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Monthly condensed analyses of crucial real estate and economic issues offered by the UCLA Anderson Forecast and UCLA Ziman Center for Real Estate. Here, Ziman and Anderson economist Stephen D. Oliner presents new data on the dramatic rise and fall of land prices.

The Great Land Price Swing

Lenders and Investors Beware: Land Is a Very Risky Asset

By Stephen D. Oliner, Senior Fellow, UCLA Ziman Center for Real Estate,
and Senior Economist, UCLA Anderson Forecast

Land is essential for all types of economic activity. Every business — whether it's General Motors or the corner grocery store — has a footprint. The same is true for the homes and apartments in which people live.

Land also constitutes a major part of wealth. At the height of the real estate boom in 2006, land in the United States (excluding farmland and land held by the government) is estimated to have been worth more than \$17 trillion. This figure represents about 40 percent of the value of commercial real estate and housing in the United States.¹ Of course, much of that wealth dissolved over the next few years as real estate markets crashed. The new research presented in this Letter documents the huge swing in land value over the recent cycle, showing that land is indeed a high-risk investment.

This research, which I conducted with two coauthors, presents the first indexes of land prices for a broad swath of U.S. cities based on sales transactions.² Using information provided by the CoStar Group, Inc., we put together a dataset with 180,000 sales of commercial or residential land parcels in 23 metropolitan areas from the mid- or late 1990s through mid-2011. The 23 metropolitan areas encompass the major population centers in the United States and some smaller cities. Four metro areas in California — Los Angeles, San Francisco, San Diego, and Sacramento — are included in the dataset.

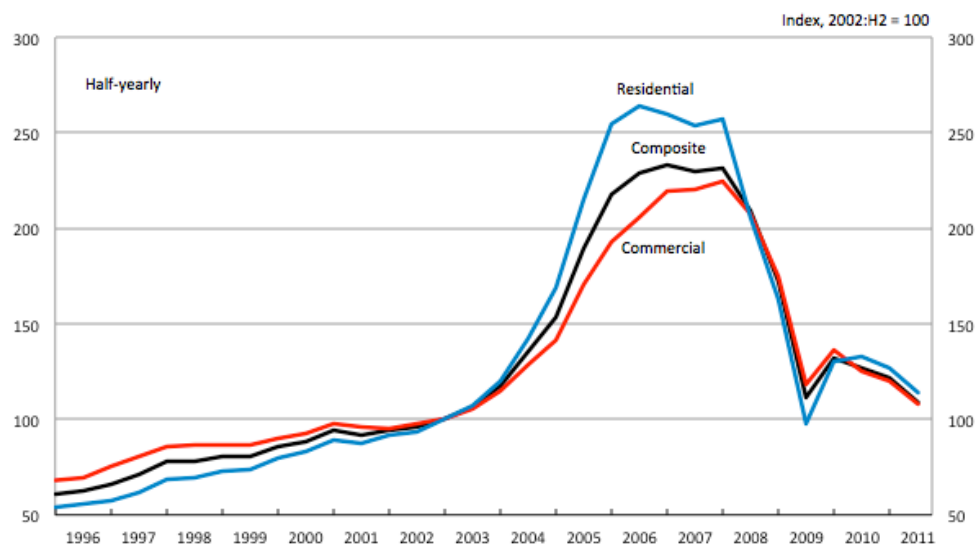
We calculate the land price indexes by estimating a “hedonic” regression. This is a standard way to control for the factors that affect real estate prices and thereby insure that the measured price changes from one period to the next are not distorted by differences in the characteristics of properties sold across the two periods. Our regression controls for the effects of both location and property characteristics on the observed land prices.

1 These estimates are based on data in the Flow of Funds Accounts published by the Federal Reserve Board.

2 The research paper can be [downloaded here](#) and will be published in the *Journal of Urban Economics*.

Figure 1 presents the land price indexes we obtain by combining the data for all 23 metro areas. The black line shows the index for a composite of commercial and residential land, while the other two lines show the commercial and residential indexes separately. As indicated by all three lines, land prices trended up at a moderate pace from the mid-1990s through 2002 and then accelerated sharply. Over the next four years, the composite index jumped nearly 135 percent. These gains, however, were short-lived, as land prices tumbled in 2008 and the first half of 2009, when the economy was mired in a severe recession. As of mid-2011, the composite index had fallen more than 50 percent from its peak. There were especially large swings for the residential index, likely because the excesses that led to the financial crisis were centered in the housing market.

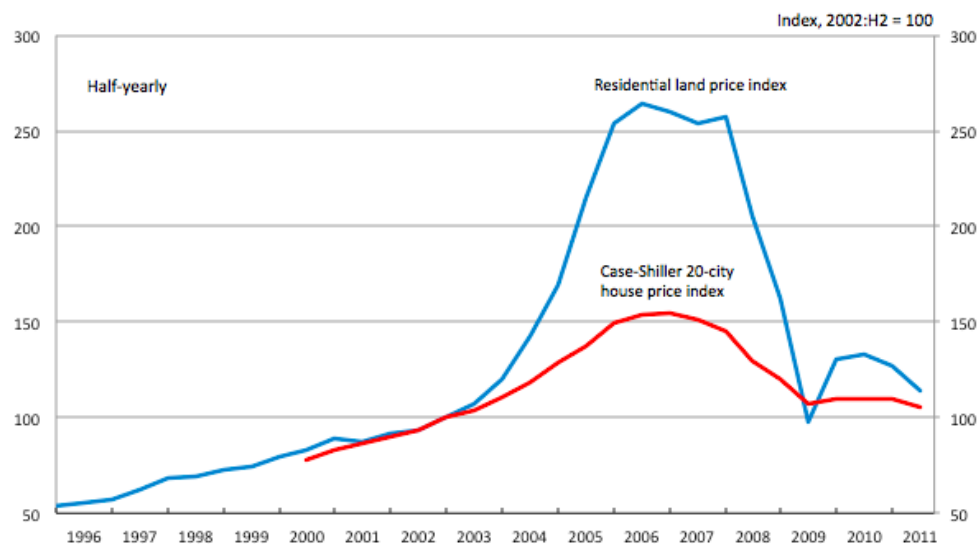
Figure 1—Aggregate Land Price Indexes



The metro-area analysis shows that the swing in land prices generally was larger on the East Coast and in the far West than elsewhere in the country. For example, from the second half of 2002 to the peak, the composite land price index rose more than 160 percent in Los Angeles and San Francisco and nearly 150 percent in San Diego and Sacramento, compared with 90 percent in Atlanta and less than 60 percent in Dallas. These regional differences mirror what we've observed in house prices over the past decade.

Land Prices Rise and Fall Far More Than House Prices

Figure 2—Residential Real Estate Prices



The ups and downs in land prices make the movements in house prices seem tame. This can be seen in **Figure 2**, which plots the residential land price index from the previous figure against the Case-Shiller 20-city house price index. Residential land prices rose roughly three times as much as house prices during the boom period and then gave back the entire gain. In individual metro areas, land prices rose and then fell much more than house prices in every case.

To see why this would be the norm, note that a house is a bundled good that consists of the structure in which people live and the land on which the structure sits. The change in house prices over a given period reflects both the change in the price of the land and the change in the price of the housing structure. The extreme volatility of land prices means that structures are the relatively stable component of the housing bundle. The difference in volatility between land and structures prices is rooted in basic economics: the supply of land is much less elastic than the supply of structures. Buildable land is limited by geographic constraints and land-use regulation, while the quantity of new structures can be increased without much added cost per unit by hiring more labor and buying more materials. As a result, changes in the demand for housing over real estate cycles push against a supply of land that is sticky in the short run, causing the price of land to move more than the price of structures.

Real estate investors and mortgage lenders need to recognize the inherent volatility of land prices. Lenders in all metro areas should be conservative in lending against land value, especially after a large run-up in land prices. In addition, metro areas in which land represents a large share of property value — which includes many areas in California — are especially susceptible to booms and busts in real estate markets. Consequently, prudent lending practices dictate that loan-to-value ratios for home mortgages and commercial real estate loans should be kept relatively low in areas where land is a large share of property value.