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Uncertainty of Land Values near Urban Centers

Rapid urban growth has an effect on agricultural land values and prices. This is especially true in the rural-urban fringe (lands adjacent to large urban centers), since in the foreseeable future, land in the fringe will be converted from agricultural to urban use. The urban land requirements are not easily projected. Both the timing and direction of the urban growth are uncertain. This uncertainty makes it difficult to value such land for assessment or taxation as well as for sale—or to detect recognizable patterns of land price behavior.

over of agricultural land would not be as great. This does not mean that a lower total gross income is projected 20 to 30 years from now, even when expressed in constant prices. Increases in gross income are expected from shifts to commodities that use more capital. These would be due to changes in demand and to increases in technical know-how and productivity.

In some respects, Sacramento's agriculture is fortunate. Most of the land in the direct path of urban expansion is hardpan soil from which net returns are relatively low; and with sewer systems, hardpan soil seems just as suitable for urban use as Class I soils. The bulk of the best soil is located in the Delta, which we assumed unfit for urban use because of floods and peat soils. It is expected that farmers in the Delta, and other areas unsuitable for urban use, will increase their gross income, and possibly their profits, through more intensive use of their land. These areas unsuitable for urban use now produce about two thirds of the gross farm income.

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THEORETICALLY, LAND VALUES in rural-urban fringe areas are based on three factors: (1) the future net returns from agriculture, (2) the future net returns when land is in urban use, and (3) the year in which the land will be converted from agricultural to urban use. Valuation of land expected to remain solely in either agricultural or urban use is a difficult problem; but appraisers have developed procedures that are widely accepted. When appraisals are made on many parcels of land, as for tax purposes, there usually is no major problem in obtaining uniform values. But in the rural-urban fringe, uncertainty plays a major role. Because of the uncertainty of the rate and direction of urban expansion, well-established procedures for valuating fringe land and have not been developed and cannot be applied with any high degree of uniformity. In addition, uncertainty makes it almost impossible to determine, or even approximate, the exact year land will be converted.

The year of conversion is a crucial element in determining value. Two parcels of land being used for the same agricultural purpose, and both having the same expected urban use, would have different values if one parcel is expected to convert five years from now and the other in ten years. Because of uncertainty, individuals who make estimates of the year of conversion for a particular parcel of land come up with different answers. Thus, a wide variation in prices and appraised values is observed in the rural-urban fringe.

An important question is, "Do prices reflect values?" That is, can an appraiser use land prices as values or as indicators of values? Certainly, any price that an individual buyer is willing to pay represents the value to him; but this does not mean that it is a market value. A buyer may be willing to pay $100 a share for General Motors stock, but he would be foolish to pay more than the market value, which is closer to $80.

In the stock market, prices are market values because the product is homogeneous, there are many buyers and sellers, one participant cannot influence the price with his action, and the frequency of sales is high. These conditions do not hold in the land market. No two parcels of land are alike. Even the differences in land location distinguish the product, for location is part of the product. There are not many buyers and sellers, and the bargaining of only two participants can set the price. The frequency of sales for comparable property is low, with many of the buyers and sellers being once-in-a-lifetime participants with lack of knowledge. Under these conditions, extreme prices are not ruled out. Prices can be based on unrealistic expectations of future income and other events. There is no averaging or consensus of expectations as in the stock market.

Land market conditions cause prices to vary widely from sale to sale without any recognizable pattern, making explanations of the variations difficult. This is especially true in the rural-urban fringe, as is borne out in a study of land prices in Sacramento County. In the fringe, the unpredictable effects of the market conditions are compounded by the uncertainty of the rate and direction of urban growth.

Sacramento County prices

The value of land for urban purposes is greater than that for agricultural purposes, otherwise agricultural land would not be converted to urban use. Urban uses are more intensive than agricultural uses; the improvements per acre have a higher value in urban use. Often the value of land is only a small fraction of the total value of the property when fully improved. Thus, land is worth more for urban purposes, and values in the fringe, where land will be converted in the foreseeable future, would be higher than

those indicated by agricultural use alone. This means that in order to explain the variation in land prices in the fringe, it is necessary to look for measures of the urban rather than the agricultural influence.

In a sample of 223 parcels in the rural-urban fringe of Sacramento County, several "urban" variables were found that explained part of the variation in prices. One of these was the distance from the center of the city of Sacramento. The closer to the city, the higher the price. For example, holding other price-explaining influences constant, we found that land 20 miles from the city sold, on the average, about $1,200 per acre less than land five miles from the city.

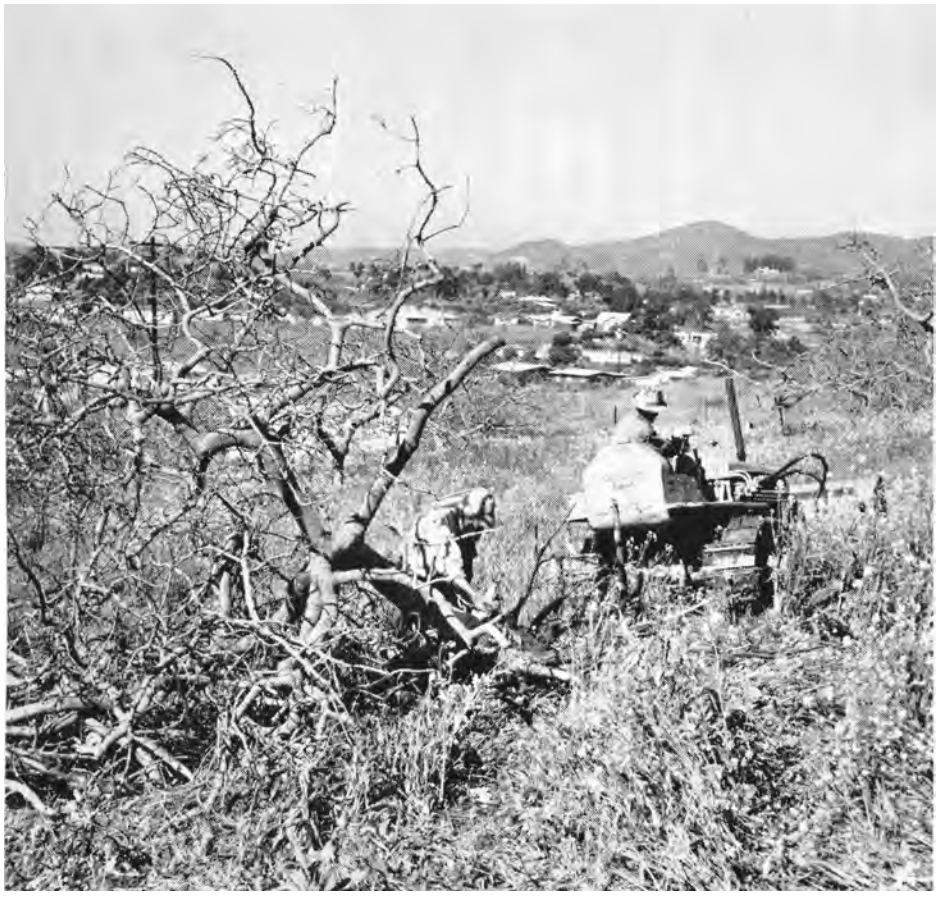
Another important variable was distance from a major highway leading into the city. Holding other price-explanatory variables constant, land located adjacent to a highway sold for about $775 per acre more than land five miles from a highway. Whether or not the parcel was a corner lot was important. On the average, with everything else held constant, corner lots sold for about $800 per acre more than other lots.

Time was an important factor. Prices tend to follow waves of expansion and contraction, although with rising per capita incomes, the long-term trend is upward. The data in Sacramento County were collected for a period during which there was a speculative boom. With other variables held constant, it was found that the average rate of increase per month was about $14 per acre. Data for other periods of time might show a decrease with the passage of time.

An important finding in the Sacramento study was some statistical evidence that credit conditions of the sale have an influence on the price. In other words, there can be a difference between a 100% cash price and a selling price which includes some extension of credit, usually in the form of a mortgage note. If a seller of land cannot receive his full price in cash from the buyer, he can accept a down payment and then sell the mortgage note. But since the note sells at a discount, the seller must increase the selling price of the land to the point where the down payment plus the receipts from the sale of the mortgage note is equal to the price he would have received from a cash buyer. The data indicated that with everything else held constant, the price was about $250 per acre more with terms of sale having a down payment less than 30% than with terms having a down payment more than 30%. The more credit extended, the higher the price.

The variables mentioned here and others that were not as important, together explained only about 50% of the variation in prices. This in itself is an important result. Some of the unexplained variation may be caused by qualitative influences for which it is difficult to obtain statistical measures. But it is also suspected that some of the variations just cannot be explained at all. This is the effect of uncertainty of the rate and direction of the urban growth. Price agreements are made by buyers and sellers who base decisions on unreasonable expectations tempered with uncertainty.

Clearing avocado trees for future building sites in a rural-urban fringe area of southern California.



Land assessments

It seems evident that prices, particularly individual prices, are unreliable indicators of market land values in the rural-urban fringe. Variations are extremely high and the sales frequency, for comparable locations, is low. Assessors concerned with the problem of establishing uniform market values have a difficult job, especially when they are forced, legally, to use unreliable indicators (prices) for values.

The same sample data and the same model used to explain prices also were used to explain the variation in assessment per acre. Only about 20% of the total variation could be explained by the same variables that explained 50% in the price variation. However, by working with another set of data, selected so that they could be grouped by subareas within the county, it was found that assessments per acre were highest in subareas close to the city. The data also showed that the variation or spread in assessments per acre was highest close to the city, where land speculation was active. For example, the average assessment per acre in the subarea of Elk Grove was almost four times greater than the subarea of Galt. The variability of the assessments was 81% in Elk Grove, which is in the fringe, and 49% in Galt, which would be considered out of the fringe.

Similar results were found with data on taxes per acre. They were highest close to the city, in the rural-urban fringe, where tax variation from parcel to parcel was also the highest. Thus, the uncertainty created by the timing and direction of urban growth had its effects on assessments and taxation of land as well as on land prices.