted, resulting in a final sample of 236 properties with a total NTV of $407.4 million. This final sample consists of 124 receivership assets with a total value of $96.0 million; 66 FADA assets with a total value of $146.6 million; and 46 contractor assets with a total value of $164.8 million. The final sample is composed of 54 office, 20 retail, 18 industrial, 55 land, 71 multifamily, and 18 mixed-use/special purpose properties.

Property-specific financial data were obtained from the FSLIC Asset Management System. Additional historical financial data on sold REO assets were entered into the system specifically for this study. To facilitate comparison, all the cash flows, as well as initial asset balances, were compounded to the common date of December 31, 1988. Metropolitan Statistical Area (MSA) data on local-market economic health were obtained from the Bureau of Economic Analysis (BEA) of the Department of Commerce.

RESULTS

Recoveries from Distressed Assets

Table 1 presents average recoveries as a percentage of net takeover value for the entire sample of FSLIC receivership assets. In addition, the table provides average recoveries by type of property, by the degree of difficulty rank, by local-market economic health, and by writedown as a percentage of historic cost. These latter three breakdowns are presented by quartile.

The average recovery from the 236 assets in the sample was almost 64% of NTV. Because this figure is net of asset management, disposition, and financing cost, it represents a benchmark against which recoveries on distressed assets may be measured. Also of interest is the range of recoveries. While recoveries from some properties exceeded twice the net takeover value,

TABLE 1

Average Recoveries (by Property Characteristic)

	N	NPV of Cash Flows (Percentage of Net Takeover Value) Mean	Minimum	Maximum
All	236	63.6	−115.0	236.1
Office	54	74.6	−45.2	203.7
Retail	20	52.9	−35.1	122.4
Industrial	18	66.2	11.5	126.1
Land	55	69.9	−3.7	236.1
Multifamily	71	56.0	−115.0	185.1
Mixed-Use/Special Purpose	18	50.2	−18.6	143.9
Difficulty Rank, First Quartile	59	76.0	1.3	203.7
Difficulty Rank, Second Quartile	59	71.9	−3.7	170.0
Difficulty Rank, Third Quartile	59	64.8	−7.2	185.1
Difficulty Rank, Fourth Quartile	59	43.8	−115.0	236.1
Income Growth, First Quartile	59	34.4	−115.0	122.3
Income Growth, Second Quartile	59	62.1	2.3	203.7
Income Growth, Third Quartile	59	83.7	14.2	185.1
Income Growth, Fourth Quartile	59	76.5	−35.1	236.1
Percentage Writedown, First Quartile	59	64.8	1.3	203.7
Percentage Writedown, Second Quartile	59	57.0	−7.2	185.1
Percentage Writedown, Third Quartile	59	45.5	−115.0	122.3
Percentage Writedown, Fourth Quartile	59	87.1	−45.2	236.1

recoveries from the worst properties actually were negative. For these latter properties, management, maintenance, legal, funding, and disposition expenses exceeded sales proceeds and rental income. Hence, it may have been less expensive had the FSLIC given these assets away at takeover rather than marketed and sold them.

The average percentage recoveries from the various types of properties ranged from a high of 75% for office properties to a low of 50% for the mixed-use/special purpose property type. In between these two extremes were land, which returned 70%; industrial properties, which returned 66%; multifamily properties, which returned 56%, and retail establishments, which returned only 53%.

Recoveries are also broken down by degree of difficulty, local-market economic health, and percentage writedowns, and average recoveries are presented by quartiles. For degree of difficulty, the first through fourth quartiles rank the least to the most difficult assets. As expected, the results demonstrate that average recoveries from properties in the top two quartiles

involving the less difficult assets (76% and 72%) exceeded recoveries from properties in the bottom two quartiles involving the more difficult assets (65% and 44%). These results also provide support for the survey methodology developed to rank the least- to most-troublesome assets.

For the measure of market health, the first through fourth quartiles rank the lowest to highest changes in MSA per capita income from 1985–88. Average recoveries ranged from 34% in the first quartile to 84% in the third quartile. Recoveries in the second quartile were 63%, but recoveries in the highest quartile were only 77%, seven percentage points less than those in the third quartile.

For percentage writedown, the first through fourth quartiles rank the smallest to largest writedowns prior to government takeover expressed as a percentage of historic cost. Average recoveries were highest in the fourth quartile at 87%, but were lowest in the third quartile at 46%. Recoveries in the first and second quartiles averaged 65% and 57%, respectively. Average recoveries in the third quartile were brought down by one property with a return of −115%, while recoveries in the first quartile were inflated by a single property with a return of 204%. Hence, in spite of the dip in average recoveries in the middle two quartiles, there appears to be a positive relationship between percentage writedowns and recovery rates, suggesting that writedowns were systematically underestimated during the sample period.

Descriptive Statistics by Type of Manager

Table 2 displays by type of manager descriptive statistics for the recovery rate and other characteristics of the sample. The mean recoveries for the subsamples generally indicate that the FADA produced the highest recoveries as a percentage of net takeover value (77%), followed by the receiverships (68%), and the private contractors (32%). If asset managers were ranked solely on average recovery *without* accounting for other factors expected to impact property recoveries, quasi-private asset management would appear to be most efficient, while private management would appear to be least efficient.

The descriptive statistics in Table 2 also indicate that, relative to receiverships, the FADA and contractors managed assets that were larger in size, that were considered more difficult to manage and sell, and that had greater percentage writedowns. On average, contractors managed assets in more distressed markets

TABLE 2

Sample Statistics (by Type of Manager)

	Full Sample	Public	Quasi-Public	Private
NPV (Cash Flows) (% Net Takeover Value)	65.1	68.3	76.7	32.0
NPV (Cash Flows) ($ Thousands)	1,048.1	774.1	2,222.0	3,582.2
Office (Number of Properties)	54	40	10	4
Retail (Number of Properties)	20	10	6	4
Industrial (Number of Properties)	18	12	3	3
Land (Number of Properties)	55	36	13	6
Multifamily (Number of Properties)	71	23	29	19
Other (Number of Properties)	18	3	5	10
Holding Period, Average (Number of Days)	591	486	608	889
Difficulty Rank, Average (1 = Least, 5 = Most)	2.8	2.7	2.8	3.4
Income Growth, Average (Percentage Change, 1985–1988)	39.1	50	53	−16.6
Amount of Writedown (Percentage of Historic Cost)	22.2	14.7	34.4	24.9
Amount of Writedown ($ Thousands)	831.0	340.2	1,399.7	1,337.8

characterized by declining per capita income, while the FADA and receiverships managed assets in more vibrant local markets where per capita income was rising. Furthermore, it appears that the more troublesome assets were managed by other than receivership staff, in accordance with FSLIC procedures. Thus, contractors and the FADA managed more multifamily and mixed-use/special purpose properties, while receiverships managed more commercial office buildings and land. The relative differences in these additional factors that are expected to influence recovery values may explain the apparently inferior recoveries obtained by private asset managers.

Intercept-Shift Recovery Rate Model Results

Table 3 presents regression results from estimating the intercept-shift recovery rate model in Equation 2. These results

TABLE 3

Intercept-Shift Recovery Rate Model

Variable	Parameter Estimate	Standard Error
Dependant Variables: *NPV of Cash Flows as a Percentage of Net Takeover Value*		
Intercept	0.664**	0.128
Office	0.112	0.118
Retail	−0.017	0.135
Industrial	0.175	0.140
Land	0.085	0.116
Multifamily	0.054	0.110
Difficulty Rank	−0.074**	0.023
Income Growth	0.192**	0.038
Writedown	0.358**	0.088
FADA Management	0.039	0.067
Contractor Management	−0.184*	0.080
F-Value	9.45**	
R-Square	0.296	
Adjusted *R*-Square	0.264	

*significant at the 5% level
**significant at the 1% level

show that the average recovery from properties managed by contractors was less than average recoveries from properties managed by either receivership staff (significant at the 5% level) or the FADA (significant at the 1% level). The average recovery from properties managed by the FADA was slightly greater than that from properties managed by receiverships, but this difference is not statistically significant. Hence, these results indicate that private contractors were less efficient in the management of distressed assets than either receivership staff or the FADA.

All three of the control variables have the expected signs and are statistically significant at the 1% level. The NTV recovery measure is inversely related to difficulty rank and is positively related both to the measure of local-market economic health and to the writedown as a percentage of historic cost.[11] None of the

[11]As the discussion of the control variables indicated, there is potential for multicollinearity among the three control variables. To investigate, collinearity diagnostics were run on the model. Condition indices did not indicate that multicollinearity is a problem.

property-type dummy variables are statistically significant in explaining the recovery measure. Thus, while there appear to be significant differences in mean recoveries on different types of properties presented in Table 1, these differences are not significant when other factors affecting recoveries are considered. This suggests that the 64% mean recovery for the final sample is a meaningful benchmark for expected recoveries across property types.

Slope-Shift Recovery Rate Model Results

Table 4 presents the results from estimating an expanded recovery rate model where slope coefficients as well as intercept coefficients are allowed to vary across management types. This model allows for identification of the particular sources of the differentials in recovery rates across managers documented in

TABLE 4

Slope-Shift Recovery Rate Model

Dependant Variable:
NPV of Cash Flows as a Percentage of Net Takeover Value

Variable	Parameter Estimate	Standard Error
Intercept	0.771	0.089
Income Growth	0.158**	0.047
Difficulty Rank	−0.077**	0.028
Writedown	0.268**	0.095
FADA Management	−0.335	0.174
FADA * Diff. Rank	0.018	0.052
FADA * Inc. Growth	0.148	0.080
FADA * Writedown	0.705**	0.247
Contractor Management	0.136	0.239
Cont. * Diff. Rank	−0.087	0.066
Cont. * Inc. Growth	−0.293*	0.117
Cont. * Writedown	−0.468	0.285
F-Statistic	11.48**	
R-Square	0.360	
Adjusted *R*-Square	0.329	

*significant at the 5% level
**significant at the 1% level

Table 3. Property-type variables are excluded from this specification because they are not significant in any specification tested and because their exclusion gives clearer interpretations to comparisons of included dummy variables with the sole remaining excluded dummy variable, receivership management. With respect to the control variables, the results in Table 4 are similar to those presented in Table 3.[12] Once again, each of three of the control variables has the expected sign, and each is statistically significant at the 1% level. In addition, there now are significant differences between the FADA and receiverships as well as between private contractors and receiverships and between private contractors and the FADA.

For the FADA, all three of the interaction variables are positive. The writedown interaction is significant at the 1% level, implying that the FADA earned significantly higher recoveries from properties with larger percentage writedowns. In addition, an *F*-test of the joint significance of the four FADA variables is significant at the 5% level, evidence that the FADA produced significantly higher returns than did receivership staff. This suggests that the FSLIC's decision to charter a quasi-private asset management and disposition entity may have been consistent with the FSLIC's goal of minimizing losses to the thrift deposit insurance fund.

For private contractors, all three interaction variables are negative. The market-health interaction variable is significant at the 5% level, implying that contractors earned significantly lower recoveries in healthier markets than did either receivership staff or the FADA. An *F*-test of the joint significance of the four contractor variables is significant at the 1% level, confirming the results in Table 3, which imply that contractors earned significantly lower recoveries than either receivership staff or the FADA.[13]

However, as demonstrated by Guilkey et al. [6], in attempting to estimate recovery rates there is the potential for sample selection bias. If the properties sold from each manager's commercial real estate porfolio are not a random sample from that manager's entire portfolio of sold and unsold properties, then

[12]Results from expanded specifications including property-type dummies are not qualitatively different from those in Table 4, although other variables exhibit lower levels of significance.

[13]The *F*-statistic for a joint test of the significance of the three FADA variables is 3.29, significant at the 5% level. The *F*-statistic for a joint test of the significance of the four contractor variables is 4.76, significant at the 1% level.

parameter estimates may be biased. Thus, the analysis of relative efficiency may not be generalizable to each manager's remaining portfolio of unsold properties. Because of data limitations on unsold properties, it was not possible to employ standard selectivity tests to control for this type of bias. The results of this study should be interpreted accordingly.

CONCLUSIONS AND POLICY IMPLICATIONS

This study has examined average recoveries on distressed commercial real estate assets held by FSLIC receiverships during the late 1980s. The univariate statistics indicate that average recoveries from distressed commercial assets were 64% of net takeover value with higher recoveries coming from office, land, and industrial properties, and with lower recoveries coming from multifamily, retail and mixed-use/special purpose properties, However, analysis in a regression framework reveals that the differences in average recoveries from different types of properties are in fact driven by expected future local-market economic health (as measured by change in MSA per capita income), difficulty of management and disposition (as determined by a panel of asset-management experts), and the writedowns prior to takeover expressed as a percentage of historic cost. Local-market health and percentage writedown are positively related to the recovery rate, while difficulty of management is negatively related to recovery rate.

This study also has examined the relative efficiency of public versus quasi-private and private entities in the management of distressed real estate assets. Based upon the historical experience of the FSLIC, there is evidence of significant differences in the relative efficiency of management as measured by the percentage recovery rate. Private management by contractors provided inferior mean recoveries. After controlling for additional factors that influence recoveries, private contractors still produced inferior recoveries on assets located in areas where MSA per capita income was rising, while the FADA produced superior recoveries on assets with larger percentage writedowns.

This study may have implications for asset management and disposition strategies of U.S. government agencies and private sector firms (banks, thrifts, and insurance companies) with significant portfolios of troubled commercial real estate assets. First, the results provide a benchmark value for expected recoveries from sales of distressed commercial real estate assets —64% of net takeover value. Such a benchmark may prove

useful for estimating losses on troubled properties. In addition, this benchmark may also be useful in evaluating minimum recovery levels for the disposition of distressed assets controlled by U.S. agencies. If policymakers set minimum recovery levels that are overly optimistic, the ultimate disposition of troubled assets under government control may be delayed, imposing additional carrying costs and losses on the deposit insurance funds and taxpayers.

Second, the analysis identifies factors that appear to define the salient differences in distressed commercial real estate assets—expected local-market economic health, degree of difficulty in management and disposition, and writedowns prior to government takeover as a percentage of historic cost. Hence, these factors may be useful in classifying distressed real estate assets for purposes such as setting sliding scales of minimum recovery values.

Third, the superior performance by the FADA suggests that there may be a role for a quasi-private entity to coordinate private sector participation in the management and disposition of government agencies' distressed assets. The combination of private-sector expertise and the return of all proceeds to the government appears to produce the highest average recoveries for the taxpayer.

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