

# The Taxation of Corporate Gains on Sales of Depreciable Property: An Economic Analysis

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## Taxes on sales of depreciable property

- Lock-in effect
- Discourages investment, if firms anticipate later sales
- Focus on investment effect

## Plan of paper

- Review standard model
- Introduce sales of used capital
- Current law penalizes sales

## Plan of paper (continued)

- In simple model, penalty eliminated by any of three reforms
  - Zero capital gains tax, depreciation recapture
  - Zero capital gains tax, carryover basis
  - Reduced capital gains tax
- In more general model, each reform has strengths, weaknesses

## Standard model

- Capital depreciates geometrically
- Constant production cost for capital
- Same tax rates and rules for all firms
- No sales of used capital
- Effective tax rate depends on statutory tax rate, depreciation rules

## Simple model with sales of used capital

- Capital becomes worthless to firm after  $T$  years, productive if sold to another firm
- Without taxes, capital would be sold every  $T$  years, at depreciated price
- With taxes:
  - Sales still occur, even if penalized
  - Investment reduced by any tax penalty

## Model of tax system

- Capital gains tax
- Some depreciation may be “recaptured,” taxed at ordinary rate
- Buyer depreciates used capital, on same terms as new capital
  - Sale price unchanged from no-tax world

## Two opposing effects

- Capital-gains-tax effect
  - Penalizes sale
- Depreciation-allowance effect
  - Subsidizes sales, as buyer claims bigger allowances than seller could have done

## U.S. corporate tax

- Accelerated depreciation
- No indexation of depreciation, basis
  - 3 percent inflation
- Corporate, ordinary rates both 35 percent
  - Recapture irrelevant
- Significant tax penalty on sales

TABLE 1: EFFECTIVE TAX RATES ON SOFTWARE AND EQUIPMENT (percent)

	No Sale	10	5	3	2	1
Three-year	22.5	22.7	24.5	28.1	31.3	36.2
Five-year	25.3	26.6	31.3	35.2	37.6	40.5
Seven-year	26.7	29.5	35.1	38.2	40	42.2

## Zero capital gains tax, recapture

- Recapture disproportionate allowances from prior years
  - For sales after tax life has ended, recapture 82 to 93 percent of gain
  - Negates depreciation-allowance effect
- Capital gains rate should be zero

TABLE 2: EFFECTIVE TAX RATES ON SOFTWARE AND EQUIPMENT (percent)  
(Zero Capital Gains Rate, Recapture of Excess Depreciation)

	No Sale	10	5	3	2	1
Three-year	22.5	22.5	22.5	22.5	22.5	22.5
Five-year	25.3	25.3	25.3	25.3	25.3	25.3
Seven-year	26.7	26.7	26.7	26.7	26.7	26.7

TABLE 3: EFFECTIVE TAX RATES ON SOFTWARE AND EQUIPMENT (percent)  
(15 Percent Capital Gains Rate, Recapture of Excess Depreciation)

	No Sale	10	5	3	2	1
Three-year	22.5	22.6	23.4	25	26.5	29.1
Five-year	25.3	25.9	28	29.9	31.1	32.7
Seven-year	26.7	27.9	30.6	32.1	33.1	34.3

## Zero capital gains tax, basis carryover

- Buyer effectively makes recapture payment
- Shifted back to seller via lower sale price

## Reduced capital gains tax rates

- Mathematically equivalent to recapture
- Auerbach result suggests rates of 32.5, 30.6 and 28.9 percent for equipment
- Setting rates too low (with no recapture or carryover) subsidize sales

TABLE 4: EFFECTIVE TAX RATES ON SOFTWARE AND EQUIPMENT (percent)  
(Capital Gains Tax Rates of 32.53, 30.60 and 28.87 Percent; No Recapture)

	No Sale	10	5	3	2	1
Three-year	22.5	22.5	22.5	22.5	22.4	18.4
Five-year	25.3	25.3	25.3	26.3	24.9	18.7
Seven-year	26.7	26.7	27.9	27.5	25.9	19

TABLE 5: EFFECTIVE TAX RATES ON SOFTWARE AND EQUIPMENT (percent)  
 (Capital Gains Tax Rate of 20 Percent; No Recapture)

	No sale	10	5	3	2	1
Three-year	22.5	21.6	10.8	-27.8	-123.5	*
Five-year	25.3	21.9	5.4	-9.9	-46.6	-613
Seven-year	26.7	22.1	14	3.6	-12.7	-93

## More general model

- Still want neutrality with respect to sales
- Other extensions
  - Variation in sale price
  - Differences in firms' tax treatment
- Strengths and weaknesses of three reform options

## Conclusion

- Current law penalizes sales, reduces investment
- Three reform options