6-1987

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TAX EQUITY EFFECTS OF CREATIVE FINANCING:

EMPIRICAL EVIDENCE

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June, 1987

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ACKNOWLEDGEMENTS

ABSTRACT

This paper argues that tax inequities are produced when property assessments fail to account for the effects of creative financing. Changes in equity resulting from the capitalization of creative financing in housing prices are estimated from a sample of properties in Portland, Oregon using the Paglin-Fogarty model. The principal findings of the analysis indicate that: 1) on average, creatively financed houses have a higher mean assessment ratio than conventionally financed houses; 2) the assessment penalty for creative financing is systematically related to the market value of houses, and is both absolutely and relatively larger for houses with lower market values; 3) while the assessment policy in effect during the study period dictated that no adjustments should be made for creative financing, evidence of negative capitalization of financing in assessments was found. This result may have been produced by the appeals process and, given the cost of appeal relative to the benefits of a reduced assessment, would most likely have been associated with houses having higher valued financing packages. This would explain why the assessment penalty for creative financing falls more heavily on houses with lower market values.

Introduction

The U.S. housing market has been characterized in recent years by the emergence of unconventional mortgage instruments, including seller contracts, buydowns and assumption financing. These instruments are commonly termed "creative financing," and their popularity stems from the debt service savings that home buyers obtain due to the relatively lower interest rates that are charged. For example, at one point in the early 1980's creatively financed mortgages charged, on average, six percentage points less than conventionally financed mortgages (Lowry et al, 1983). The 1982 Census of Governments (U.S. Department of Commerce, 1984) reports that creative financing was used in 56 percent of the residential sales sampled in 1981. This is a conservative figure in that it is based on assumptions and first mortgages, and does not account for second and "junior" mortgages.

An important distinction between creative and conventional financing is that the former is provided by the property owner to the buyer, while the latter is provided by a third party. In creatively financed transactions, as a result, the sale price reflects both the market value of property and the capitalized value of the financing the seller provides the buyer (Jaffee, 1984).

Numerous studies have established that the debt service savings to buyers utilizing creative financing is, to varying degrees, capitalized in sale prices (see Sirmans et al, 1985, for a comprehensive review of the research on this subject). A conclusion that normally follows in much of this research is that the failure to adjust assessments for creative financing will produce inequities, given that a "fair" tax is one based "on the value of real property

and not on the characteristics of the buyer and seller or their transaction"
(Kochin and Parks, 1982; p. 516). Sirmans et al (1983) conclude:

> Since the assessments are based on market values, the buyer of a
> creatively financed house faces a higher property tax liability
> than the buyer who uses new conventional financing at current
> market rates to purchase an identical house. Even though the
> 'true' market values of the homes are the same, the premium paid
> for the financing creates an inequity in the tax system for the
> creatively financed buyer.

To eliminate the inequity associated with financing it is typically
recommended that assessed values of creatively financed properties be
adjusted downward by an amount equal to the product of the capitalized debt
service savings and the assessment ratio. Approximately one third of the
states in the U.S. endorse an assessment policy consistent with this
recommendation (Strathman and Wilcox, 1986), while most of the others have
contemplated adopting a policy to deal with creative financing.

The purpose of this paper is to estimate the changes in assessment equity
attributable to creative financing. Our first concern is to determine whether
horizontal inequity increases when adjustments for financing are not made by
the assessor. Horizontal inequity occurs when houses with the same market
values are assessed at different levels. Second, we evaluate corresponding
changes in vertical inequity. This type of inequity is produced when assessment
ratios differ systematically with respect to market values, and can be either
regressive or progressive in nature. Regressive vertical inequity, for example,
results when lower valued houses are over-assessed and higher valued houses are
under-assessed. Finally, we test whether group assessment discrimination
between creatively and conventionally financed houses exists. This would

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result when a pattern of divergence in assessments arises due solely to the type of financing employed. We call this divergence the "assessment penalty," and its pattern can also be regressive or progressive. A regressive assessment penalty results when the percentage deviation in assessments between creatively and conventionally financed houses is greater at lower market values than at higher market values.

A sample of 151 residential property sales in Portland, Oregon from the 1981-82 period are the focus of our analysis, which is comprised of two major parts:

1). Estimation of the value of debt service savings from creative financing that is capitalized in housing prices;

2). Estimation of the changes in assessment equity attributable to the capitalized value of financing.

Hedonic analysis is employed to estimate the rate of capitalization of the debt service savings in housing prices. These savings are measured according to the method developed by DeLacy(1983). Paglin and Fogarty's (1972) approach is then used to determine whether inequities are introduced in assessments when adjustments for financing are not made.

The general implications of this issue are important for several reasons. First, property taxes are the source of 75 percent of local tax revenues, and totalled nearly $100 billion in 1985 (Advisory Commission on Intergovernmental Relations, 1986). Thus inequities resulting from creative financing could produce substantial shifts in tax burdens. Second, property values are typically inferred from a limited amount of information gained from observed sales. If

assessments must be adjusted for the effects of financing, this will require collecting information not presently held by assessors in most states. Gathering financing information would be costly, and access to it is presently denied in some states. If demonstrably better assessments are not produced with the inclusion of this information, this effort would have questionable merit. Given that tests of assessment equity have not been applied to this point, the question of whether significant inequities result when adjustments for financing are not made has not been resolved (Strathman and Wilcox, 1986).

Effects of Creative Financing on Assessment Equity

In estimating the market values of all properties in a jurisdiction the assessor must make use of information provided by a limited number of recent sales. The task facing the assessor is one of developing a valuation method to estimate what price each "unsold" property would have brought had it been sold during the period, based on a sample of prices and attributes of the properties that actually were transacted. A valuation method formulated along these lines tacitly assumes that observed sale prices represent the market value of property. When the savings to buyers using creative financing are capitalized in sale prices the assessor's benchmark for market value becomes unreliable. If the taxes imposed in the jurisdiction are set according to the objective that they reflect the value of property and not values attributable to the transaction of property, it becomes important to establish reference prices that are purged of the influence of financing. Alternatively, if the effects of financing are not taken into account in the assessment process, the pertinent question would be "To what extent does this confound the assessor's estimates of value?" If a bias due to financing

exists assessments could be judged to be equitable when they are actually
not, and tax shifts would be manifested within the residential property class,
in residential properties relative to other classes, and in some jurisdictions
relative to others.

Figure 1 illustrates how differences in the definition of market value
attributable to the capitalization of creative financing can influence the
evaluation of assessment equity. Two perfect equity lines (e-e and e-e*) are
presented, representing alternative ideal situations wherein all properties
are assessed at an identical percentage of market value. The difference in
the slopes of these perfect equity lines (which is exaggerated in the figure
to ease inspection) results from differences in the definition of market value.
The slope of line e-e is defined as the ratio of the mean assessed value (AV)
to the mean observed sale price (MV). Line i-i is drawn relative to this
perfect equity line to represent the actual ratio estimated by a regression of
AV on MV. Vertical inequity is present when the slopes of the e-e and i-i
lines differ. An index measure of vertical inequity based on this difference
would be $1 - b_i/b_e$, where the b values represent the respective slopes. An
index value greater than zero indicates regressive vertical inequity (illustrated
in Figure 1), while a value less than zero indicates progressive vertical
inequity. Horizontal inequity is measured by the ratio of the standard error
of estimate from the i-i regression to the mean assessed value: $SEE/\overline{AV}$.

The other perfect equity line (e-e*) in Figure 1 represents the ideal
situation where the capitalized value of creative financing has been subtracted
from the observed sale price. The slope of this line is determined as follows:

Figure 1

Perfect Equity Lines for Observed (e-e) and Adjusted (e-e*) Prices

and Associated Hypothetical AV-MV Regressions (i-i; i*-i*)
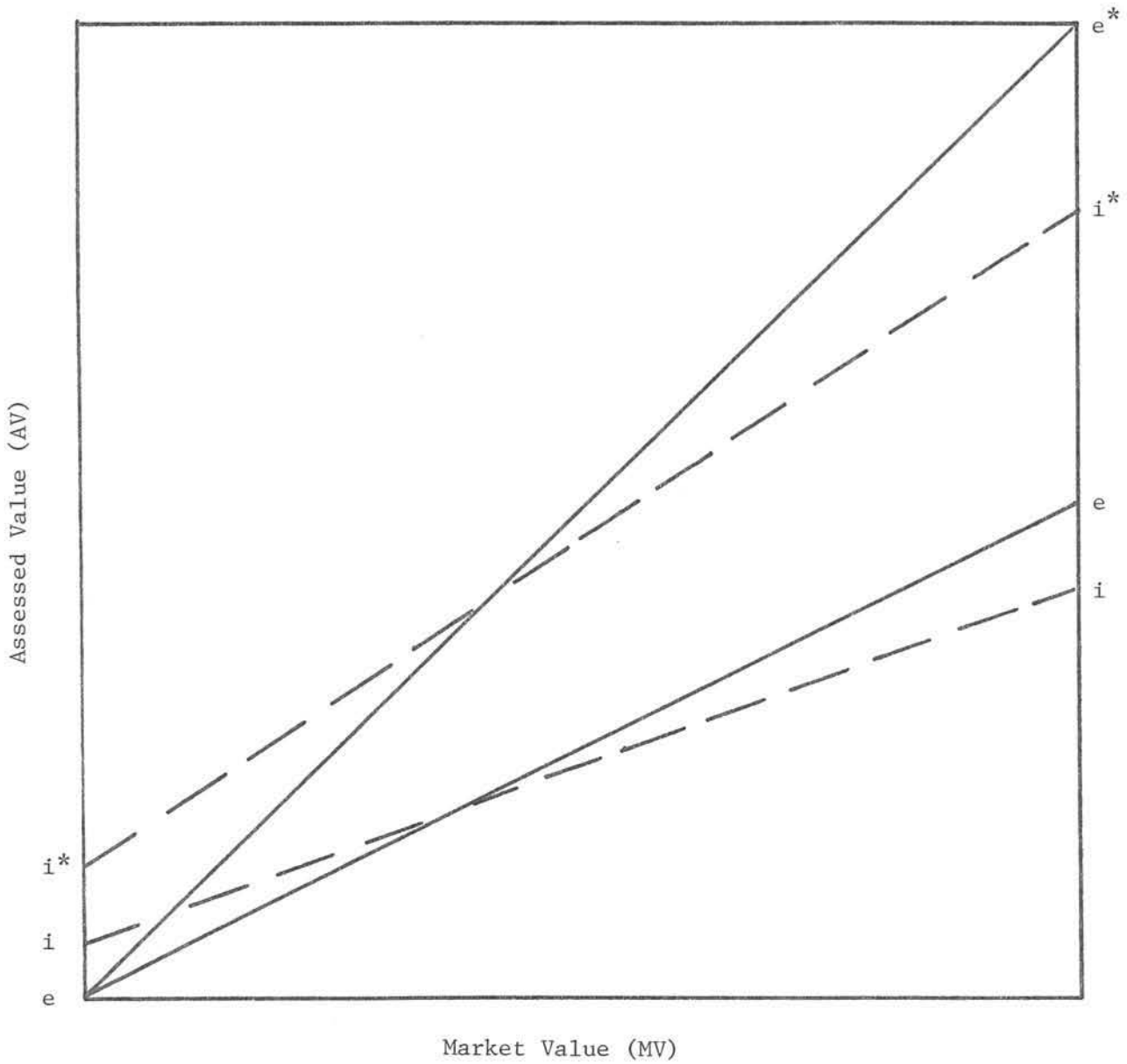
$$b_{e^*} = \frac{\overline{AV}}{\overline{MV} - (r \cdot \overline{F})} \qquad , \text{ where} \qquad (1)$$

$\overline{AV}$ = the mean assessed value;

$\overline{MV}$ = the mean observed price;

r = the proportion of properties that used creative financing;

$\overline{F}$ = the mean capitalized value of creative financing in the sales where it was used.

The change in the slope of the perfect equity line is positively related to both the proportion of residences utilizing creative financing and the value of financing capitalized in housing prices. Holding the tax rate fixed, the difference in the slopes of the two equity lines ($b_{e^*} - b_e$) measures the proportionate increase in the average tax burden on the residential property class attributable to the presence of creative financing.

The slope of the i^*-i^* regression line in Figure 1 is shown to shift in the same proportion as the $e-e^*$ line, leaving the measure of vertical inequity unchanged. This would occur if the capitalized value of creative financing is a constant share of the market value. Alternatively, when the capitalized benefits of financing are proportionately greater for lower valued homes, a relative increase in regressive vertical inequity would result. The effects of purging the value of financing on horizontal inequity depend on how prevalent creative financing is in the housing market and also on whether the capitalized values are a fixed share of the market value. If all properties were creatively financed and the capitalized value of financing represented the same proportion of the value of each sale,

horizontal inequities would not change given the change in definition of market value. A number of states have adopted a "prevailing market" assessment policy (Strathman and Wilcox, 1986) which in effect presumes that the two conditions noted above hold. Thus, changes in horizontal equity, where they exist, can be traced to a failure of either of these two conditions to hold in reality. One would expect the greatest increases in horizontal inequity to occur when half the properties are creatively financed and the correlation between the capitalized value of financing and the market value equals zero.

Figure 2 illustrates the outcome when some of the properties are creatively financed and some are conventionally financed. The perfect equity line e-e* is reproduced from Figure 1, and two new equity lines are introduced: e-e$_1^*$, associated with creatively financed houses, and e-e$_2$, associated with conventionally financed houses. Using this figure we can directly examine systematic assessment discrimination between creatively and conventionally financed houses. In the aggregate this can be measured in terms of the difference in the slopes of the respective perfect equity lines. The actual contrast in assessments is represented by the area between the respective i-i regression lines. We call this area the systematic "assessment penalty" attributable to financing conditions. When the capitalized value of creative financing is a constant share of the market value of housing this penalty will be neutrally distributed with respect to changes in market value. If the capitalized value of financing represents a larger share of market value for lower valued houses than for higher valued houses, the assessment penalty will be regressively distributed.

Figure 2

Perfect Equity Lines for Overall Sample (e-e*), Creatively

Financed (e-e$_1^*$) and Conventionally Financed (e-e$_2$) Houses

and Hypothetical AV-MV Subsample Regressions
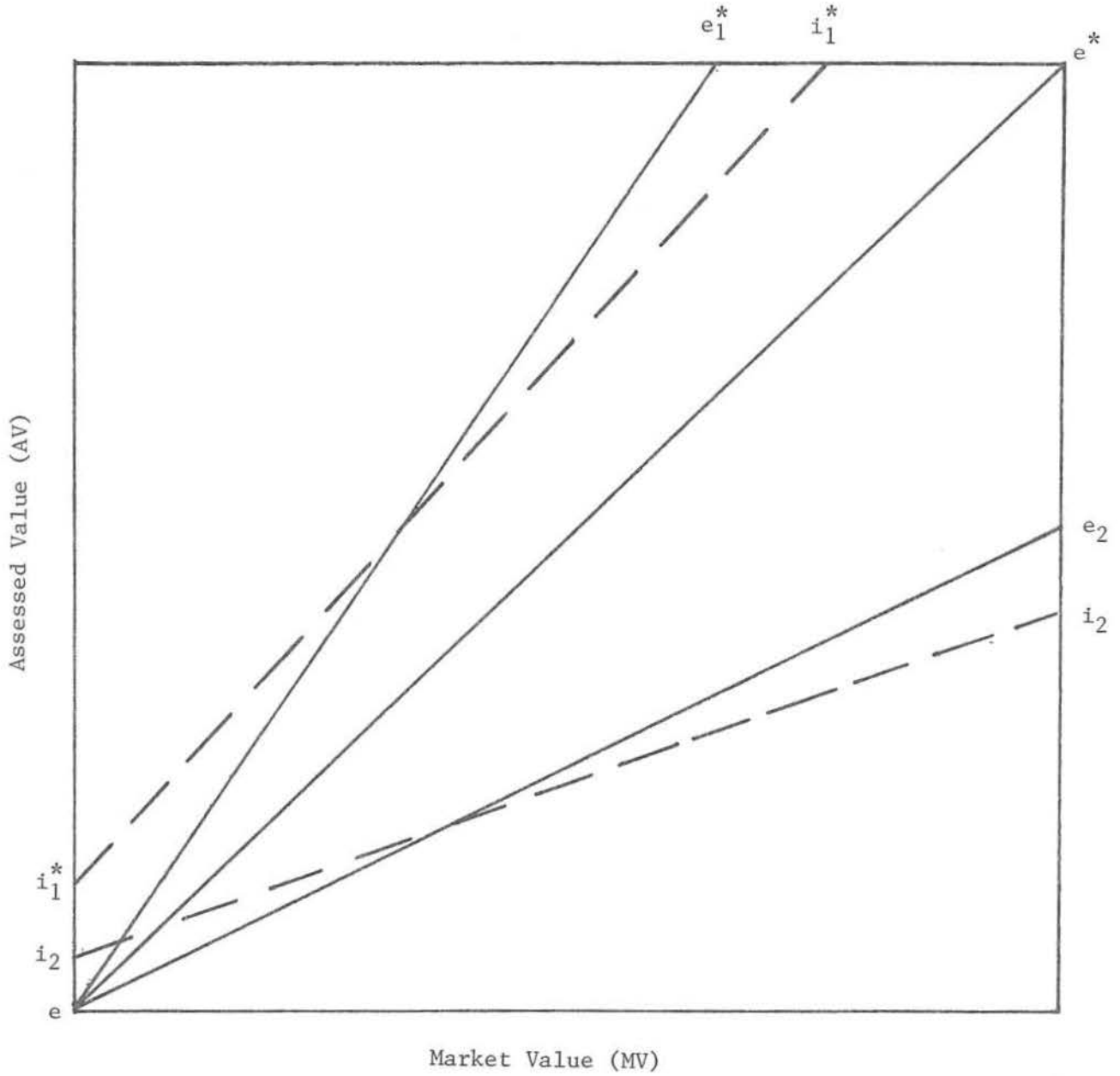
The relationships illustrated in Figures 1 and 2 are operationalized empirically in the following manner. First, we are interested in estimating the systematic structure of assessments based on the level of information at the assessor's disposal. This dictates that we accept observed sale prices as the representatives of market value, and apply the Paglin- Fogarty regression model as it was originally specified:

$$AV_i = a_0 + b_1 \cdot S_i + e_i , \tag{2}$$

where S_i represents the observed sale price. The estimated regression coefficients are evaluated with respect to the null hypotheses pertaining to vertical equity, i.e.,

$$
\begin{aligned}
a_0 &= 0 \\
b_1 &= b_e
\end{aligned}
\tag{3}
$$

The coefficient of horizontal inequity is also determined given the standard error of estimate and the mean assessed value. Next, we introduce new information pertaining to the capitalized value of financing. We purge the observed sale prices of this value, thereby generating a new surrogate for market value based solely on the value of property. This leads to the following specification:

$$AV_i = a_0 + b_1^* \cdot S_i^* + e_i , \text{ where} \tag{4}$$

$$S_i^* = S_i - v \cdot F_i , \text{ and}$$

F_i = the value of debt service savings associated with the use of creative financing in the i th property;

v = the estimated capitalization rate.

The parameter estimates from equation 4 are also evaluated in terms of vertical and horizontal equity. We then calculate the changes in the vertical and horizontal inequity coefficients between equations 2 and 4 to determine the changes in the levels of inequity attributable to the effects of creative financing on the measures of market value.

Finally, we decompose the total sample into conventional and creatively financed subsamples and re-estimate equation 4 for both subsamples in order to test whether the estimated patterns of assessments can be systematically distinguished on the basis of financing conditions. The Chow test (Chow, 1960) is applied to the sets of coefficients in the subsamples in reference to the coefficients estimated for the total sample. The results of the Chow test will indicate whether systematic assessment discrimination exists as related to financing. Using the coefficients from the subsamples, we then calculate the assessment penalty over the range of market values in the sample.

The approach outlined above hinges on recovering an estimate of the rate of capitalization of creative financing benefits in housing prices. Knowing the capitalization rate, we can then purge observed sale prices of the value of financing and thus isolate the systematic effects of financing conditions on assessment equity. The estimation of this capitalization rate is taken up in the next section.

Capitalization of Creative Financing

A sample of 151 single family residential sales was selected from an area of southeast Portland to operationalize our analysis. An effort was

made to define the study area to be as homogeneous as possible with respect to socioeconomic and physical factors to control for neighborhood effects on housing prices (Linneman, 1980). The study area can thus be described as a submarket within the overall metropolitan housing market. The sample represents nearly 5 percent of all sales reported in the study area by the Oregon Multiple Listing Service, and includes transactions that occurred between June 1981 and July 1982. Sale prices, assessed values and the physical characteristics of the properties were obtained from the Multnomah County Office of Assessment and Taxation. Each of the sample properties had been subject to an on-site appraisal during the preceeding year. Data on financing were taken from earnest money agreements provided by area real estate brokers.

Creative financing was utilized in 123 of the sample observations. These transactions were selected to recover an estimate of the capitalization rate. Seller contracts were the predominant source of mortgage credit in this subsample, accounting for 71 percent of the transactions. Assumptions represented 10 percent of the total, while the remaining 19 percent were financed by a combined assumption-seller contract arrangement.

The following model was specified to estimate the capitalization rate associated with creative financing benefits:

$$S = f(\ \underline{X}\ ,\ MKT\ ,\ TIME\ ,\ DIST\ ,\ F\ )\ ,\ \text{where} \tag{5}$$

S = the observed sale price;

$\underline{X}$ = a vector of housing attributes, including

HSIZE = finished living area, in square feet;

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MSTORY = a multiple story dummy variable (1 if multistory,

0 if single story);

BSMT = a basement dummy variable (1 if the residence has

a basement, 0 if not);

LSIZE = the size of the lot, in square feet;

FPL = a fireplace dummy variable (1 if present, 0 if not);

BATHS = the number of bathrooms;

AGE = the age of the residence, in years;

GAR = a garage dummy variable (1 if present, 0 if not);

MKT = the number of days the residence was listed for sale;

TIME = the month of sale, with June 1981 = 1 to June 1982 = 13;

DIST = the distance from the residence to the downtown core,

in hundreds of feet;

F = the present value of the debt service savings derived from

the use of creative financing, in dollars.

With the exception of financing the variables listed above are representative of the attributes employed in hedonic analysis of housing prices (Weicher and Hartzell, 1982), and are consistent with the level of information maintained in the records of most assessors. The financing variable was measured using DeLacy's (1983) truncated cash flow method, which determines the present value of the stream of monthly debt service savings that results from using creative financing rather than a conventional mortgage instrument. It is represented as follows:

$$F = \sum_{i=1}^{60} \frac{P_c - P_{cf}}{(1 + r)^i} \text{ , where} \tag{6}$$

P_c = the monthly debt service for a conventional

     mortgage instrument;

P_{cf} = the monthly debt service for the observed

     creatively financed mortgage;

r = the discount rate.

DeLacy's truncated cash flow method limits the discounting period to a maximum of five years, reflecting the average holding period for residential property. This limit is imposed because creatively financed mortgages are typically subject to due-on-sale provisions. Thus the buyer benefits from lower debt service for the period of ownership rather than the stated term of the loan. Second, the higher default risks associated with creative financing (Koch et al, 1982) are reflected in a discount rate that exceeds the new conventional mortgage rate.

The means, standard deviations, parameter estimates and t-values for the capitalization model are presented in Table 1. The majority of the coefficients are statistically significant and their signs are consistent with expectations. Given our focus on the capitalization rate for financing benefits, we will limit the discussion of these results to that coefficient and effectively treat the remaining variables as controls for exogenous sources of bias.

The coefficient associated with the financing variable, which is directly

Table 1

Capitalization Model Descriptive Statistics and Parameter Estimates

	Mean	Standard Deviation	Estimated Coefficient	t-value
HSIZE	1264	380	16.32	5.60*
MSTORY	.42	.50	-1258.89	-.68
BSMT	.74	.44	2338.86	1.53
LSIZE	6315	2460	.04	.13
FPL	.62	.49	7178.91	4.69*
BATHS	1.27	.42	3527.01	1.94*
AGE	46	21.68	-131.36	-2.92*
GAR	.76	.43	-1952.59	-1.16
MKT	70	55	-2.04	-.17
TIME	7.17	3.48	-528.38	-2.74*
DIST	294	120	4.70	.60
F	5790	2111	1.04	3.11*
INTERCEPT			31,435.63	6.34*
R^2			.66	
F			16.43	
SEE			7067	
N			123	

* Statistically significant at the 95 percent level of confidence.

interpretable as the capitalization rate, indicates that 104 percent of the present value of the debt service savings from creative financing is capitalized in housing prices. Evaluated at the sample means, creatively financed transactions incurred a premium totalling $6,020. This premium represents over 10 percent of the mean observed price ($56,700).

Empirical Results

Given the estimate of the capitalization rate associated with creative financing benefits, we then estimated the effects of financing on assessment equity according to the format set forth earlier. Table 2 contains the pertinent regression results, the calculated slopes of the associated perfect equity lines, and the vertical and horizontal inequity coefficients.

The slopes of the perfect equity lines show the assessment ratios $(\overline{AV}/\overline{MV})$ for the overall sample based on observed sale prices and on sale prices adjusted for capitalization of the financing benefits, as well as for sub-samples based on the type of financing used. When observed sale prices are used as the benchmark for market value the slope of the perfect equity line (.999) shows that the assessor is nominally adhering to a full market value standard. When the capitalized value of financing is subtracted from the observed prices of the creatively financed houses in the sample, the slope of the perfect equity line increases to 1.093. The difference between these two slopes can be interpreted as the change in the average effective tax rate for the overall sample attributable to the capitalization of financing benefits.

For the conventionally financed subsample the perfect equity slope is 1.016, while for the creatively financed subsample it is 1.113. These slopes

Table 2

AV-MV Regression Results[*] and Assessment Inequity Coefficients

	Intercept	b_i	R^2	SEE	Perfect Equity Slope	Vertical Inequity Coefficient	Horizontal Inequity Coefficient
1. Total Sample, Observed Prices	-876 (-.34)	1.014 (22.93)	.78	6467	.999	-.015	.114
2. Total Sample, Adjusted Prices	3255 (1.29)	1.030 (21.58)	.76	6776	1.093	.058	.120
3. Conventionally Financed Subsample	-3932 (-.71)	1.086 (11.28)	.83	6906	1.016	-.069	.121
4. Creatively Financed Subsample	2981 (1.07)	1.054 (19.59)	.76	6433	1.113	.053	.114

[*] t-values are given in parentheses.

are 1.7 and 11.4 percent greater than the benchmark slope, and indicate how
the increase in the effective tax rate is distributed between the two groups.
Clearly, the creatively financed houses absorb virtually all of the increase
in the effective tax rate. Comparing the perfect equity slopes for the two
subsamples gives us the average assessment differential due to financing,
a broad indicator of horizontal inequity along the lines discussed by
Sirmans et al (1983). On average, the effective tax rate for creatively
financed houses is 9.5 percent higher than for conventionally financed
houses.

The average differences in assessment ratios tell us nothing about the
actual distribution of assessments over the range of market values, however.
This information is provided by the regression results in Table 2. Estimates
for the overall sample using observed sale prices (corresponding with
equation 2) are given in the first row. The coefficients indicate the
presence of a small degree (not statistically significant) of progressive
vertical inequity, and horizontal inequities averaging over 11 percent of
the mean assessed value. The coefficients given in the second row
(corresponding with equation 4), where the capitalized value of financing
benefits have been subtracted from the observed sale prices, show slight
(again, not statistically significant) regressive vertical inequity. The
coefficient of horizontal inequity also increases to more than 12 percent
of the mean assessed value. The difference in the two horizontal inequity
coefficients (approximately 5 percent) represents the change in horizontal
inequity in the overall sample attributable to financing conditions.

The final two regressions examine the two subgroups for systematic assessment discrimination as related to financing conditions. The Chow test was applied to the sums of squares from the two regressions (in reference to the overall sample regression with prices adjusted for financing), producing an F statistic of 6.98 with 2 and 147 degrees of freedom. The calculated value surpasses the critical F at the .002 level, indicating significant differences in the coefficient sets for the conventional and creatively financed subgroups. Thus the test supports the existence of assessment discrimination on the basis of financing conditions.

Given the opposing vertical orientations for the two subgroups – slightly regressive for creatively financed houses and slightly progressive for conventionally financed houses – the resulting pattern of assessment discrimination between the subgroups is regressive. Using the regression coefficients from the two subgroups we can calculate the estimated assessed values for the range of market values in the study and determine the systematic pattern of the "assessment penalty" for creatively financed houses. These values are given in Table 3. Regressivity of the assessment penalty is established (in the final column) by the fact that it represents a smaller percentage of market value for higher valued than lower valued houses. Moreover, the same pattern results when considering the absolute value of the assessment penalty.

The assessment penalty's regressive pattern could have been produced by a departure from policies dictating that no adjustments for financing

Table 3

Assessment Penalty for Creative Financing

and its Relation to Market Value

Market Value	Estimated Assessed Val. (Creative)	Estimated Assessed Val. (Conventional)	Absolute Assessment Penalty	Assessment Penalty as a % of Market Value
$40,000	$45,141	$39,508	$5,633	14.1
50,000	55,681	50,368	5,313	10.6
60,000	66,221	61,228	4,993	8.3
70,000	76,761	72,088	4,673	6.7
80,000	87,301	82,948	4,353	5.4
90,000	97,841	93,808	4,033	4.5
100,000	108,381	104,668	3,713	3.7

be made in assessments. To examine this possibility we regressed assessed values on the observed sale prices and the value of debt service savings for the 123 creatively financed houses. The results of this regression are as follows:

$$AV_i = 273.0 + 1.035\ S_i - .456\ F_i$$
$$(.09)\quad (19.51)\qquad (1.58)$$
$$R^2 = .78 \qquad SEE = 6202$$

The coefficient associated with the financing variable is significant at the .06 level, and indicates that nearly half the value of creative financing is negatively capitalized in assessments. Thus it appears that the assessor has "split the difference" between the alternatives of ignoring and fully accounting for the capitalization of financing benefits in housing prices. This result also suggests why the pattern of vertical inequity for creatively financed houses is regressive, in contrast with the progressive pattern for conventionally financed houses. Some possible reasons for this result are discussed in the concluding section.

Conclusions

Our analysis of the changes in assessment equity resulting from the use of creative financing can be grouped into four major findings. First, we found that horizontal inequity increased approximately 5 percent when observed sale prices were corrected for the capitalization of creative financing. This small increase was primarily due to the composition of the sample, as over 80 percent of the houses were creatively financed. Given the predominance of creatively financed houses in the sample, a

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correction for financing effects should not be expected to produce a very large change in the horizontal inequity coefficient. In effect, our analysis shows that horizontal differences do not emerge when a very large proportion of the sample undergoes a transformation. This is, in fact, the rationale that a number of states have used in deciding not to adopt a policy to adjust for creative financing (Strathman and Wilcox, 1986); when conditions in the mortgage market are characterized by extensive use of creative financing, horizontal inequity among creatively financed houses is not a serious concern.

Although horizontal inequity did not increase noticeably following the correction for financing benefits, this correction did lead to an increase in the real tax rate for these properties; this is our second major finding. To the extent that the change in the use of creative financing was limited to the residential housing market, it generated a tax shift that increased the tax burden on residential properties relative to commercial and industrial properties.

Third, we found that the assessment penalty for creatively financed houses was regressively distributed with respect to their market values. The estimated penalty was $5,600 for a $40,000 house (14 percent of market value), while for a $100,000 house the penalty was $3,700 (only 4 percent of market value). Thus the increase in the property tax burden due to the effects of financing was more heavily concentrated at the low end of the market.

Fourth, we found a pattern of negative capitalization of creative

financing benefits statistically evident in assessments. Assessment policy

in Oregon at that time did not endorse adjustments for financing. This

finding, however, was more likely to have been produced by the appeals process

than by the action of the assessor. Owners of creatively financed houses

could appeal their assessments and obtain an adjustment, basing the appeal

on a professional appraisal that estimated market value using comparable

properties that were conventionally financed. The Board of Equalization may

have approved a reduction on the basis of such an appraisal, tacitly

contradicting the "no adjustment" policy. Evidence for this can be found

in the rate of appeals filed during the period when creative financing gained

popularity. Historically, about one percent of the residential assessments

in Multnomah County (the tax jurisdiction for the study area) have been

appealed in any given year. During the 1980-83 creative financing boom about

3 percent of all residential assessments were appealed annually. On the basis

of the composition of our sample, the rate of successful appeals would have

had to increase to over 6 percent to account for the negative capitalization

of the debt service savings of the typical creatively financed house. However,

given the cost of obtaining an appraisal, there is reason to expect that

appeals are likely to be filed by homeowners who stand to gain the greatest

reduction in their assessments. The decision to file an appeal would be

rational if the appeal costs are less than the present value of the tax

savings from a reduced assessment multiplied by the probability that the

Board of Equalization acts favorably on the appeal. Given an appraisal cost

of $300, a probability of successful appeal of .5, a property tax rate of

.028, and discounting the tax savings at 10 percent over five years, the

break-even reduction in assessed value would be just over $5,600. Thus if the capitalized value of financing were greater than this amount it would have been in the owner's interest to choose to appeal.

The impact of creative financing on assessment equity clearly has greater distributional effects than previously thought. While some areas of previous concern (e.g., those dealing with conventional indicators of horizontal inequity) have not been supported by our analysis, other equity concerns (e.g., the pattern of the assessment penalty and the shift in the tax burden to creatively financed houses) have newly emerged here. These distributional issues can be resolved in pratice, but it will require additional financing information in the states where adjustments are not presently made.

REFERENCES

Advisory Commission on Intergovernmental Relations (1986), Significant
Features of Fiscal Federalism: 1985-86 Edition, Washington, D.C.

Chow, Gregory C. (1960), "Tests for Equality Between Sets of Coefficients
in Two Linear Regressions," Econometrica, 28:591-605.

DeLacy, P. Barton (1983), "Cash Equivalency in Residential Appraising,"
The Appraisal Journal, 51:81-88.

Jaffee, Dwight M. (1984), "House-Price Capitalization of Creative Finance:
an Introduction," Housing Finance Review, 3:107-117.

Koch, Donald L., Delores W. Steinhauser and Keith R. Ihlanfeldt (1982),
"The Risks of Creative Financing," Economic Review, Federal Reserve
Bank of Atlanta, 4-13.

Kochin, Levis A. and Richard Parks (1982), "Vertical Equity in Real Estate
Assessment: a Fair Appraisal," Economic Inquiry, 20:511-532.

Linneman, Peter (1980), "Some Empirical Results on the Nature of the Hedonic
Price Function for the Urban Housing Market," Journal of Urban Economics,
8:47-68

Lowry, Ira S., Carol E. Hillestad and Syam Sarma (1983), California's Housing:
Adequacy, Availability and Affordability, Santa Monica, The Rand Corp.

Paglin, Morton and Michael Fogarty (1972), "Equity and the Property Tax: a New
Conceptual Focus," National Tax Journal, 25:557-565.

Sirmans, G. Stacy, C.F. Sirmans and Stanley D. Smith (1983), "Measuring
Inequities in Property Tax Assessments in the Presence of Creative
Financing," Unpublished paper.

_____ (1985), "The Issues and Implications of Creative Financing and
Housing Prices," Property Tax Journal, 4:383-415.

Strathman, James G. and James P. Wilcox (1986), "Creative Financing and the Assessment of Residential Property: Review and Survey Results," Property Tax Journal, 5:23-41.

U.S. Department of Commerce, Bureau of the Census (1984), Taxable Property Values and Assessment-Sales Price Ratios, Volume 2, 1982 Census of Governments.

Weicher, John C. and David Hartzell (1982), "Hedonic Analysis of Home Prices: Results for 59 Metropolitan Areas," in C.F. Sirmans (ed.), Research in Real Estate, Greenwich, JAI Press, 267-291.