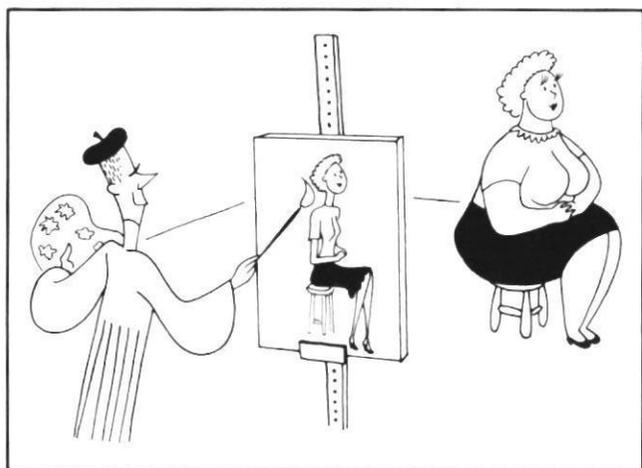


# SELECTING THE OPTIMAL DEPRECIATION METHOD FOR REAL ESTATE INVESTORS

by Jeffrey D. Fisher and Jerrold J. Stern

The Economic Recovery Tax Act of 1981 (ERTA)<sup>1</sup> is causing a major overhaul of many tax-planning techniques which were in use prior to that legislation. One of the prime areas in need of new decision rules is the determination of the optimal depreciation method for real estate investments. While the new Accelerated Cost Recovery System (ACRS)<sup>2</sup> virtually eliminates potential disputes between taxpayers and the Internal Revenue Service regarding depreciable lives and the use of component depreciation, the choice between accelerated and straight line depreciation for real estate must be viewed in a new light.



In selecting the optimal depreciation method for real estate, four key variables must be included in the decision

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process: 1) the investor's estimated holding period; 2) the investor's marginal tax rate; 3) the applicability of the regular minimum tax; and 4) the discount rate. This article includes these variables in a model which is used to develop decision charts that contain comprehensive depreciation method decision rules for investors in recognition of ERTA. Investments in both new and existing conventional residential rental property, as well as commercial real estate, are included in the charts. Before discussing the model and the charts, though, a summary of the applicability of ACRS to real estate is provided.

## Depreciation Under ACRS

Real estate investments acquired after 1980 which are depreciated on the basis of years rather than the units of production method<sup>3</sup> are considered "recovery property." For such property, depreciation deductions must be computed in accordance with ACRS. Section 168(c)(2)(D) includes virtually all real estate investment property (Section 1250 property) in the "15 year real property" class. As 15 year property, real estate investments can now be depreciated using a 15 year "life" (recovery period), regardless of whether the property is new or used and irrespective of whether it is residential, rental or commercial.<sup>4</sup> At the option of the investor, a 35 or 45 year recovery period may be used in place of the 15 year period.

With regard to depreciation methods, Section 168(b) allows real estate owners to use either Treasury Department tables<sup>5</sup> which approximate 175 percent declining balance (with a switch to straight line), or straight line, if the 15 year recovery period is chosen. Straight line must be employed by investors using 35 and 45 year recovery periods. No matter which recovery period "life" is selected, it is considered a composite life. Section 168(f)(1) precludes the use of component depreciation for Section 1250 property.

As under prior law, excess depreciation from real estate is a tax preference item for the regular minimum tax.<sup>6</sup>

Section 57(a)(12) provides that the excess depreciation tax preference for 15 year real property is the excess of the actual deduction over the deduction computed by the straight line method using a 15 year recovery period. Thus, only investors employing the 175 percent declining balance method incur the excess depreciation preference.

Aside from the regular minimum tax, depreciation recapture may reduce or eliminate the benefits of accelerated depreciation. For residential rental property, Section 1250 recapture applies just as it has in the past. The difference between actual accumulated depreciation at the time of disposition and accumulated depreciation based on the straight line method (referred to as "additional depreciation" or "net excess depreciation") is recaptured to the extent of gain. Depreciation recapture for commercial property, however, is much more severe under the new rules. Section 1245(a)(5) requires 15 year commercial property to be treated as Section 1245 property for recapture purposes if accelerated depreciation were chosen. Thus, *all* depreciation is subject to recapture at disposition to the extent of gain. For both residential and commercial property, there is no recapture if the straight line method is employed.

### Conceptual Cost-Benefit Analysis Of Accelerated Depreciation

With the new provisions for depreciating real estate, the optimal choice between accelerated and straight line is certainly not obvious. Prior to formulating decision rules, however, Figure 1 is used to help conceptualize the tradeoffs between the two depreciation methods. Following a discussion of the figure, a model is developed and used to generate decision charts for depreciation method choice.

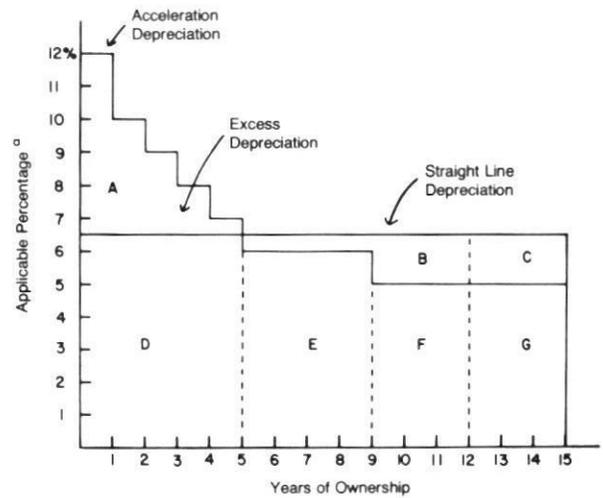
Figure 1 indicates the basic relationship between accelerated and straight line depreciation deductions over a 15 year period. For the sake of simplicity, the figure does not attempt to quantify the actual dollar amounts of annual depreciation deductions.

It should be noted that accelerated depreciation exceeds straight line through Year 5, thereby sheltering more income than straight line. The additional sheltered income thus avoids being taxed in the year in which it is earned. For investors subject to the regular minimum tax, the excess of accelerated depreciation over straight line (Area A in Figure 1) results in increased regular minimum tax liability.

After Year 5, accelerated depreciation is less than straight line. Thus, less income is sheltered (relative to straight line depreciation) after Year 5. The leveling off of accelerated depreciation after Year 9 represents the switch to straight line depreciation for the remaining depreciable life. After the straight line changeover, the remaining depreciation deductions are still less than what straight line would have provided.

For residential real estate investors using accelerated depreciation who dispose of their investments at a gain prior

FIGURE 1  
ACCELERATED VS. STRAIGHT LINE DEPRECIATION UNDER ACRS



<sup>a</sup> The annual depreciation deduction is computed by multiplying the applicable percentage by the unadjusted basis of the recovery property. (Section 168(b)(1)(B)(2))

to the end of Year 15, part or all of the gain is recaptured as ordinary income. The recapture potential can be thought of as "net excess depreciation," that is, the total of all excess depreciation through Year 5 minus the depreciation foregone after Year 5 from not having chosen straight line in the beginning. In terms of Figure 1, the recapture potential at the end of a 12 year holding period is Area A minus Area B. Not by mere coincidence, Area C in the figure is equal to the difference between Areas A and B. This should be expected since Area A must equal the sum of Areas B plus C. In other words, the total amount of depreciation taken over the recovery period is the same, regardless of the method chosen.

For commercial real estate investors who use accelerated depreciation, *all* depreciation taken represents recapture potential. Thus, for a sale at the end of Year 12, the recapture potential is equal to the sum of Areas A, B, D, E and F.

The chief difference between the depreciation of conventional residential and commercial real estate is the size of the recapture potential. However, regardless of the amount of recapture, the tax increase caused by it does not occur until the year of disposition (that is, Year 12), thereby decreasing its impact in terms of present value.

In contrast with the issue of recapture, the regular minimum tax potential is the same for both conventional residential and commercial investors. Moreover, when present, the regular minimum tax liability occurs on an annual basis and is largest in the earliest years, thereby increasing its impact in terms of present value.

### Cost-Benefit Of Present Value Model

Given the basic cost-benefit issues discussed above, a more formal representation of the tradeoffs between accelerated depreciation and straight line is now presented. The equation represents the present value of the incremental tax benefit of accelerated depreciation over straight line. An investor at a given marginal tax rate would choose accelerated depreciation if the present value expressed by the equation is positive for a given discount rate, anticipated holding period, and set of depreciation deductions. Otherwise, straight line depreciation would be chosen.

Assuming a sale at the end of the holding period at a price at least as large as the purchase price, the present value of the incremental benefit of accelerated over straight line depreciation can be expressed as follows:

$$PV = \sum_{i=1}^n \frac{(DA_i - DS_i)t_o}{(1+k)^i} - \frac{\sum_{i=1}^n (DA_i - DS_i)t_o}{(1+k)^n} - \frac{\sum_{i=1}^n DS_i}{(1+k)^n} (t_o - t_g) - \sum_{i=1}^{t'} \frac{(DA_i - DS_i)}{(1+k)^i} \quad (.15)$$

Where:

- $DA_i$  = accelerated depreciation in year  $i$
- $DS_i$  = straight line depreciation in year  $i$
- $t_o$  = marginal ordinary income tax rate
- $t_g$  = marginal capital gains tax rate (40% of  $t_o$ )<sup>7</sup>
- $k$  = after-tax discount rate
- $n$  = holding period ( $n$  corresponds with Year 12 in Figure 1)
- $t'$  = year after which annual excess depreciation would be less than zero ( $t'$  corresponds with Year 5 in Figure 1)

The first term on the right-hand side of the equation includes the present value of the tax benefit from the annual incremental depreciation deductions through Year  $t'$  (that is, Year 5 in Figure 1) from using accelerated depreciation. However, since straight line is greater than accelerated *after* Year  $t'$ , the first term also includes the present value of the incremental straight line deduction tax benefits foregone after Year  $t'$ .

The second term reflects the present value of the tax on the Section 1250 recapture of net excess depreciation (additional depreciation) at disposition. The third term represents the present value of the tax on the balance of the depreciation (the straight line depreciation) which applies only for commercial real estate investors using accelerated depreciation. By utilizing  $(t_o - t_g)$ , the third term reflects the incremental tax effect of the straight line portion of the depreciation being taxed at ordinary in-

come tax rates rather than as a capital gain. The final term captures the present value of the cost of the regular minimum tax and applies only for investors who are subject to this tax.<sup>8</sup>

### Depreciation Method Decision Charts

Using the equation, a computer simulation program was developed to generate a series of "indifference curves"<sup>9</sup> which are included in the decision charts in Figures 2-4. Each chart comprises a continuous range of discount rates and holding periods. By comparing various discount rates with potential holding periods, an investor can readily ascertain which depreciation method is best given that investor's marginal tax rate.

FIGURE 2  
DEPRECIATION METHOD DECISION CHART FOR  
COMMERCIAL PROPERTY — WITHOUT REGULAR MINIMUM TAX

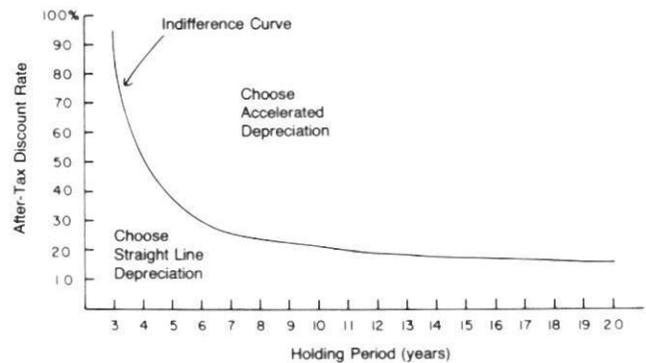
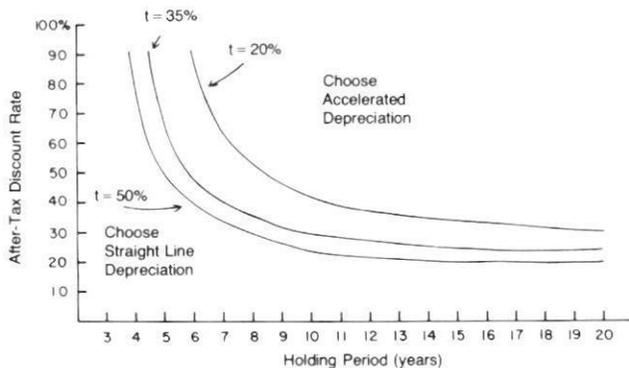


Figure 2 is the decision chart for commercial property assuming the investor is not subject to the regular minimum tax. For illustrative purposes, assume an investor is anticipating a 10 year holding period. If this investor's after-tax discount rate were 20 percent, he or she would be indifferent between choosing accelerated over straight line depreciation. In other words, the present value of the incremental benefits of accelerated depreciation over straight line would be zero. If the anticipated holding period and/or the discount rate were increased, the accelerated method would be the optimal choice. Conversely, if the holding period and/or discount rate were reduced, the straight line method would provide a larger incremental tax benefit.

The single indifference curve in the Figure 2 decision chart applies for all marginal ordinary income tax rates for commercial property investors not subject to the regular minimum tax. The lack of importance of the marginal tax rate for these investors is explained by noting that each of the terms in the equation includes the marginal regular income tax rate ( $t_o$ ), except for the regular minimum tax term (the last term). When the present value equals zero and both sides of the equation are divided by  $t_o$  (ignoring the last term),  $t_o$  simply drops out of the equation for those taxpayers not affected by the regular minimum tax.<sup>10</sup>

**FIGURE 3**  
**DEPRECIATION METHOD DECISION CHART FOR**  
**COMMERCIAL PROPERTY — WITH REGULAR MINIMUM TAX**  
*(t is the marginal tax bracket for the indifference curve)*



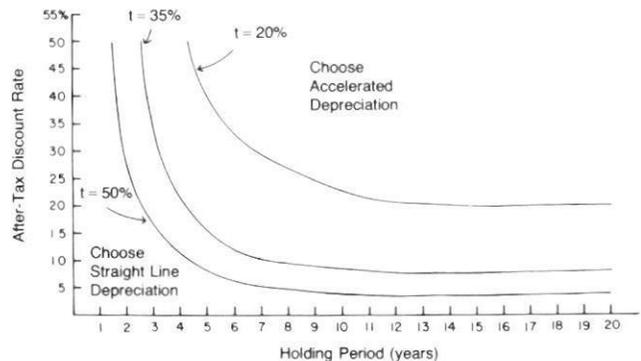
Figures 3 and 4 function in the same manner as Figure 2. The area to the right of any given indifference curve represents combinations of discount rates and holding periods for which accelerated depreciation should be used; the area to the left represents combinations of discount rates and holding periods for which straight line depreciation should be used. This result occurs because of the relationship between the present values of the incremental benefits and costs of accelerated depreciation. At either higher discount rates or longer holding periods, the present value of the incremental benefit of deferring income through accelerated depreciation increases relative to the costs of Section 1245 recapture and, if applicable, the regular minimum tax.

Figure 3 shows the indifference curves for commercial property assuming the regular minimum tax applies for all investors. The shifting of the curves to the right (compared with Figure 2), as a result of the regular minimum tax, should be noted. Thus, it takes longer holding periods for a given discount rate (or higher discount rates for a given holding period) to justify using accelerated depreciation. The investor's tax rate also now affects the indifference curves because the regular minimum tax is assumed to be 15 percent regardless of the ordinary income tax rate.

There is no decision chart for conventional residential rental housing investors who are not subject to the regular minimum tax. Under the assumptions made in this marginal tax rate analysis, residential investors will *always* gain by using accelerated depreciation. For such investors, the only "cost" is the recapture of net excess depreciation upon sale. In all cases, using marginal tax rates, the present value of that cost is less than the present value of the tax savings from using accelerated depreciation.

Figure 4 includes the decision chart for conventional residential rental property, assuming investors are affected by the regular minimum tax. Since accelerated depreciation for residential property results in Section 1250 recapture (for net excess depreciation) rather than Section 1245 recapture (for all depreciation), the accelerated method becomes desirable at much lower discount rates and shorter holding periods as compared with

**FIGURE 4**  
**DEPRECIATION METHOD DECISION CHART FOR**  
**CONVENTIONAL RESIDENTIAL RENTAL PROPERTY —**  
**WITH REGULAR MINIMUM TAX**  
*(t is the marginal tax bracket for the indifference curve)*



commercial property. For example, for an investor in the 50 percent tax bracket, at a 10 percent discount rate, accelerated depreciation would be chosen for anticipated holding periods of about five years or longer. It is interesting that in this case there is no additional benefit for holding periods beyond 15 years, since net excess depreciation is zero and there is no recapture. Thus, after the 15 year point the indifference curves are flat.

Choosing the optimal depreciation method under the new Accelerated Cost Recovery System can be a complicated task. The need for decision charts arises from the interplay between the present values of the tax savings from annual depreciation deductions, depreciation recapture and the regular minimum tax. However, with the model and decision charts developed here, the tradeoffs are identified and the choice of depreciation method is more straightforward.

#### NOTES

1. P. L. 97-34, 8/13/81.
2. Section 168.
3. Sections 168(a) and (e).
4. Section 168(c)(2)(D).
5. Treasury Department News Release, September 10, 1981.
6. Section 57(a)(2).
7. The term  $(t_o - t_g)$  can also be expressed as  $(.6t_o)$  because  $t_g$  is 40 percent of  $t_o$  for taxpayers other than corporations. [Section 1202(a)]
8. In some instances, the last portion of the fourth term should be  $(.15)(1 + \frac{t_o}{2})$  rather than  $(.15)$  in order to capture the effect of both the flat 15 percent regular minimum tax rate and the change in the investor's regular income tax liability due to the incremental depreciation. If the incremental depreciation causes the regular income tax liability to decrease, one-half of that decrease can reduce the exclusion in the regular minimum tax computation (assuming the regular income tax liability is in excess of \$20,000), thereby causing a like amount of tax preferences to be subject to the 15 percent tax. The  $(\frac{t_o}{2})$  adjustment factor is not necessary for marginal tax rates lower than 45 percent. Moreover, simulations performed using the adjustment factor for the 50 percent tax bracket investor caused virtually no change in the indifference curve for that investor.
9. A source listing of the computer program used for this analysis will be made available by notifying the authors.
10. To actually perform this computation,  $(t_o - t_g)$  in the third term of the equation would have to be replaced by  $(.6t_o)$ . See *supra* note 8.