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Economics 471: Applied Econometrics
Problem Set 3

The data for this problem consists of prices and characteristics of 229 houses sold in Champaign-Urbana in the early 1990s. The data is available on the class website as were the data for the previous problem sets. You are to make a "forecasting" model of housing prices here using this sample of houses to estimate the parameters of the model. This is precisely the sort of model that city tax assessors would make to assign assessed valuations to houses in their jurisdiction. Floor is square feet of floor space, lot is lotsize in square feet, bath is number of bathrooms, golf is proximity to a golf course, pool indicates if the house has a swimming pool, and lake indicates that the house is near a lake. The last three covariates take either the value 1 or 0.

1. Estimate two models for price: one in levels, and the other in logarithms. Use all of the available covariates. Note that the indicator (dummy) variables should not be logged. Interpret the coefficients briefly in both models and suggest which model seems more reasonable.

2. In both models test the hypothesis that lot size isn't a significant determinate of house price.

3. In both models test the joint hypothesis that none of the indicator variables influence sales price.

4. Using both the logged and unlogged models, make a partial residual plot for price and floorspace "controlling" for all the other variables in the model. Does it look plausibly linear in either case?

5. Comparing the logged and unlogged version of the model make a point forecast of the prices of the following two houses, assuming all other, indicator, variables are equal to zero for both houses.

House	A	B
Floorspace	4000	2250
Lotsize	20000	1200
baths	3.5	2.0

6. Compare the .95 confidence intervals for these two predictions.

7. Suppose that it were more costly to make an over prediction than an underprediction, perhaps because you are the tax assessor and could have to defend the prediction in court, how would you modify your prediction?

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