

Value is then calculated as follows:

Table 1

Number of rooms:	200	
Net income before debt service:	\$950,000	
Financial structure		
Mortgage:	75% of value	
	11% interest	
	25-year term (11.7%)	
	constant	
Equity:	25% of value	
	18% equity return	
Weighted cost of capital		
Mortgage:	$.75 \times .117$	= .088
Equity:	$.25 \times .180$	= .045
Weighted cost of capital:		<u>.133</u>
Value:	$\frac{\$950,000}{.133}$	= \$7,145,000

### Today

In two years, assumes Rushmore, net operating income rose 10 percent per year to keep pace with inflation. Thus, income reached \$1.15 million. At the same time, however, interest rates rose to 15 percent. Table 2 shows the effect on the motel's value.

Table 2

Net income before debt service:	\$1,150,000	
Financial structure		
Mortgage:	75% of value	
	15% interest	
	25-year term (15.4%)	
	constant	
Equity:	25% of value	
	18% equity return	
Weighted cost of capital		
Mortgage:	$.75 \times .154$	= .116
Equity:	$.25 \times .180$	= .045
Weighted cost of capital:		<u>.161</u>
Value:	$\frac{\$1,150,000}{.161}$	= \$7,145,000

At first blush, it appears that the motel has not lost any value. However, in constant dollar terms, the property actually lost 20 percent of its value despite the success of the owner in raising profits 10 percent each year. (Note that if the equity interest would now require more than an 18 percent return in light of continued inflation, the value of the motel would actually have dropped in nominal dollars.)

### Tomorrow

Suppose that in the next year or so, interest rates dropped back so that a mortgage on this property can be obtained for the same 11 percent as two years ago. Assume also that the motel's income declines but the owner is successful in retaining half the gain achieved

## How Interest Rates Affect Real Estate Values

Interest rates for all types of capital have remained high despite recent gains in fighting inflation. As a result, the "real" return (the nominal interest rate minus the inflation rate) is running around 6 percent, far above the 2 to 3 percent return historically demanded by lenders. It is obvious that lenders still fear a resurgence of inflation and no one knows at what point (assuming inflation continues to decline) they will accept lower nominal interest rates.

If interest rates do drop suddenly, what will it mean for real estate values? It will mean a great deal since the most common method of valuing commercial real estate is the income approach, in which net operating income is divided by a percentage rate representing the weighted cost of invested capital.

An example prepared by Stephen Rushmore, MAI, president of Hospitality Valuation Services, Inc., Mineola, N.Y., illustrates very well what happens when interest rates change.

### Two Years Ago

Mr. Rushmore assumes that two years ago, a motel generating a net operating income of \$950,000 could have been financed with an 11 percent, 25-year mortgage in an amount equal to 75 percent of market value. He further assumes that the equity funds would require a return of 18 percent.

in the past two years, so that net income stabilizes at \$1.05 million. Consider what happens then to the motel's value.

**Table 3**

Net income before debt service = \$1,050,000

Financial structure: Same as Table 1

Weighted cost of capital: Same as Table 1

Value:  $\frac{\$1,050,000}{.133} = \$7,895,000$

The value of the property has now risen in nominal dollars by \$750,000. The property has likely gained in constant dollar value as well but this depends on the assumed rate of inflation.

**Observation:** As the examples above indicate, interest rate changes have a very substantial effect on property values. Normally, interest rate changes do not occur in a vacuum but are accompanied by changes in the economy, the effects of which also must be considered on the particular property. However, if we are very fortunate to avoid a severe economic downturn while interest rates fall significantly, many types of real estate may experience a sudden jump in value as the weighted cost of capital declines while operating income remains stable.