

The Co-op Discount

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Abstract

Cooperative and condominium housing differ in several ways that might be expected to influence their pricing. Most but not all of these differences argue for a higher valuation for condominiums. Hedonic equations estimated on a national sample indicate that the price differential on the average condo/co-op unit in 1987 was 12%. Condos maintain a price premium under a variety of specifications, although its magnitude depends on the bundle of attributes being priced.

Key Words: cooperative housing, condominium, house prices

Most owner-occupied housing in multiunit structures takes on one of two legal forms. One is condominium ownership, in which the occupant has title to a specific apartment and a part interest in common areas and facilities. The second form, cooperative, is a corporation that issues stock representing an ownership stake in the project and entitling occupancy of a specific dwelling. Initial share allocations are proportional to the size and amenities offered by the different units in the co-op project.¹

Debt financing in condo projects occurs via mortgages on individual units. Co-ops use a “blanket” mortgage (also known as a master mortgage, a project mortgage, or an underlying loan) on the entire project, with the co-op corporation as the borrower. In addition, if the project has appreciated over time, resales of individual shares are often financed by “share loans” to the individual owners. These share loans are collateralized by the shares.

Some co-ops have limited equity status, a vehicle for promoting preservation of affordable housing. In a limited equity cooperative, the cooperative corporation, through its bylaws, places a limit on the return allowed when shares are sold, with the intent of keeping the unit in the affordable housing stock, regardless of current market values.

Condos and co-ops thus differ in ways that might result in different market valuations for physically and locationally comparable units. This article discusses those differences and estimates their market importance.

1. Evolution of the Markets for Condos and Co-ops

Cooperative housing in the U.S. dates back to the 1870s. Prior to the early 1960s, real estate laws were such that the cooperative form of ownership was the only practical way of allowing occupant-ownership of units in multifamily structures. Many co-ops went bankrupt

during the depression of the 1930s, tarnishing the image of this type of housing. However, following World War II, the FHA introduced an insurance program for the “blanket” mortgages on cooperatives. This insurance program renewed lender confidence in co-ops, and it is estimated that half of all co-ops in 1970 had FHA insurance coverage of their mortgage.

Although there does not appear to have been any outright prohibition of condominium housing in 20th century U.S. markets, there was little development of this ownership form until the 1960s, when states began to enact enabling legislation. By 1967, all but one state had enacted condominium legislation. Condominium development expanded rapidly thereafter, especially during the 1970s, when the interaction of inflation and the tax code drove down the real cost of home ownership. Co-op growth lagged that of condos during this period, but accelerated during the 1980s, supported by new loan programs in the secondary mortgage market. Nonetheless, by 1991, condos outnumbered co-ops about six to one, with co-ops concentrated in the Northeast. Together, condos and co-ops account for about 5% of the nation’s housing stock.

We argue later that several aspects of co-op ownership impose economic externalities on owner-occupants. By limiting these externalities, condominiums may offer advantages over cooperatives, and these advantages may cause condo demand to exceed co-op demand. In many jurisdictions, however, the regulations faced by developers seeking to convert an existing rental project were less onerous for co-op conversion than for condo conversion (HUD, 1980), and this supply cost advantage benefited the expansion of cooperatives.

Nowhere was this supply cost advantage of cooperatives more apparent than in New York. New York City and its surroundings have always had a disproportionate share of the nation’s cooperative housing and today account for about one-third of the U.S. total. The expansion from World War II to 1970 seems driven largely by landlords’ desires to avoid the city’s rent-control constraints (Sahling and Stein, 1980). Even though New York State legislation in 1964 authorized condominiums, the tax-driven boom to owner occupancy in the 1970s in New York City was channeled mostly into cooperatives. Part of the reason for New York’s continued emphasis on co-ops was the relative ease of conversion to cooperatives, combined with the absence of much developable residential land in the city. In addition, both consumers and lenders in New York were already familiar with the cooperative form, and the information costs and illiquidity encountered elsewhere were less a factor in New York.

Another factor favoring co-ops in New York was the state usury law that, until the early 1980s, permitted interest rates on co-op blanket loans to exceed those on condos by one percentage point. Finally, perhaps in New York more than elsewhere, there was demand for the exclusivity more readily available through cooperatives than condos. We expand on this point later.

2. Sources of Different Market Valuations for Co-ops and Condos

Co-ops and condos differ in several ways that would be expected to lead to different market valuations of physically and locationally comparable units. The first four of these characteristics tend to lower the value of co-ops relative to condos, although the fifth could add to the value of co-ops.

1. Risk sharing. A co-op involves more financial risk sharing among owners than does a condo building. In a condo project, if an owner defaults on his/her mortgage, the lender forecloses on, and disposes of, that unit, with no direct financial consequences for owners of other units, although there may be indirect “neighborhood” consequences of having empty units nearby. A co-op share owner is subject to the same neighborhood consequences of a default, but also bears a direct financial risk. If a co-op share owner fails to make his/her scheduled payments on the project’s blanket mortgage, the other shareholders must make up the shortfall, or risk throwing the loan, and the co-op corporation, into default.² This financial externality of co-ops gives condos, which minimize the common property elements, an advantage in “organizational efficiency” over co-ops (Hansman, 1991).

2. Financing. Financing costs differ for owners of condos and co-ops. Blanket loans have recourse only to the co-op corporation, whereas condo mortgages, at least in theory, have recourse back to the individual borrower. Also, because co-ops are less common than condos in most local markets, the substantial economies of scale in mortgage lending suggest that co-op financing would be more expensive—as measured by either interest rate or fees—than condo loans. In addition, if only one or two lenders serve co-ops in some markets, the resulting market power could lead to higher rates. Some mortgage lenders offer only blanket loans, others only share loans, and some lenders provide both. And the secondary market for co-op loans is not nearly as fully developed as that for condo mortgages, which in many respects are treated by the market as single-family loans.

Co-ops may have their own set of scale economies, however. One large blanket loan on a co-op is less expensive to originate and to service than the sum of n smaller condo loans. This could result in some cost savings for co-ops.

While direct comparisons of interest rates and nonrate terms are difficult, it seems unlikely that co-op financing is less expensive than condo mortgages, and co-op financing may well be more expensive. If this is so, the differences in financing should be capitalized into the market value of the units. In addition, blanket mortgages on co-op projects, typically made in a prior year, may carry interest rates either above or below market. In a period of stable or declining interest rates, above-market interest rates are probably more common on co-op blanket loans than on condominium purchase loans, because blanket loans occasionally involve prepayment “lockout” periods in which refinancing is contractually prohibited. These interest rates would be expected to be capitalized in buyers’ bid prices (Kelly, 1995).

3. Information, search, and liquidity. The greater externalities involved with co-ops imply that prospective buyers must incur greater search costs (time and money) learning about each co-op than for a comparable condo unit. If buyers’ bidding strategies are set to minimize the total costs—purchase price plus search costs—of securing a bundle of housing attributes, in equilibrium, buyers will bid less for co-ops than for otherwise comparable condos.

Similarly, on the sell side, the idiosyncratic nature of co-ops is such that co-op units can expect to have a longer marketing period than condos (Haurin, 1988). This longer marketing period involves costs for the seller, which should be capitalized into the initial bid price at the time of purchase.

4. Tax considerations. The federal tax treatment of owner-occupied co-ops and condos is similar. Condo owners can deduct both property taxes and interest on their mortgage. Co-op owners can deduct their pro rata share of property taxes on the project and interest on the blanket mortgage. Co-op owners can also typically deduct interest on their share loan.

But on the supply side, in conversions of rental properties, co-ops have a tax advantage over condos. If a rental project is converted to a co-op, any gain on the sale from the landlord to the co-op corporation is taxed at the capital gains rate, because it is treated as a transfer between corporations (as are sales of rental projects). In most instances, profits from subdividing a rental project into condominium units are considered regular income and taxed at a higher rate (Marcus, 1985). This unfavorable tax treatment can be avoided only at the cost of bringing in a middleman by selling the project to a real estate firm that then undertakes the conversion (HUD, 1980). The supply cost of co-ops brought to the market by conversion therefore is lower than that of condos, and all else equal, this cost advantage should result in greater prevalence and lower market value for co-ops relative to condos. The preferential regulatory treatment of co-op conversions in New York and some other jurisdictions has similar effects on the supply of co-ops relative to condos.

5. Demand restrictions. Co-op boards review every prospective purchaser and have the power to restrict entry for any reason that does not violate the applicant's civil rights. Condo associations do not have this right, and condos' bylaws and restrictive covenants, which are generally related to use of the property rather than individual owner characteristics, are less effective instruments for influencing ownership and residency. Co-ops' greater ability to restrict entry has an ambiguous effect on their relative market valuation, with even the direction of effect depending on how this power is exercised by the co-op board.³

While the risk sharing inherent in co-ops causes a reduction in demand (or at least an adverse selection problem) relative to condos, co-op boards also often deliberately restrict demand. Part of the justification is to protect the financial interest of the other co-op owners because of the financial interdependence mentioned above. Requirements can, however, be severe, such as requiring that the unit be bought with cash rather than with a share loan. This requirement can be a major constraint if the project has appreciated considerably since it was formed as a cooperative. More generally, the financial standards applied by co-op boards can be more restrictive than those typically applied by mortgage lenders. But applicants are rejected for nonfinancial reasons as well. Rock stars, former U.S. presidents, and other public figures are occasionally denied ownership because of the anticipated loss of peace and quiet. As one consumer guide to co-ops describes it: "The cooperative looks not only at the financial stability of a prospective member but also considers the likelihood that other members would want to have this person as a new neighbor and business partner."⁴

Not only do these entry restrictions reduce demand directly, but they also have indirect impacts since potential buyers may feel that their resale options are limited. The tradeoff, of course, is that other prospective buyers may be attracted to the project by these restrictions, if the restrictions are viewed as reducing the financial and life-style risk of owner-occupancy in the project. Following Cannaday (1994), consider a co-op in which each resident has the following utility function:

$$U_i = f(Z_i, Z_{-i}), \quad i = 1, \dots, n, \quad (1)$$

where U_i = utility of the i th resident. Z_i (scaled positively) is the i th resident's unit-specific ease of marketing one's shares to whomever he or she pleases. Z_{-i} (also scaled positively) is the ease of marketing shares for residents other than the i th resident, and:

$$\partial U_i / \partial Z_i \geq 0; \quad \partial U_i / \partial Z_{-i} < 0; \quad \text{and} \quad \partial^2 U_i / \partial Z_i^2 < 0. \quad (2)$$

$\partial U_i / \partial Z_i \geq 0$ implies that residents value freedom to sell to whomever they want, but the marginal utility of this freedom is diminishing and approaches zero. Complete freedom for each resident, ignoring the externality, allows him or her to set Z_i such that (at the limit) $\partial U_i / \partial Z_i = 0$, which would be the equilibrium solution if residents acted autonomously.

However, increased Z_i is equivalent to increased Z_{-i} for everyone else. Since one person's freedom may impinge on someone else's utility, $\partial U_i / \partial Z_{-i} < 0$. Hence, individual i 's freedom may decrease the utility of others, if it increases the difficulty in marketing co-ops for all other residents.

A governing board of a multiunit structure may wish to recognize the interdependence of the residents in maximizing the *sum* of the residents' utilities. Maximizing $F = \sum_{i=1}^n U_i$ with respect to Z_i yields the first-order condition:

$$\partial F / \partial Z_i = 0 \quad \text{for each } i = 1, \dots, n. \quad (3)$$

From (3), it can be shown that

$$\partial U_i / \partial Z_i = - \sum_{\substack{j=1 \\ j \neq i}}^n \partial U_j / \partial Z_j. \quad (4)$$

Since each term on the right-hand side of (4) must be negative, the negative of the sum must be positive. Hence, the optimizing governing board would set optimum Z_i to be less than the equilibrium Z_i in the absence of governance. Cannaday (1994) derives this result in discussing the tradeoff between a condo/co-op owner's desire to have a pet and that same owner's desire not to live in a building with a lot of pets.

The utility functions of co-op owners may well differ depending on their own moving plans. Owners with no plans to move presumably have little immediate concern over resale value and may therefore tend to be more restrictive in admission criteria. (They will place a small weight on Z_i and a big weight on Z_{-i} .) Owners planning to sell in the near future may be more concerned about broadening the market for their shares and less concerned about the possible externalities from accepting an undesirable applicant. The restrictiveness of entry for these mixed buildings will depend on who controls the co-op board.

Thus co-ops are able to restrict entry relative to condos, with the net impact on asset values depending on the restrictiveness applied by the co-op board, and on local market conditions. Co-ops in markets with exclusivity at a premium may be able to command higher purchase prices with restrictive entry policies than would be possible with open admission. New York might be an example. But if admissions exclusions are exercised inconsistently, some high bidders are prevented from buying, while residents do not gain the advantages which they attached to exclusivity. If co-op boards wanted to tune the exclusivity so as to

maximize value, the lowest possible value outcome would be that co-ops equal condos in value, because co-ops' boards have this adjustment tool and condo associations do not. But it is not necessarily the case that co-op boards attempt to maximize value.

To summarize, if the cost of producing the two types of housing is the same, then, given an upward-sloping, long-run supply curve, the consumer demand arguments listed under characteristics 1 through 3 above would lead to the expectation that prices would be less for co-ops than for condominiums with the same physical characteristics and location. The effect of demand restrictions (5) on valuation is ambiguous. On the supply side (4), the lighter regulatory and tax burden on co-op conversions means that the supply function for these units probably lies below that for condos, and this too should cause the price of co-ops to be less than the price of condos. All told, there are more reasons for expecting co-op values to be less than condos' than the opposite.

3. Data

Data for the study come from the national and New York metropolitan samples of 1987 American Housing Survey. The national sample consists of 1,095 owner-occupied units,

Table 1. National sample characteristics.

	Condo	Co-op	Pooled
Age of unit (years)	13	29	17
20+ units in structure (%)	25	47	29
Elevator building (%)	16	44	22
2-3 story building (%)	26	10	23
7+ story building (%)	8	37	13
Garage included with unit (%)	60	37	54
Rooms	4.9	4.7	4.9
Bathrooms	1.9	1.5	1.8
Balcony (%)	85	62	81
Central air-conditioning (%)	76	38	68
Central heat is warm air (%)	65	46	61
Fireplace (%)	33	15	29
Structural problems (%)	2	30	8
Gas cooking fuel (%)	24	64	32
Property tax rate (%)	1.3	2.0	1.5
New York metro (%)	5	41	12
Other Northeast (%)	13	12	13
Midwest (%)	20	14	18
South (%)	34	24	33
West (%)	28	9	23
Expensive, non-NY metro area (%) (Boston, Wash., D.C., Chicago, Los Angeles, San Francisco, Seattle, Honolulu)	27	9	23
Sample size	860	235	1095

Source: 1987 American Housing Survey

21% of which are in cooperative projects and the remainder are in condominium developments.⁵ As shown in Table 1, a disproportionate share of all cooperative units are found in the New York metropolitan area, for the reasons mentioned above. Because of this concentration, we replicated the national analysis on the separate New York MSA sample. We present the full results from the national survey and summarize the results from New York.

Two key variables in the analysis are the owner's estimate of the market value of the unit and the identification of a unit as either a co-op or condo. Recent research has concluded that owners' estimates of value are biased upward, but that the extent of bias is generally uncorrelated with characteristics of the respondent or the unit (Goodman and Ittner, 1992). Consequently, our estimates of the difference in values of co-ops and condos are not likely to be affected by this bias.⁶ Respondents are also relied upon for the designation of their unit as either a condo or a co-op. Analysis by the Census Bureau indicates that some units, especially cooperatives, are misidentified. Presumably, many of these misreportings are by renters (who occupy about one-third of all co-op/condo units). In our sample of owner occupants, response errors to this question should be moderate.

Co-ops tend to be older than condos, to have fewer rooms, and to be located in larger buildings (Table 1). They are less likely to be centrally air-conditioned, and they generally carry higher property tax rates than do condos.

4. Specification and Results

Our empirical approach is to consider hedonic price equations for both condominiums and co-ops, and to calculate the differences in bundle prices. Goodman (1978) established that the stratification of samples, as well as the specification of the underlying hedonic regressions, may have major impacts on the magnitudes of the effects measured.

Consider attribute bundle $A = \{a_1, a_2, \dots, a_s, \dots\}$. The hedonic price function for vector A is:

$$V = g(A) \tag{5}$$

with the hedonic price of characteristic a_s calculated as $\partial g / \partial a_s$. One application of the hedonic price method is to respecify the model as:

$$V = g(A, k), \tag{6}$$

in which k represents the type of ownership (condominium or co-op). In this formulation, the coefficient on k represents the differential effect of ownership type.

The formulation in (6) is problematic for two reasons. First, it assumes that the impact of ownership regime is unrelated to the characteristics of the unit itself. Hence, k represents a shift variable. Second, the formulation restricts the underlying equations, and hence hedonic price coefficients, to be constant across both ownership types.

An alternative specification releases these constraints, by setting:

$$\begin{aligned} V_{\text{condo}} &= A_{\text{condo}}\alpha, \text{ and:} \\ V_{\text{co-op}} &= A_{\text{co-op}}\beta. \end{aligned} \tag{7}$$

where α and β are vectors of attribute prices.

It is also appropriate to consider the functional form of the underlying hedonic. The Box–Cox transformation in some instances can provide a specification preferable to conventional linear and semi-log transformations.⁷ Here, for the condominium model (and similarly for the co-op model):

$$V(\lambda) = (V^\lambda - 1)/\lambda = \alpha_0 + \sum \alpha_S a_S + \epsilon.$$

Searching on increments of 0.1, the likelihood function for (6) and (7) maximize at a value of $\lambda = 0.4$. Using this λ , the pooled estimation, (6), has an adjusted R^2 of 0.38 (column 1 of Table 2). All of the structural characteristics that are statistically significant have the expected signs, as do the property tax rate and the set of locational identifiers. Co-ops are significantly discounted; the shift term indicates that an otherwise similar condo unit is valued 21% higher.

Not surprisingly, the data reject the specification of (6), that is, the null hypothesis that $\alpha = \beta$. Accordingly, the explanatory power of the model is improved when the parameters are not constrained to be the same for co-ops and condos. Comparing the disaggregated regressions (columns 2 and 3 of Table 2), most of the independent variables maintain the same signs in the two subsample estimations, although fewer of the variables are significant in the smaller co-op sample.

Condos have a greater market value than co-ops for a variety of attribute bundles. That is, F -tests indicate that

$$\begin{aligned} A_{\text{condo}}\alpha &> A_{\text{condo}}\beta, \\ A_{\text{co-op}}\alpha &> A_{\text{co-op}}\beta, \text{ and} \\ A_{\text{pooled}}\alpha &> A_{\text{pooled}}\beta, \end{aligned}$$

where A_{pooled} is a weighted average of A_{condo} and $A_{\text{co-op}}$. Results from the bundle comparisons are given in Table 3. This functional specification results in the estimate that condo valuations exceed those of co-ops by 8 to 30%, depending on the bundle being priced. On the pooled sample, perhaps the single most representative choice, condos are valued 12%, or \$9,100, higher than co-ops, on average.⁸

Finally, limited equity co-ops (LECs) might be expected to have lower market valuations than other co-ops because of the restrictions on resale prices in LECs. Whether a unit is in an LEC is not recorded in the American Housing Survey. But tests using proxies for LEC status indicated that the effect on value is statistically insignificant; that is, LECs and other co-ops appear to be valued similarly, conditional on their structural and locational characteristics.

Table 2. Hedonic regression coefficients.

	Pooled	Condo	Co-op
Intercept	154.57*	145.05*	137.31*
Age of unit (years)	-0.39	-0.42	0.28
Age squared	0.01*	0.01	0.00
20+ units in structure	1.35	-1.35	24.03
Elevator building	12.93*	11.49*	2.95
2-3 story building	3.67	2.99	13.99
7+ story building	4.16	10.31	-16.76
Garage parking	15.41*	22.39*	3.63
Rooms (#)	5.04*	6.09*	2.39
Bathrooms (#)	22.43*	19.71*	35.16*
Balcony	1.79	4.12	3.53
Central air-conditioning	4.85	1.18	8.91
Warm air heating	-5.55	0.47	-18.03
Fireplace	17.03*	12.92*	40.84*
Structural problems	9.18	11.79	3.35
Gas cooking fuel	-9.91*	-11.78*	4.55
Property tax rate (%)	-194.86*	-170.04*	-174.36*
New York metro	59.01*	58.26*	37.17
Other expensive metro	31.81*	32.80*	43.35*
Other Northeast	20.67*	35.97*	-33.99
Midwest	-32.94*	-31.44*	-43.45*
South	-21.03*	-13.85*	-43.61*
Co-op (1=yes; 0=no)	-17.56*	—	—
Adj. R-squared	.38	.42	.34
sample size	1095	860	235

Note: dependent variable: $(V^4 - 1)/4$, where V = owner's estimate of the market value of the housing unit; unless otherwise indicated, independent variables are dummies that take the value 1 if the unit possesses the characteristic.

* significant at 5% level.

Table 3. Predicted bundle prices.

	Bundle		
	Condo	Co-op	Pooled
Prices (\$)			
Condo	89,072	83,012	87,362
Co-op	82,599	63,784	78,262
Condo Premium			
\$	6,474	19,228	9,100
%	7.8	30.2	11.6

The national analysis was repeated on the New York MSA sample, deleting the inapplicable locational variables from the right-hand side and but adding a city-suburb dummy variable. On the pooled (6) model, the condo premium was 14% although the *t*-statistic for the co-op dummy was only 0.95 (most likely due to the relatively small sample size). Hence, we cannot reject the null hypothesis of no discounting in New York. The premium in the corresponding national model was 21%. It appears, then, that co-op discounting is less in New York than elsewhere, a finding which would follow from some of the institutional and market advantages that New York co-ops enjoy.

5. Summary and Conclusions

Cooperative and condominium housing differ in several ways that might be expected to influence their pricing. Most but not all of these differences argue or a higher valuation for condominiums. Hedonic equations estimated on a national sample indicate that the price differential on the average condo/co-op unit in 1987 was 12%.⁹ Condos maintain a price premium under a variety of specifications, although its magnitude depends on the bundle of attributes being priced.

Looking forward, it is difficult to project a resurgence for cooperative housing. Its market disadvantages relative to condominium housing appear to exceed its advantages. The relatively low valuations of co-ops, and their declining market share, despite some supply cost advantages, suggest that demand for this form of housing falls considerably short of condo demand. Absent a significant change in consumer preferences or the regulatory/tax treatment of co-ops or condos, cooperative housing seems likely to diminish further in importance.

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Notes

1. The third form of owner-occupancy in multiunit structures occurs when the owners of the building occupy one of its apartments.
2. Co-op owners typically will differ in their balances on both their blanket loans and share loans. Thus, the default option will not be in the money simultaneously for all owners. Furthermore, co-op owners are vulnerable to "nonrational" defaults by their fellow owners.

3. Limited equity co-ops also restrict demand. Because price caps are put on co-op shares in these projects, depending on market conditions, prices may be held below market-clearing levels. In these instances, some form of nonprice rationing of the units likely occurs.
4. Washington Mortgage Group, Inc., undated.
5. For confidentiality, the variable distinguishing condos from co-ops is suppressed on the public-use tape of basic records. We are grateful to the Census Bureau for providing controlled access to this variable.
6. The question in the AHS is: "How much do you think the apartment would sell for on today's market?"
7. This transformation nests the linear ($\lambda = 1$) and semi-log ($\lambda = 0$) regressions into a form that is easily tested. Although in principle both the left- and right-hand side could be transformed with a different parameter λ_s for each a_s , in practice, it is extraordinarily difficult to undertake such estimation. Hence, almost all applications transform the left-hand side only. Also, as noted by Thibodeau (1992, chapter 5), the estimator of house price obtained by transforming the dependent variable may be a biased estimator of average housing price. This bias is unimportant, however, since we are estimating the price difference, and the bias affects condos and co-ops similarly.
8. The t -statistic of the difference, calculated on untransformed values of the estimated equation (with $\lambda = 0.4$) is 2.40.
9. Our finding is broadly consistent with Kelly (1995), who found an 8% co-op discount, in a comparison of matched co-op and condo projects in Washington, D.C.

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