

THE NEW ECONOMICS OF ACCELERATED DEPRECIATION†

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The Economic Recovery Tax Act of 1981¹ (ERTA) included several significant changes in the tax law that together represented the most substantial cut in corporate and personal income taxes ever. A particularly important and controversial element of ERTA — the Accelerated Cost Recovery System² (ACRS) — introduced radical changes in business depreciation practices.³ ACRS substantially reduced tax lifetimes and decreased the number of distinct depreciation classes from well over one hundred⁴ to only

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¹ Pub. L. No. 97-34, 95 Stat. 172 (1981).

² I.R.C. § 168 (West Supp. 1982).

³ After the writing of this paper, a number of amendments to ACRS were made by the enactment of the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982. Pub. L. No. 97-248, 51 U.S.L.W. 5 (1982). In particular, the additional liberalization of depreciation allowances (discussed below in section two) scheduled to begin in 1985 was rescinded, (*Id.* at § 206) a 50% adjustment to an asset's taxable basis for the value of investment credits received was introduced, (*Id.* at § 205) and safe-harbor leasing (discussed below in section five) was scheduled for a complete phase out by the end of 1983 and made less attractive in the interim by a series of measures. *Id.* at §§ 208, 209. These included restricting to 50% the current tax liability that a lessor could offset with safe-harbor leases, prohibiting the carrying back of tax losses generated by safe-harbor leasing, limiting to 45% the fraction of an investor's qualified lease property that could be included in safe-harbor leases, calling for a larger capital recovery period and gradual receipt of the investment tax credit on property involved in such leases, and restricting the term and interest rate of the lease. *Id.* at § 208.

These changes all are important, though of course, further changes in law could occur before many of them take effect. Though analysis of the new law is beyond the scope of this paper, certain of the conclusions made below should be seen as applying only to the law as it stood before the passage of TEFRA.

⁴ The reference is to the asset depreciation range (ADR) system. ADR was initially introduced by the Treasury Department by administration action in June 1971. See T.D. 7128, 1971-2 C.B. 132 (creating Treas. Reg. § 1.167(a)—11). The ADR system created various depreciation write-off periods for various classes of depreciable assets. See *id.* at 1.167(a)(11)(b)(4) (1982). Congress codified the ADR option in the Revenue Act of 1971. Pub. L. No. 92-178, § 109, 85 Stat. 497, 508-509 (1971), creating an I.R.C. § 167(m) (1976). The Act altered the Treasury's original composition of ADR, see T.D. 7128, 1971-1 C.B. 132, 140-41, by replacing the first year convention originally included by the Treasury with a half-year convention. See I.R.C. § 167(m)(2) (1976); see also H.R. REP. NO. 533, 95th Cong., 1st Sess. 7 reprinted in 1971 U.S. CODE CONG. & AD. NEWS 1825, 1829-30. Taxpayers were required to make an annual election in order to use ADR. I.R.C. § 167(m)(3) (1976). The Treasury's original list of asset guideline classes for ADR was contained in Rev. Proc. 71-25, 1971-2 C.B. 553. The last comprehensive listing of asset guideline classes promulgated by the Treasury before the enactment of ERTA is contained in Rev. Proc. 77-10, 1977-1 C.B. 548. Subsequent modifications of Rev. Proc. 77-10 are catalogued in 1982 STAND. FED. TAX REP. (CCH) ¶ 17320.08.

The enactment in ERTA of ACRS made the use of ADR for taking depreciation

three.⁵ In addition, ERTA liberalized the investment tax credit⁶ and created a "safe harbor" for a broad class of leasing arrangements to permit firms without taxable income effectively to sell their depreciation allowances and investment credits to corporations with taxable income.⁷ This acceleration of depreciation allowances and the related business incentive provisions are likely to have important consequences for the mix and level of investment in the United States over the next several years.

The changes introduced by ERTA, which are to be fully phased in by the end of 1985,⁸ are expected ultimately to produce a large revenue loss to the Treasury. Estimates of this projected loss vary from \$54.5 billion⁹ to \$61.3 billion¹⁰ for fiscal year 1986. In comparison, the total collection of the corporate income tax amounted to \$64.6 billion in 1980.¹¹ ERTA, therefore, appears to reduce significantly the corporate income tax as a source of revenue. While this observation may be true in the aggregate, however, significant differences remain, and others have been introduced, in the tax treatment of various investments and investors that would not have existed had the corporate tax simply been phased out.

The purpose of this article is to provide an economist's perspective on the new depreciation system introduced by ERTA, and the other business incentive provisions the Act contains. The article will examine those provisions in light of prior investment incentives and alternative proposals which were presented prior to the adoption of ACRS. In so doing, it will describe the mechanics of the various provisions. The article also will evaluate ACRS with respect to various criteria used by economists in analyzing the efficiency of investment incentives.

allowance on depreciable assets placed in service after December 31, 1980, (*see* I.R.C. § 168(e)(1) (West Supp. 1982)) largely obsolete. ADR is no longer available for property placed in service after December 31, 1980 if that property fits within the definition (contained in I.R.C. § 168(c) (West Supp. 1982)) of "recovery property." *See also infra* notes 19-23 and accompanying text.

⁵ Under ACRS, most depreciable business property falls into rapid write-off period classes of three, five, or ten years. *See* I.R.C. § 168(c)(2)(A); (B); (C). *See infra* notes 37, 40, and accompanying text. There are two additional classes possessing a fifteen year write-off period for certain real property (section 1250 property) and for public utility property. I.R.C. § 168(c)(2)(D); (E). *See infra* notes 40-41 and accompanying text.

⁶ *See* Pub. L. No. 97-34, §§ 211-14, 95 Stat. 172, 227-241 (1980), *amending* I.R.C. §§ 46-48 (West Supp. 1982).

⁷ I.R.C. § 168(f)(8) (West Supp. 1982).

⁸ The maximum rapid write-off benefits under ACRS take effect for property placed in service after December 31, 1985. *Compare* I.R.C. § 168(b)(1)(A) and (B) (West Supp. 1982) with I.R.C. § 168(b)(1)(C) (West Supp. 1982).

⁹ STAFF OF THE JOINT COMMITTEE ON TAXATION, 97TH CONG., 1st Sess., SUMMARY OF H.R. 4242, THE ECONOMIC RECOVERY TAX ACT OF 1981, at 57. (Comm. Print 1981).

¹⁰ U.S. DEPARTMENT OF THE TREASURY, OFFICE OF TAX ANALYSIS, CHANGE IN FISCAL YEAR RECEIPTS RESULTING FROM THE CONFERENCE AGREEMENT ON H.R. 4242, THE ECONOMIC RECOVERY ACT OF 1981, August 3, 1981, at B-1.

¹¹ U.S. COUNCIL OF ECONOMIC ADVISORS, ECONOMIC REPORT OF THE PRESIDENT, 1981 Table B-70, at 315. This report, prepared before the enactment of ACRS in ERTA, estimated that revenues from the corporate income tax would be approximately the same amount. *Id.*

After reviewing the history of investment incentives in the United States in Section One, this article in Section Two examines ERTA as it relates to depreciation. Section Three presents a comparison of ACRS with alternatives that arose during the policy discussion leading to the passage of ERTA. Section Four reviews the criteria economists use in evaluating changes in the tax treatment of investment. Section Five presents an economic analysis of ACRS, and also touches on the relative merits of some of the other recent proposals alluded to above. In addition, Section Five reviews in detail a particularly important part of ACRS — the liberalization of sale-leaseback arrangements. The last section, Six, offers some concluding comments on the state of the corporate income tax.

I. A BRIEF HISTORY OF INVESTMENT INCENTIVES IN THE U.S.

The business incentive provisions in ERTA were only one set in a series of changes in the tax law affecting business investment through depreciation allowances, the investment tax credit and the corporate tax rate.

The initial enactment of the Internal Revenue Code of 1954¹² included the first major change in the tax law aimed specifically at encouraging business investment. This change afforded purchasers of depreciable assets a choice of two forms of "accelerated" depreciation for tax purposes as alternatives to the normal practice of the time — straight-line depreciation based on the theoretical useful life of the asset.¹³ The two new formulas for accelerated depreciation were the sum of the years-digits method¹⁴ and the declining balance method.¹⁵ Both methods permit a large fraction of an asset's depreciation deductions to be taken in the years shortly after its acquisition. This shifting of deductions toward earlier years is equivalent to an interest-free loan from the Treasury to the purchaser of the asset, since it allows the purchaser to defer tax payments to later years with no increase in the amount due.¹⁶

Other major changes in depreciation allowances before 1981 were enacted in 1962 and 1971. In 1962, the Treasury Department introduced depreciation guidelines¹⁷ which permitted investors to write off assets over a shorter period

¹² Pub. L. No. 83-591, 68A Stat. 3 (1954).

¹³ See I.R.C. § 23(1) (1952). (Note that reference here is to the 1939 Code.) I.R.C. § 167(b)(1) (1976); Treas. Reg. § 1.167(b)-1 (1982).

¹⁴ I.R.C. § 167(b)(3) (1976); Treas. Reg. § 1.167(b)-3 (1982).

¹⁵ I.R.C. § 167(b)(2) (1976); Treas. Reg. § 1.167(b)-2 (1982).

¹⁶ See S. SURREY, W. WARREN, P. MCDANIEL, & H. AULT, *FEDERAL INCOME TAXATION* 401 (1972) [hereinafter cited as SURREY, WARREN, MCDANIEL & AULT]. For example, an asset with a two-year lifetime purchased for \$100 would receive straight-line deductions of \$50, amounting to tax savings (based on the corporate rate of 46%, see I.R.C. § 11(b)(5) (West Supp. 1982)) of \$23 in each year. The sum-of-the-years digits method would dictate a deduction of \$66.67 in the first year, and \$33.33 the second (see Treas. Reg. § 1.167(b)-3(a)(2)(ii) (1982)) with equivalent tax savings of \$30.67 and \$15.33 respectively. The total tax savings is still \$46, but the investor receives \$7.67 more in the first year and \$7.67 less in the second year.

¹⁷ See Rev. Proc. 62-21, 1962-2 C.B. 418.

than typically had been allowed before.¹⁸ The Revenue Act of 1971¹⁹ created the Asset Depreciation Range (ADR) system,²⁰ under which the purchaser of a qualifying asset was permitted to select a tax lifetime of between 80 and 120% of the asset guideline period established under ADR for the appropriate asset class.²¹ The variation in lifetimes under the ADR system applied to personal (Section 1245) property (equipment),²² but not depreciable real (Section 1220) property (structures).²³

The second major element of the tax system having a direct and narrow impact on investment is the investment tax credit (ITC). Introduced in the Revenue Act of 1962²⁴ as a 7% credit on new investment,²⁵ it was suspended for a brief period between 1966 and 1967,²⁶ "permanently" removed in 1969,²⁷ reintroduced in 1971,²⁸ and increased to a 10% credit in the Tax Reduction Act of 1975.²⁹ Like the Asset Depreciation Range, the ITC did not (and still does not) apply to depreciable real property,³⁰ and applied at reduced rates for short-lived equipment with tax lives of less than seven years.³¹

¹⁸ Rev. Proc. 62-21 established guideline write-off periods for various types of business assets. *See id.* at 419-28. These periods represented the Treasury's estimates of the useful lives of the various asset classes. *See id.* at 419-28. These periods represented the Treasury's estimates of the useful lives of the various asset classes. *See id.* at 429. Rev. Proc. 62-21 contained procedures to be used in selecting a write-off period for an asset which was shorter lived than the prescribed guideline period. *Id.* at 431-34.

¹⁹ Pub. L. No. 92-178, 85 Stat. 497 (1971).

²⁰ *See supra* note 4.

²¹ I.R.C. § 167(m)(1) (1976). ADR has been largely repealed by ERTA. *See supra* note 4.

²² *See* Treas. Reg. § 1.167(a)-(11)(b)(2)(iii)(a) (1982).

²³ *See id.* at § 1.167(a)-(11)(b)(2)(iii)(b) (1982).

The election of ADR made tax accounting more complicated for the investor. Such complexity has been offered as one explanation for the fact that many smaller businesses failed to adopt ADR, even several years after its introduction. *See* T. VASQUEZ, OFFICE OF TAX ANALYSIS, U.S. DEPARTMENT OF THE TREASURY, THE EFFECTS OF THE ASSET DEPRECIATION RANGE SYSTEM ON DEPRECIATION PRACTICE, PAPER NO. 1, 21 (1974).

²⁴ Pub. L. No. 87-834, 76 Stat. 960 (1962).

²⁵ *Id.* at § 2(b), 76 Stat. 960, 963 (1962) (creating I.R.C. § 46(a)(1) (1964)).

²⁶ *See* Pub. L. No. 89-800, 80 Stat. 1508 (1966) (creating I.R.C. § 48(b), (i), (j) (1964 ed. Supp. V 1964-1969)). Congress created a "suspension period" for the investment credit running from October 10, 1966 to December 31, 1967. *See* Pub. L. No. 89-800, § 1, 80 Stat. 1508, 1513 (1966).

²⁷ Pub. L. No. 91-172, § 703, 83 Stat. 487, 660 (1969) (creating I.R.C. § 49 (1970); repealed by Pub. L. No. 95-600, § 312(c)(1), (d), 92 Stat. 2826 (1978)).

²⁸ Pub. L. No. 92-179, § 101(a), 85 Stat. 497, 498 (1971).

²⁹ Pub. L. No. 94-12, § 301, 89 Stat. 2636 (1975); *see* I.R.C. § 46(a)(2)(A) (1976).

³⁰ *See* I.R.C. § 48(a)(1) (West Supp. 1982).

³¹ Under I.R.C. § 46, the taxpayer was allowed a 10% credit on the "qualified investment" amount for the property. *See* I.R.C. § 46(a)(2)(A) (1976). The "qualified investment" amount was defined as the full amount of the cost basis of the property if the property had a useful life of at least seven years, two-thirds of that basis if the useful life was five to six years, and one third of that basis if the useful life was three to four years. *See id.* § 46(c)(2) (1976). Property with a useful life of less than three years did not have a qualified investment amount and was therefore ineligible for the credit. This last feature of the ITC constituted the main reason a business would have for using ADR to elect a tax lifetime of at least seven years in order to receive the full 10% credit.

More generally, while not limited to income from investment, tax rate reductions, especially in the corporate sector, also have been viewed as a way of stimulating investment activity. Except for a 10% surcharge imposed during the Viet Nam War,³² the corporate tax has drifted downward during the last two decades, with a reduction to 48% from 52% in 1964³³ and a further reduction to 46% in 1978.³⁴

Econometric evidence varies on the degree of investment stimulus provided by each of these three changes in the tax law.³⁵ Nonetheless there is general agreement among economists that tax incentives do influence the scale and type of investment that occurs.³⁶ Indeed, one might argue the formulation and adoption in ERTA of the Accelerated Cost Recovery System grew in part from a general perception that not enough investment in plant and equipment was taking place.

II. THE ACCELERATED COST RECOVERY SYSTEM

The key aspect of ACRS is the shortening and simplification of depreciation schedules applicable to personal and real property. For example, effective January 1, 1981,³⁷ most new personal (section 1245) property qualifies for one of two depreciation classes. Autos, light-duty trucks, and other personal property with a midpoint life of four years or less under the old ADR system³⁸ qualify for a three-year write-off.³⁹ Most other equipment may be depreciated

³² Pub. L. No. 90-364, § 102(a), 82 Stat. 251, 254 (1968); see I.R.C. § 51(a)(1)(B) (1970).

³³ The Revenue Act of 1964 reduced the corporate tax rate by lowering the "normal tax" on corporate income from 30% to 22%, and raising the surtax amount from 22% to 26%. See Pub. L. No. 88-272, 78 Stat. 19, 25 (1964); see also I.R.C. § 11(b), (C) (1970).

³⁴ The Revenue Act of 1978 eliminated the application of a separate "normal tax" and "surtax" to corporate income and replaced it with a single, graduated schedule of tax rates for corporations with the maximum rate set of 46%. Pub. L. No. 95-600, § 301(a), 92 Stat. 2763, 2820 (1978); see I.R.C. § 11(b) (1976 ed. Supp. III 1979).

³⁵ See *supra* note 123.

³⁶ See *id.*

³⁷ See I.R.C. § 168(b)(1)(A) (West Supp. 1982); see also *id.* § 168(e)(1).

³⁸ Under ADR different classes of assets (termed "asset guideline class(es)") were assigned to various write-off periods. See, e.g., Rev. Proc. 77-10, 1977-1 C.B. 548. Each asset guideline class was assigned an "asset guideline period" equal to the number of years over which the asset was to be depreciated. See *id.* There was also an upper limit and lower limit (equal to the asset guideline period plus or minus 20% of that period), allowing the taxpayer to select a longer or shorter depreciation lifetime for an asset. See *id.* The central period, the asset guideline period, was known as the ADR "midpoint" life of the asset. Under ADR, the midpoint life of automobiles (asset guideline class 00.22) was three years (*id.* at 550), and the midpoint life of light general purpose trucks (asset guideline class 00.242) was four years. *Id.*

³⁹ Under ACRS, an asset with a midpoint life of 4 years or less is placed into the three-year rapid recovery property class. See I.R.C. § 168(c)(2)(A)(i) (West Supp. 1982). That section states that three-year property includes § 1245 class property with "a present class life" of 4 years or less. *Id.* Present class life is defined as the asset guideline period (the ADR midpoint life) for the asset as determined under ADR. See *id.* § 168(g)(2). Thus, although ERTA repeals ADR as a method for depreciation, ADR is retained insofar as an asset's ADR midpoint lifetime continues to be relevant in determining which write-off period applies under ACRS. See *id.* § 168(c); see also

over five years.⁴⁰ Real (section 1250) property is assigned to a fifteen-year recovery period.⁴¹

The new legislation also specifies the pattern of depreciation allowance to be used for each of the three recovery classes which are summarized in Table 1.

Table 1

Recovery Schedules under ACRS⁴²

Year of Purchase % Allowance in Year	3 Year			5 year		
	1981-4	1985	1986	1981-4	1985	1986
1	25%	29%	33%	15%	18%	20%
2	38	47	45	22	33	32
3	37	24	22	21	25	24
4	—	—	—	21	16	16
5	—	—	—	21	8	8

For personal property placed in service between 1981 and 1984, the allowances set forth in the Act mimic the use of 150%, declining balance with a switch-over to straight-line in the later years and adoption of the half-year convention,⁴³ under which all assets purchased in a given tax year are treated as if they were purchased six months into the year.⁴⁴ For 1985, the schedule for new personal property approximates 175% declining balance with a second-year switchover to sum-of-the-year's digits.⁴⁵ For 1986 and after, the pattern of allowances follows 200% declining balance with a second-year switchover to sum-of-the-year's digits.⁴⁶

S. REP. NO. 144, 97th Cong., 1st Sess. 49-50, *reprinted in* 1981 U.S. CODE CONG. & AD. NEWS 105, 154-55. Hence, because automobiles, light-duty trucks and all other assets having an ADR midpoint life of four years or less, under ACRS such assets are placed into the three year recovery period.

⁴⁰ See I.R.C. § 168(c)(2)(B) (West Supp. 1982). The five-year property class under ACRS is a residual class, covering property which does not come under the three year class period, or the longer periods for depreciable real property and for long-lived periods for depreciable real property and for long-lived public utility property. The latter presents an important exception to the general rapid write-off treatment of personal property under ACRS. "Public utility property" is that property described in § 167(1)(3)(A). *Id.* § 168(g)(1). Such property with an ADR midpoint life of between eighteen and twenty-five years may not be depreciated over ten years, *id.* § 168(c)(2)(i), while a fifteen-year write-off is permitted for public utility assets with an ADR midpoint life greater than twenty-five years. *Id.* § 168(c)(2)(E).

⁴¹ *Id.* § 168(c)(2)(D). The fifteen year write-off period applies to section 1250 with an ADR midpoint life of greater than 12.5 years. *Id.* Section 1250 property with a midpoint life of 12.5 years or less is assigned to the ten year write-off period. *Id.* § 168(c)(2)(C)(ii). This system of few depreciation classes and fast write-off is essentially the Capital Cost Recovery Act, or the "ten-five-three" scheme originally proposed by Congressmen Conable and Jones in 1979, except that the recovery period for real property has been lengthened from ten to fifteen years.

⁴² See *id.* § 168(b)(1)(A); (B); (C).

⁴³ See Treas. Reg. § 1.167(a)-11(c)(2)(iii) (1982).

⁴⁴ See S. Rep. No. 144, 97th Cong., 1st Sess. 50, *reprinted in* 1981 U.S. CODE CONG. & AD. NEWS 105, 155.

⁴⁵ See *id.* at 51, 1981 U.S. CODE CONG. & AD. NEWS at 156.

⁴⁶ This has been amended. See *supra* note 3. It should be noted that the switchover to

For real property in the fifteen-year recovery class, except low income rental housing, exact percentage allowances are not specified in the Act. Instead, Congress directed the Secretary of the Treasury to assign percentages which would approximate the benefits of using 175% declining balance with a switchover to straight-line timed to maximize the investor's tax benefits.⁴⁷ For low income housing the Secretary is directed to assign percentages approximating a 200% declining balance method with a switchover to straight-line, again timed to maximize the deductions allowed to an investor.⁴⁸ Unlike the rules for personal property,⁴⁹ no half-year convention is applied in calculating real property deductions.

As an alternative to these ACRS depreciation schedules, investors may elect the straight-line over depreciated method. If elected, straight-line depreciation may be made over either the normal recovery period or one of two "extended" recovery periods specified for each recovery class.⁵⁰

Table 2
Extended Recovery Periods⁵¹

<u>Class (Years)</u>	<u>Extended Recovery Periods (Years)</u>
3	5, 12
5	12, 25
10	25, 35
15	35, 45

Generally, for purposes of calculating corporate earnings and profits, the corporate taxpayer must use the straight-line method over a period equal to the shorter of the two extended recovery periods.⁵² If, however, the corporate taxpayer elects the longer extended recovery period for cost recovery purposes, it must also use that period for calculating earnings and profits.⁵³ This provision represents an attempt to prevent the "losses" at the corporate level generated by ACRS from spilling over into the shareholders' tax treatment of corporate distributions, turning taxable dividends into nontaxable returns of capital. Under previous law, the same lifetime applied to the calculation of earnings and profits and the calculation of tax depreciation (although straight-line was

straight-line or sum-of-the-years digits in the second year does not necessarily maximize the value of switching over to the investor. For example, for 1981-1984, a switchover to straight-line in the third year would give a larger second year allowance to assets in the five-year class.

⁴⁷ I.R.C. § 168(b)(2)(A) (West Supp. 1982).

⁴⁸ *Id.* § 168(b)(2)(A)(ii).

⁴⁹ See *supra* notes 43-46 and accompanying text.

⁵⁰ See I.R.C. § 168(f)(2)(C)(i) (West Supp. 1982). The election is made on a class-by-class basis. See *id.* § 168(f)(2)(C)(ii)(I). For 15-year real property, however, the election may be made on a property-by-property basis. See *id.* § 168(f)(2)(C)(ii)(II).

⁵¹ See *id.* § 168(b)(2)(C)(i).

⁵² See *id.* § 312(k)(3)(A).

⁵³ *Id.* § 312(k)(3)(C).

always assumed for the former).⁵⁴ The use of different lifetimes for the two calculations is consonant with the view that the recovery periods are no longer intended to bear any close relationship to the concept of an asset's "useful life."

Property purchased by the taxpayer before 1981 does *not* qualify for ACRS,⁵⁵ but used property the taxpayer purchases after January 1, 1981, *does* so qualify.⁵⁶ That is, ACRS applies to all property purchased by the *current owner* after the effective date, regardless of when the asset was originally manufactured, sold and placed in service.⁵⁷ This application of ACRS to used property is limited to *bona fide* transactions by a series of "anti-churning" rules which hinder the taxpayer in obtaining ACRS benefits on property the taxpayer placed in service prior to January 1, 1981.⁵⁸ For transfers between related parties or sale-leaseback arrangements, the purchaser must continue the depreciation practice of the asset's prior owner.⁵⁹

As a result of the shortening of recovery periods for asset depreciation through ACRS, a number of other issues had to be addressed in ERTA. One was the method of calculating earnings and profits, discussed above.⁶⁰ Second, assets in the three-year recovery class receive a 6% investment tax credit⁶¹ rather than the 3 1/3 % credit which an asset with that lifetime received prior to ERTA.⁶² Similarly, all other personal property in the five, ten and fifteen year classes receives the full 10% credit.⁶³

A second issue requiring treatment by ERTA due to ACRS was the recapture of accelerated depreciation upon the sale of an asset. The treatment of personal property remains undisturbed by ERTA: all sale proceeds representing prior depreciation are taxed at ordinary rather than capital gains rates.⁶⁴ For example, the sale of an asset purchased for \$100 with a current basis of \$20 will result in the ordinary taxation of the difference between the sale price and \$20 for any sale price up to \$100 and capital gains taxation of any amount by which sale price exceeds \$100. Under ERTA, however, real property is accorded exactly the same recapture treatment as personal property *if* straight-line depreciation is not used.⁶⁵ If straight-line is used, then the previous method of recapture for real property applies: only the difference between straight-line

⁵⁴ I.R.C. § 312(k)(1) (1976).

⁵⁵ I.R.C. § 168(e)(1) (West Supp. 1982).

⁵⁶ *See id.*

⁵⁷ *See id.*

⁵⁸ *See id.* § 168(e)(4) (West Supp. 1982).

⁵⁹ *See id.* § 168(e)(4)(H)(ii).

⁶⁰ *See supra* notes 52-54 and accompanying text.

⁶¹ *See* I.R.C. § 46(c)(7)(B) (West Supp. 1982). The statute grants the taxpayer a credit on three-year property equal to 60% of the qualified investment amount. *Id.* *See supra* note 31.

⁶² I.R.C. § 46(c)(2) (West Supp. 1982). *See supra* note 31.

⁶³ *See* I.R.C. § 46(c)(7)(A). Recovery property in these classes is entitled to a credit on a full 100% of the qualified investment amount. *See supra* note 31. TEFRA has introduced a 50% basis adjustment for ten FTC. *See supra* note 3.

⁶⁴ *See* I.R.C. § 1245(a) (West Supp. 1982).

⁶⁵ *Id.*

basis and actual basis (zero in the above hypothetical case) is subject to ordinary income taxation.⁶⁶ Thus, a disincentive has been introduced against the use of the full ACRS depreciation benefits for those purchasers of real estate who intend to sell after a reasonably short period.

Investment credit recapture under ERTA is similar to previous law and is unaffected by ACRS. The credit must be "given back" *pro rata* (though without interest) if the period the asset was held before resale was less than the minimum specified for full credit.⁶⁷ Thus, an asset in the five year class sold after three years would have to pay back 40% of the credit originally received.⁶⁸ ERTA also increases the amount of newly purchased used property to which an investor can apply the investment tax credit from the current limit of \$100 thousand⁶⁹ to \$125 thousand in 1981 and \$150 thousand in 1985.⁷⁰ To the extent of this limitation, it is now possible to obtain the full ITC every five years on a qualifying asset through resale.

The final issue raised by the enactment of ACRS is how to maximize the availability of the large acceleration of depreciation allowances. ERTA attempts to allow all businesses, including those with current losses, to benefit from these new investment incentives. Due to the increased depreciation under ACRS, many taxpayers will be thrown into the position of having a net operating loss, for tax purposes. Consequently, since the income tax is not refundable, the absence of taxable income imposes a ceiling on the extent to which the tax benefits of the new legislation could be obtained. One method for raising this ceiling is to increase carryover periods for depreciation deductions. ERTA contains such a provision, extending the carryover period for net operating losses and the investment tax credit to fifteen years from the previously permitted seven year carry forward.⁷¹ This extension of the carryover period only partially extends the range of firms capable of benefitting from ACRS. Firms with a record of losses or new firms without any record of profit or loss must still carry net operating losses forward. This involves a loss in interest on the delayed depreciation deductions as well as a cash flow constraint.

To remedy this problem and increase further the coverage of ACRS, the Economic Recovery Tax Act created a "safe harbor" for a broad range of sale-leaseback arrangements, the effect of which is to allow transactions which are very similar to the outright sale of depreciation deductions and investment tax credits.⁷² Under a sale-leaseback deal, a business purchases a depreciable asset

⁶⁶ *Id.*

⁶⁷ *See id.* § 47(a)(5). For three-year property, the entire credit will be recaptured if the property is disposed of within the first year, two-thirds if within the second year, etc., until year four, when there is no recapture. *Id.* § 47(a)(5)(B). For all other classes of property, the entire credit will be recaptured if the property is disposed of within the first year, 80% if within the second year, etc., until year six, when there is no recapture. *Id.*

⁶⁸ *See id.*

⁶⁹ *See* I.R.C. § 48(c)(2)(A) (1976).

⁷⁰ *See* I.R.C. § 48(c)(2)(A) (West Supp. 1982).

⁷¹ *See id.* § 172(b)(1)(B).

⁷² *See id.* § 168(f)(8).

that it intends to use and resells it to another, which can then take the cost recovery allowances and investment credit. Subsequently, that company (the lessor) then leases it back to the original purchaser (the lessee). Generally speaking, under ERTA, as long as the lessor is a corporation and had an "at risk" investment of at least 10% of the asset's adjusted basis throughout the lease, the transaction would be characterized as a lease.⁷³ Among the arrangements allowed within this "safe harbor" were financing of the other 90% of the purchase price by a loan from the lessee; retention by the lessee of nominal ownership of the property for other legal purposes, such as title possession and payment of local property taxes;⁷⁴ and resale arrangements whereby the lessor is obligated to sell the asset back to the lessee at the termination of the lease below its fair market value.⁷⁵ With these provisions, it was possible to structure a lease so that lessor and lessee need exchange money only at the commencement of the lease.⁷⁶

While such an arrangement would appear to make the lease indistinguishable from the simple sale of depreciation allowances and investment credits, it differs in certain important respects. For example, although the Treasury has recently promulgated regulations on the issue,⁷⁷ it is not yet entirely clear that lessors can escape fully all risks associated with the potential bankruptcy of lessees.⁷⁸ In addition, in the case of mass transportation equipment owned by

⁷³ See *id.* §§ 168(f)(8)(A), (B), (C). Eligible lessor corporations do not include subchapter corporations, *id.* § 168(f)(8)(B)(i)(I), or personal holding companies, *id.*, but they may include partnership or grantor trusts where each partner or grantor is an eligible lessor corporation in its own right. *Id.* § 168(f)(8)(B)(i)(II), (III). The 10% "at risk" minimum investment must be maintained by the lessor throughout the lifetime of the lease. *Id.* § 168(f)(8)(B)(ii). Additionally, the term of the lease, including any extensions, cannot exceed 90% of the property's useful life (determined under § 167), or 150% of the asset's ADR midpoint lifetime period, determined under the ADR system. *Id.* § 168(f)(8)(B)(iii).

The safe-harbor leasing provisions of § 168 apply only to "qualified leased property." *Id.* § 168(f)(9)(A). Generally speaking, "qualified leased property" is defined in § 168 as recovery property which is new section 38 property leased within three months of the date when the property was first placed in service. See *id.* § 168(f)(8)(D). If the parties enter into such a sale and lease back agreement, and if they treat the agreement as a lease and make an election to have § 168(f)(8) apply to the agreement, and if the above-described requirements of § 168(f)(8)(B) are satisfied, then the agreement will be treated as a lease, and the lessor shall be treated as the owner of the property. *Id.* § 168(f)(8)(A). As such, the lessor will be entitled to the available ACRS deductions and investment credit. No other factors will be relevant on the classification of the agreement as a lease. *Id.* § 168(f)(8)(C). Hence, prior law governing sale and lease back agreements (see, e.g., Rev. Rul. 55-540, 1955-2 C.B. 39 and Rev. Prov. 75-21, 1975-1 C.B. 715) will have no effect on agreements which meet the requirements of the safe-harbor leasing rules of § 168(f)(8)(C).

⁷⁴ See Temp. Reg. § 5c.168(f)(8)-1(c)2, 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H.

⁷⁵ See I.R.C. § 168(f)(8)(C); see also *supra* note 73.

⁷⁶ See *infra* discussion presented in text and notes at section V.

⁷⁷ See Temp. Reg. § 5c.168(f)(8), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780A-1780H.

⁷⁸ If the lessee "sells or assigns his interest in" the lease property prior to the termination of the sale and leaseback agreement, the agreement will cease to be characterized as a lease under the terms of § 168(f)(8) as of the date of the transfer, unless the transferee agrees to take as a lease, prior law (see *supra* note 75) governing the treatment of sale and leaseback agreements

state and local governments and financed by tax-exempt bonds, the current leasing arrangements allow the lessee to be a non-taxable entity.⁷⁹ This arrangement makes it possible for such a government to "sell" credits and depreciation allowances for which it would never be eligible itself.

The increased deductions provided by the enactment of ACRS were expected to produce a substantial revenue loss for the Treasury. As always, the revenue cost of such a large tax reduction as ACRS would be difficult to measure with any precision; such a calculation requires estimates of how much investment and other sources of revenue would occur with ACRS as well as how much would have occurred without ACRS. While macroeconomic models exist and can be applied for such purposes, one can have confidence only in the rough magnitudes rather than the exact values of predictions. This lack of precision is not a fault of the model-builders; there is simply too much uncertainty about the future to make precise forecasts. Nevertheless, it is interesting to examine the revenue costs that have been projected for ACRS.

must be satisfied. Temp. Reg. § 5c.168(f)(8)-8(a), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H. If the lessee would be deemed to be the owner of the property without regard to § 168(f)(8), disqualification will be treated as a sale of the property by the lessor to the lessee. Temp. Reg. § 5c.168(f)(8)-8(d), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H. The amount realized on the sale will include all consideration received and/or remaining due to the lessor under the agreement. *Id.* The sale would also trigger recapture of the ACRS deductions and the investment credit. Temp. Reg. § 5c.168(f)(8)-8(e), example (1), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H. The temporary regulations provide tax if the lessee's interest in the lease or in the property is sold or assigned in a federal or state bankruptcy or insolvency proceeding, the agreement will retain its character as a lease and the assignee or purchaser will take the property subject to the lease if:

(1) Prior to the sale the lessor gives written notice of his federal income tax ownership to the relevant court and to either the trustee, receiver or similar person or debtor, if the debtor remains in possession of the property. Temp. Reg. § 5c.168(f)(8)-2(a)(6)(8), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H. This notice must request that a copy of the notice be forwarded to the assignee or purchaser prior to the sale. *Id.* Within 60 days after the sale assignment or sale the lessor must itself notify the assignee or purchaser of its interest and provide the assignee or purchaser with a copy of the lease. *Id.* If the transaction is a sale and leaseback transaction, the lessor must also provide notice of its purchase money obligation. *Id.*

(2) The lessor must also file notice of the transaction with its next tax return. *Id.* § 5c.168(f)(8)-2(a)(6)(ii), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H.

(3) Prior to the sale any party with a perfected security interest in the property which arose not later than the time the lessee first used the property must "specifically either exclude or release in writing the Federal income tax ownership of the property from their interests." *Id.* § 5c.168(f)(8)-2(8)(6)(iii), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H. The assignee or purchaser must also file notice of the transaction with its next tax return. *Id.* § 5c.168(f)(8)-2(a)(6), 1982 STAND. FED. TAX REP. (CCH) ¶ 1708B. Subsequent transfers of the property (outside of the bankruptcy or insolvency proceeding) during the term of the lease will not disturb the characterization of the lease as such if either (1) prior to the transfer the lessor gives the transferee notice of its interest and a copy of the lease and files notice of the transaction with its next tax return, or (2) the transferee agrees in writing within 60 days of the transfer to take the property subject to the lease and the notice required in § 5c.168(f)(8)-2(a)(5) is filed by the lessor and transferee. *Id.* Failure to abide by the notice requirements and the requirement concerning the consents of parties with security interests in the lease property will cause the safe harbor protection of § 168(f)(8) for the lease agreement to expire. Temp. Reg. § 5c.168(f)(8)-7(d)(10), (11), (12), 1982 STAND. FED. TAX REP. (CCH) ¶ 1780H.

⁷⁹ See I.R.C. § 168(f)(8)(D)(iii) (West Supp. 1982).

Table 3 presents estimates by the Joint Committee on Taxation and the Office of Tax Analysis of the Treasury of the annual revenue loss following from the adoption of ACRS during the fiscal years 1981-1986.

Table 3
Revenue Cost of ACRS
(Billions of Dollars)

Fiscal Year	OTA ⁸⁰	JCT ⁸¹
1981	2.02	1.56
1982	8.98	10.66
1983	17.15	18.60
1984	28.05	28.28
1985	41.32	39.27
1986	61.35	54.47

The estimates, which are quite similar, predict an annual loss which grows steadily throughout the period and, presumably, would continue to grow if calculations for later years were available. There are three reasons for this growth over time. First, as the nominal amount of investment grows — through real growth as well as inflation — so grow the depreciation deductions and investment credits investors receive. Moreover, only that fraction of capital purchased after 1981 would be receiving the new cost recovery allowances.⁸² As the years pass, this fraction will include a larger fraction of the total capital stock. Finally, the phase-in provision, for personal property, of the degree of acceleration of deductions over the specified recovery period,⁸³ must also contribute to a growth in revenue loss.⁸⁴

⁸⁰ See U.S. DEPARTMENT OF TREASURY, *supra* note 10, at B-1.

⁸¹ See U.S. JOINT COMMITTEE ON TAXATION, *supra* note 9, at 315.

⁸² The ACRS deductions are not available for property which was used by the taxpayer before December 31, 1980. See *supra* notes 55-59 and accompanying text.

⁸³ See *supra* notes 43-48 and accompanying text.

⁸⁴ While these numbers are large by historical standards, they appear small when compared to the revenue losses projected by OTA and JCT to result from the personal tax cut enacted in ERTA. For example, the Joint Committee on Taxation, *supra* note 9, at 57, projects a loss of \$196 billion in 1986 alone from personal tax cuts, while the Treasury's Office of Tax Analysis, *supra* note 10, at B-1, estimates the loss to be \$174 billion. These numbers, however, are not really comparable to the estimates for ACRS since, even with a constant rate of inflation, "bracket creep" caused by the progressivity of the individual rate schedule would have caused tax receipts to rise. No similar increase is built into the corporate tax since the tax rate on virtually all income is the same with all corporate income over \$100 thousand being taxed at a 46% rate. I.R.C. § 11(a)(5) (West Supp. 1982). A January 1981 study by the Congressional Budget Office suggested that indexing the tax system as of January 1, 1981 would have resulted in a revenue loss of \$182.1 billion by FY 1985. CONGRESSIONAL BUDGET OFFICE, AN ANALYSIS OF PRESIDENT CARTER'S BUDGETARY PROPOSALS FOR FISCAL YEAR 1982 5 (1981) [hereinafter cited as ANALYSIS BY THE CONGRESSIONAL BUDGET OFFICE]. Shifting this number back to 1986 to allow for the later passage of ERTA suggests that, in the aggregate, the personal tax cut exceeds indexing by very little.

The enactment of ACRS and its correlative provisions was intended to stimulate business investment by enlarging its associated tax benefits, while it also was expected to produce a substantial tax revenue loss. Yet, ACRS was not the only modification of the depreciation system considered by Congress. Prior to the passage of ERTA, several alternative proposals for revamping the depreciation system surfaced. An examination of these alternatives suggests that the depreciation system created by ERTA was generally both more generous and more distortionary than these other proposals.

III. OTHER PROPOSALS

While effective opposition to ACRS never surfaced in Congress, there were a number of alternative depreciation programs proposed by members of the House and Senate as well as the Carter Administration, beginning in 1980.

A. *Alternatives Proposed to Congress*

One proposal, passed by the Senate Finance Committee in the summer of 1980,⁸⁵ would have established four, rather than two recovery classes for personal property, excluding public utility property, providing tax write-off periods of two, four, seven and ten years rather than three and five.⁸⁶ Under this "2-4-7-10" proposal, assets in the two and four year classes were to receive an investment tax credit of 2.5 and 6%, respectively,⁸⁷ with the other classes receiving the 10% full credit.⁸⁸ Public utility property would have received a liberalized ADR variance of 30% but otherwise have been unaffected.⁸⁹ Investors in real property were to be allowed a twenty-year lifetime, with straight-line depreciation,⁹⁰ and the option of using a fifteen-year straight-line write-off period for low income rental housing⁹¹ and a fifteen-year, 150% declining balance write-off period for owner-occupied non-residential structures.⁹² The bill also would have cut the top corporate tax rate to 44%.⁹³

The pattern of depreciation allowances to be applied to assets in the four personal property classes was somewhat novel. The taxpayer would have been permitted to use a 200%, 150% or 100% declining balance rate.⁹⁴ These per-

⁸⁵ See REPORT OF THE COMMITTEE ON FINANCE, UNITED STATES SENATE, ON H.R. 5829, S. REP. NO. 940, 96th Cong., 2nd Sess. 1 (1980) [hereinafter cited as REPORT OF THE COMMITTEE ON FINANCE].

⁸⁶ *Id.* at 49. For further details of this proposal, see STAFF OF THE JOINT COMMITTEE ON TAXATION, SUMMARY OF THE TAX CUT PROVISIONS OF H.R. 5829, August 25, 1980 [hereinafter cited as Summary of the Joint Committee on Taxation].

⁸⁷ SUMMARY OF THE JOINT COMMITTEE ON TAXATION, *supra* note 86, at 5.

⁸⁸ *Id.*

⁸⁹ REPORT OF THE COMMITTEE ON FINANCE, *supra* note 85, at 49, 54.

⁹⁰ *Id.* at 65-66.

⁹¹ *Id.* at 66.

⁹² *Id.*

⁹³ SUMMARY OF THE JOINT COMMITTEE ON TAXATION, *supra* note 86, at 6.

⁹⁴ REPORT OF THE COMMITTEE ON FINANCE, *supra* note 85.

centages were to be applied to the aggregate sum of the bases of all assets owned by the taxpayer in the relevant recovery class, rather than the current practice of separately depreciating assets of different ages.⁹⁵ Moreover, the percentage declining balance applied to each class could be changed annually at the discretion of the investors.⁹⁶ Finally, current recapture rules for personal property would have been replaced by the requirement that the sale price of the asset be deducted from the aggregate basis of the relevant recovery class account.⁹⁷ Assets sold were thus to be treated in a way symmetrical to assets purchased, in that depreciation allowances foregone by the seller would equal those acquired by the purchaser.

Another alternative to ACRS, which was put forward by the Carter Administration in 1980, was referred to as "constant-rate depreciation" (CRD).⁹⁸ CRD was similar to 2-4-7-10 in that it called for a reduction in the number of capital recovery classes (to 30)⁹⁹ and the application of a constant-rate declining balance formula to open-ended recovery accounts.¹⁰⁰

Two other proposed changes in depreciation methods would have replaced the stream of depreciation deductions taken on an asset for its tax lifetime, or recovery period, with a single deduction in the year of purchase. These two proposals were the First Year Capital Recovery System (FYCRS) and the Democratic alternative to ACRS included in the Tax Incentive Act of 1981 (TIA), passed by the House Ways and Means Committee as an alternative to ERTA. Under the FYCRS,¹⁰¹ each asset would have been assigned a capital recovery deduction in the year of purchase equal to a certain fraction of its full purchase price, with the exact value of this fraction varying across classes of assets according to durability. The method of calculating such first-year allowances was to estimate the fraction of its value an asset would lose during each year of its productive life, and take the present value of such annual measures of "economic depreciation" using a discount rate of 4%. Very short-lived assets would have received nearly a dollar in allowances for each dollar spent, while very long-lived assets would have been given less than half of the purchase price as a deduction.¹⁰² Like 2-4-7-10, FYCRS would have introduced symmetric treatment to the disposal of assets, with sellers including in

⁹⁵ See *id.* at 49-50.

⁹⁶ *Id.* at 50.

⁹⁷ See *id.* at 50, 52-53.

⁹⁸ See *President's Economic Revitalization Program: Hearings before the Committee on the Budget, House of Representatives*, 96th Cong., 2nd Sess. 1, 16 (1980).

⁹⁹ See *id.*

¹⁰⁰ See *id.* at 16, 109.

¹⁰¹ Auerbach and Jorgenson, *The First-Year Capital Recovery System*, HARVARD INSTITUT. OF ECONOMIC RESEARCH WORKING PAPER NO. 740, HARVARD INSTITUT. OF ECONOMIC RESEARCH (February 1980), *Reprinted in* TAX NOTES, April 14, 1980; see also Auerbach and Jorgenson, *Inflation-Proof Depreciation of Assets*, 58 Harv. Bus. Rev. (Sept.-Oct. 1980), at 113.

¹⁰² For example, an asset purchased for \$100, and expected to lose one tenth of its value every year, would receive a deduction of \$71.43, based on the present value of the terms $.1, .1 \times (1-.1), .1(1-.1)^2$ discounted at .04.

income the same amount that purchasers could deduct, the sale price multiplied by the first-year allowance. Some versions of the first year system also called for a repeal of the investment tax credit. The depreciation provision included in the House Ways and Means Committee's TIA was a related, but simpler and considerably more generous proposal.¹⁰³ This proposal would have permitted a full, rather than fractional, write-off of personal property in the first-year of acquisition,¹⁰⁴ repealed the investment tax credit,¹⁰⁵ and gradually brought the corporate rate down to 34%.¹⁰⁶ Real property would have received treatment similar to that offered by ACRS.¹⁰⁷

B. Comparison of Alternative Proposals with ACRS

While all proposals, including ACRS, stressed simplicity in having few recovery classes, 2-4-7-10 and CRD would have conveyed the added simplicity of using aggregate open-ended recovery accounts, rather than the "vintage accounts" by recovery class and year of purchase required under previous law and retained under ACRS. This type of simplification could be possible only in conjunction with the move to a constant-rate declining balance formula, as provided in these proposals, since only under such a formula would the age structure of the assets being depreciated have no effect on the total amount of deductions. Only the current basis of each asset would be relevant. These bases could be added together before the application of the percentage depreciation rate. Since ACRS continues the traditional practice of using combinations of depreciation methods, rather than a single declining balance formula for each recovery class, it requires continuance of the more complicated vintage account system. The TIA and FYCRS proposals were even simpler in this regard, since assets to which they applied would have had a zero basis. A related simplification included in all four alternative proposals but not in ACRS was the symmetry in tax treatment of purchasers and sellers of assets discussed above.

Neither 2-4-7-10 nor CRD would have provided tax reductions as large as those estimated for ACRS. This difference in projected tax reductions can be seen clearly from Table 4, which compares the projected revenue losses of the forerunner of ACRS, 10-5-3, with those of 2-4-7-10 and CRD.¹⁰⁸

¹⁰³ See COMMITTEE ON WAYS AND MEANS, U.S. HOUSE OF REPRESENTATIVES, 97TH CONG., 1ST SESS., SUMMARY OF THE TAX INCENTIVE ACT OF 1981, H.R. 4242 (Comm. Print 1981) [hereinafter cited as SUMMARY OF THE COMMITTEE ON WAYS AND MEANS].

¹⁰⁴ See *id.* at 13-15.

¹⁰⁵ See *id.*

¹⁰⁶ See *id.*

¹⁰⁷ See *id.* at 15. Real property generally would have been written off over a 15-year period using a 150% declining balance method. *Id.* This is generally the same treatment that real property receives under ACRS. See *supra* note 43 and accompanying text.

¹⁰⁸ The estimates for 10-5-3 rather than ACRS are presented here because the assumptions involved in estimating its revenue loss are comparable to those used for the alternative proposals. The \$74.5 billion loss in 1986 under 10-5-3 exceeds those estimates for ACRS *supra* cited in text accompanying notes 9 and 10, because of changes such as the lengthening of the real property recovery period, and may also be due to differences in the assumptions on which the forecasts were based.

Table 4
Revenue Cost Estimates of 10-5-3 and Two Alternatives¹⁰⁹

(Billions of Dollars)			
<u>Fiscal Year</u>	<u>10-5-3</u>	<u>2-4-7-10</u>	<u>CRD</u>
1981	2.9	4.3	2.9
1982	10.8	13.7	9.0
1983	22.1	18.6	14.2
1984	37.8	19.0	18.4
1985	56.3	19.7	22.2
1986	74.5	21.0	25.4

Estimates of the revenue costs of the other two proposals based on comparable economic assumptions are not available. The House Ways and Means Committee report accompanying TIA, however, estimated that the business incentive provisions of TIA would rise from \$1.5 billion in 1981 to \$58.2 billion in 1986,¹¹⁰ figures comparable to the revenue losses anticipated for ACRS.¹¹¹ An earlier calculation of the revenue loss of FYCRS, if enacted at the beginning of 1981, suggested a revenue loss reaching \$28.7 billion by 1985.¹¹²

All of the proposals stressed simplicity, and most would have lowered to some extent the tax burden on capital investment. The proposals differed, however, in a number of respects important from an economic perspective, such as the overall tax burden on investment, the distribution of this tax burden across different assets, the sensitivity of this burden to inflation, the revenue loss per dollar of investment and the distribution of incentives between the investments of taxable and non-taxable investors.

IV. EVALUATION CRITERIA

Each of the characteristics of a business tax incentive discussed at the end of the preceding section plays a role in determining how well a given proposal will succeed in increasing productivity and welfare. To explore these characteristics and their importance, it is necessary first to discuss the economic criteria that are involved. There are three general areas of inquiry: how distortionary is the tax incentive with respect to the investor's choice among assets, how much new investment will it stimulate and how is the stimulus distributed among different types of firms.

¹⁰⁹ See ANALYSIS BY THE CONGRESSIONAL BUDGET OFFICE, *supra*. This table assumes a January 1, 1981 effective date.

¹¹⁰ SUMMARY OF THE COMMITTEE ON WAYS AND MEANS, *supra* note 103, at 23.

¹¹¹ See *supra* text accompanying notes 9 and 10.

¹¹² See Auerbach and Jorgenson, *supra* note 101, at 117.

First, it long has been recognized that virtually all taxes distort economic behavior.¹¹³ This reduction in economic efficiency resulting from taxation is referred to as the "deadweight loss" or "excess burden" of the tax system. While it may be inevitable that some efficiency will be sacrificed in order to raise revenue, not all taxes impose the same excess burden per dollar of revenue raised. Some tax structures are more efficient than others. The area of study called "optimal tax theory" seeks to characterize tax systems that are relatively efficient in the sense of raising a given amount of revenue with the least distortion in economic activity.¹¹⁴ While the results of such work are fairly complicated, certain basic rules do come out. First, it is usually more efficient to tax activities that are relatively unresponsive to price changes.¹¹⁵ For example, how high the overall tax burden on savings and investment ought to be, from an efficiency perspective, would depend on how responsive savings is to changes in the after-tax rate of return.¹¹⁶ Second, it is relatively inefficient to raise revenue through a distortion of production activity.¹¹⁷ Such a distortion would arise in the allocation of capital, for example, if different types of investment income were taxed at different rates. This differential taxation would cause a shift of investment into the more lightly taxed types of assets. The term "neutrality" is often used to describe a tax system that does not distort production efficiency.¹¹⁸ Of course, full neutrality with respect to the allocation of capital would call for comparable treatment of nonbusiness capital and business capital. Nonbusiness capital, which consists mostly of owner-occupied housing, currently receives very favorable treatment under the tax law. To the extent that taxes on capital are higher in the business than in the nonbusiness sector, any proposal which lowers business taxes, thus effecting a shift of capital from residential to non-residential uses, increases allocative efficiency.

An issue related to this concern for tax efficiency is how the tax treatment of assets is influenced by changes in the inflation rate. Under any capital recovery system where depreciation allowances are based on original cost, the

¹¹³ The only exceptions are "lump sum" taxes, such as head taxes, because they are levied on individuals without regard to any aspect of economic activity. Since the individual can do nothing to lessen the tax, he will not be induced to distort his behavior. Unfortunately, this "strength" is also what makes lump-sum taxes impractical.

¹¹⁴ See, e.g., Sandmo, *Optimal Taxation: An Introduction to the Literature*, 6 J. OF PUB. ECON., 37, 37-38 (1976).

¹¹⁵ *Id.* at 45-47.

¹¹⁶ The issues of how responsive savings is and how heavily it should be taxed is at present a hotly debated one in the area of Public Finance. See generally, J. PECHMAN, WHAT SHOULD BE TAXED: INCOME OR EXPENDITURE (1980) [hereinafter cited as PECHMAN]. Many have argued in favor of a cash-flow or "consumption" tax that would allow individuals a deduction from the income tax base for net saving. *Id.* at vii. Such a tax change would also involve either elimination of the corporate tax or an alternative adjustment that would effectively eliminate the tax for income from new investments. See *id.* at 239-49. There are, however, other arguments in favor of a consumption tax aside from those relating to efficiency. See *id.* at 102-09.

¹¹⁷ See Diamond and Mirrlees, *Optimal Taxation and Public Production: I*, 61 AM. ECON. REV. 8, 8-27 (1971).

¹¹⁸ See Auerbach, *Tax Neutrality and the Social Discount Rate*, 17 J. OF PUB. ECON., 355, 355-72 (1982).

effect of inflation is to lower the real value of future depreciation allowances. The allowances' nominal values remain unaffected, but they are worth less in terms of real purchasing power. Inflation thus may reduce economic efficiency for two reasons. First, it raises the overall tax burden on investment income to what might be an inefficiently high level. Second, its differential impact across different investments leads to production distortions.¹¹⁹

The second general line of inquiry into the efficiency of a given proposal is how much new investment will be generated by reductions in tax revenue. How much "bang per buck" (i.e., new investment attributable to incentive created) a tax reduction has depends on at least three factors. The first question, is how effective a tax reduction is at focusing on the behavior it seeks to encourage. In the context of analyzing the changes contained in ERTA, this ability to focus effectively depends on the treatment of old versus new assets. Plans that reduce the tax burden on income from existing assets are more costly because only part of the tax reduction goes toward encouraging new investment.¹²⁰ The second issue is how a tax investment incentive plan is phased in over time. Encouraging or discouraging investment today is possible through changes in the tax structure scheduled to occur in the near future. An example of this change in the tax structure over time is the phasing in under ACRS of the full depreciation deductions for personal property investments between 1981 and 1986.¹²¹ The final, and most general, question in determining how much investment will be generated by tax reductions concerns the responsiveness of investors to tax incentives. Such responsiveness depends on a number of factors, including the responsiveness of businesses to changes in the tax treatment of investment income as well as the responsiveness of savers to the net rate of return. The latter element is relevant because if a tax cut does stimulate investment, businesses will seek more funds in the capital market. As they do so, the price of funds — the interest rate — will be bid up. How high it will go depends on how responsive savers are to its increase. Empirical evidence on this savings responsiveness is weak.¹²² Evidence on the responsiveness of business investment to tax incentives suggests that previous changes in depreciation schedules and the investment tax credit have led to increased investment, although different views exist about the magnitudes involved.¹²³

¹¹⁹ See Auerbach, *Inflation and the Choice of Asset Life*, 87 J. OF POL. ECON. 621, 621-22 (1979).

¹²⁰ Indeed, it would be cheaper still to offer incentives only to that new investment that would not otherwise have occurred, but this alternative would be impossible to implement. A more sensible approach that has come up over the years is to apply the incentives only to the increment in investment over the average of investment in previous years. This approach is precisely the way in which the new tax credit for research and development has been structured.

¹²¹ See *supra* notes 43-48 and accompanying text.

¹²² For conflicting views of the responsiveness of savings to the rate of return, compare Boskin, *Taxation, Saving and the Rate of Interest*, 86 J. OF POL. ECON. S3 (1978) with PECHMAN, *supra* note 116, at 17-31.

¹²³ For a recent analysis, see R.S. CHIRINKO AND R. EISNER, THE EFFECTS OF TAX PARAMETERS ON THE INVESTMENT EQUATIONS IN MACROECONOMETRIC MODELS, OFFICE OF TAX ANALYSIS PAPER NO 47, U.S. DEPARTMENT OF THE TREASURY (January 1981).

A final area of inquiry relevant to determining how well a business tax incentive program will succeed in increasing productivity and welfare is how the plan treats similar assets purchased by different investors, particularly those with and without taxable income. Generally, benefits in the form of increased deductions and credits will be limited to businesses that can offset those benefits against taxable income. This limitation restricts the ability of firms without taxable income from taking advantage of the tax cut. Whether so limiting the advantage of a business tax incentive is economically desirable is open to question. On the one hand is the argument that full availability (via refundability, for example) encourages poorly managed companies to continue operation. On the other hand, profits as measured for tax purposes only vaguely resemble real economic earnings because depreciation allowances do not reflect economic depreciation. Further, the "bad management" argument cannot fairly be applied to new firms without any earnings history. Indeed, the indirectness and complication of the new "safe harbor" leasing included in ACRS seems to have been aimed in part at satisfying proponents on each side of this debate.

The foregoing discussion suggests that an effective investment incentive will provide a neutral stimulus, across different assets, that is insensitive to the inflation rate, and will focus this stimulus on new investment. Against this standard for a business tax investment incentive program, the program adopted by ERTA can be assessed.

V. THE ECONOMICS OF ACRS

Having set out the criteria relevant to our inquiry, we consider now the structure of ACRS. With respect to its investment stimulation component, ACRS limits the ability of investors to get any additional tax benefits for assets first put in service before January 1, 1981.¹²⁴ In this sense, it should produce a large "bang per buck" relative to other proposals that included a reduction in corporate taxes, since the latter would have reduced taxes even for those making no new investments. As indicated above, the anti-churning rules prevent a taxpayer from obtaining ACRS benefits on property the taxpayer put in service prior to 1981.¹²⁵ And while obtaining ACRS on used property through a transfer of ownership is possible,¹²⁶ the overall tax benefits of such transfers might be negative. A negative tax benefit might result from applying ACRS to used property because the prospective increase in depreciation allowances would be accompanied by an immediate recapture of earlier deductions.¹²⁷ While some cases in which a sale would generate net tax benefits are possible, such possibilities do not appear to be a significant problem.

¹²⁴ See *supra* notes 55-57 and accompanying text.

¹²⁵ See *supra* note 58 and accompanying text.

¹²⁶ See *supra* note 57 and accompanying text.

¹²⁷ The sale of the property would trigger the recapture of the depreciation deductions, I.R.C. § 47(a)(5) (West Supp. 1982). The overall tax benefits of the transaction would be negative if the amount of the recapture exceeds the present value of the stream of ACRS deductions,

The other part of the "bang per buck" question concerns the phase-in of ACRS for personal property. Because investments made in 1986, and 1985 to a lesser extent, would have received more favorable treatment than assets purchased in 1981 through 1984,¹²⁸ some investors possessing a degree of flexibility in the timing of their purchases might have waited until 1986 to invest in order to obtain the greater benefits not available to them. Such delays in purchasing would have lessened the expansionary effect of ACRS on the economy in the next four years. Whether this is good or bad from a macroeconomic perspective largely depends on the severity of the current recession and how expansionary the rest of the federal government's tax-expenditure program ultimately turns out to be.

Regarding the investment distortion criterion, a measurement of the distortions associated with ACRS requires the measurement of the burden imposed on different investments. Table 5 displays values, discounted at an after-tax rate of 12%, of depreciation allowances received by typical investments in the three, five and fifteen year classes.

Table 5

Present Value of Depreciation Allowances under ACRS
(per dollar invested)

Discount Rate = 12%

Asset Class	Year of Purchase		
	1981-1984	1985	1986
3 year ¹²⁹			
Present Value (PV)			
of Deductions	.8842	.9010	.9072
Investment Tax Credit	.1304	.1304	.1304
(ITC)/.46			
Total (A)	1.0147	1.0314	1.0376

which the transferee would be entitled to take as a result of his ownership of the property. For example, suppose a piece of equipment in the 5-year class was purchased for \$100, received the tax credit and now has a basis of zero and a potential sale price of \$40. If a sale occurred, the seller would pay taxes immediately on \$40 of income, while the purchaser could take deductions equal to \$40 over five years. If they were in the same tax bracket, the taxes paid immediately by the seller would exceed, in present value, the taxes avoided over the succeeding five years because the present value of the ACRS deduction the buyer would receive over the next five years would be less than the amount of tax which the seller would be required to pay immediately. Only to the limited extent that the investment tax credit could be taken again might this transaction be worthwhile. For structures, the tax on recapture would be lower because of the capital gains treatment of the gain over straight-line basis. See *supra* notes 74-75 and accompanying text.

¹²⁸ See *supra* notes 45-48 and accompanying text.

¹²⁹ Based on schedules reported in Table 1 *supra* at text accompanying note 42.

5 year¹³⁰

PV of Deductions	.7968	.8387	.8418
ITC/.46	.2174	.2174	.2174
Total (A)	1.0142	1.0561	1.0592

15 year¹³¹

PV of Deductions	.5515	.5515	.5515
ITC/.46	0	0	0
Total (A)	.5515	.5515	.5515

For the three and five year classes, the deduction equivalent in after-tax dollars to the investment credit (for a corporation in the top bracket) also is calculated to obtain the combined effect of investment related credits and deductions, labeled "A." These values rise over time for the personal property classes because of the phase-in of the schedule of depreciation allowances but exceed one even in 1981. There, the combination of depreciation deductions and the investment credit offers a greater tax shield than immediate expensing without the ITC, the alternative proposed by House Democrats in 1981.¹³² This outcome does not hold for most structures, which receive the present-value equivalent of about fifty-five cents in deductions per dollar invested.

A useful way of understanding these numbers is to ask what reduction in tax rate on the income from these investments the investor would require in exchange for giving up the credits and deductions of ACRS and replacing them with deductions which are consistent with economic depreciation. That is, what effective tax rate on true economic income is imposed by the combination of a statutory tax rate of 46% and investment tax credit and a rapid write-off. To derive this effective tax rate, we must know what the economic depreciation of assets actually is, and must make assumptions about the inflation rate and the real after-tax rate of return earned by corporations on their investments. Table 6 represents effective tax rate calculations for five representative types of investment in the three main recovery classes. For a real discount rate, we use 4%.¹³³ Estimates of declining-balance rates of economic depreciation are obtained from a recent U.S. Treasury study.¹³⁴ Effective tax rates for each asset are computed for hypothetical inflation rates of 6% and 8%.

¹³⁰ *Id.*

¹³¹ Based on 175% declining balance with a switchover to straight-line in year eight and purchase six months into the tax year. (See *supra* note 47 and accompanying text.)

¹³² See *supra* notes 103-07, 110, 112 and accompanying text.

¹³³ The use of this rate follows Auerbach and Jorgenson, *Inflation-Proof Depreciation of Assets*, *supra* note 101, at 114. It was chosen as a value representative of recent corporate experience.

¹³⁴ C. HULTEN AND F. WYKOFF, OFFICE OF TAX ANALYSIS, TAX AND ECONOMIC DEPRECIATION OF MACHINERY AND EQUIPMENT: A THEORETICAL AND EMPIRICAL ANALYSIS, 1979.

Table 6
Effective Tax Rates under ACRS¹³⁵

Asset Class	Recovery Period (years)	Economic Depreciation Rate ¹³⁶	ETR for inflation Rate =	
			6%	8%
Trucks, buses and trailers	3	.254		
1981-1984			-24.7%	-10.1%
1985			-40.5	-24.5
1986			-47.3	-30.8
Construction machinery	5	.172		
1981-1984			-17.0	-5.2
1985			-37.4	-24.0
1986			-39.1	-25.0
General Industrial Equipment	5	.122		
1981-1984			-23.5	-6.9
1985			-55.3	-33.9
1986			-58.2	-36.5
Industrial Buildings	15	.036	39.4	42.1
Commercial Buildings	15	.025	35.8	38.3

The most startling result in Table 6 perhaps is that a majority of the calculated effective tax rates are negative: investors who purchase assets in the three-year and five-year recovery classes would prefer ACRS to the abolition of corporation taxation.¹³⁷ This outcome is perfectly possible, and consistent with the results in Table 5, where such assets were found to have equivalent deductions and credits in excess of immediate write-off. In fact, these conditions are the same. As others have pointed out in the past, immediate write-off converts the corporate tax to a "partnership" where government bears an equal percentage of costs and receipts, with each "partner" earning the before-tax rate of return on investment. Hence, a system such as ACRS, in which the benefits given to some classes of assets are more generous than immediate

¹³⁵ Derived according to formula $t = \tau / [1 + (\frac{1-\tau}{1-A}) (A - \frac{\delta}{r+\delta})]$ where τ (the corporate tax rate) = .46, r (the expected after-tax real rate of return) = .04, A is as defined in Table 5 and δ is the economic depreciation rate. Further details provided by the author upon request.

¹³⁶ Estimated rate of declining-balance economic depreciation.

¹³⁷ Similar results may be found in ANNUAL REPORT OF THE U.S. COUNCIL OF ECONOMIC ADVISORS, at 122-25 (1982).

write-off, is equivalent to government bearing a greater fraction of the initial cost than it receives of the future flows: it is *subsidizing* the project. Moreover, these calculations assume no debt is used to finance the project. Since interest payments are tax deductible,¹³⁸ these additional tax savings provided by the interest deduction would make the effective tax rates more negative for projects financed in part by borrowing.

These negative tax rates differ across types of personal property, but the key difference is between personal property and real property. At an inflation rate of 6%, the effective tax rates on industrial buildings and general industrial equipment would differ by almost 98 percentage points after 1985. This poses an enormous distortion in the allocation of industrial capital.

Besides differing by asset class, the effective tax rates also depend on the inflation rate that prevails, because depreciation allowances received in future years are eroded to the extent that prices rise between the date of purchase and the date of the allowances.¹³⁹ These rates rise more for the personal property classes, though they are still negative at an inflation rate of 8%. In fact, it would take a long-run inflation rate of approximately 14% to bring the post-1985 effective tax rate out of the negative range.

These effective tax rates, especially those for equipment, are substantially lower than those that would have applied had any of the alternatives to ACRS discussed above been enacted. For example, under "2-4-7-10," the effective tax rates at 8% inflation would have been +0.50% for trucks, buses and trailers, +0.65% for construction machinery and +0.85% for general industrial equipment¹⁴⁰ — virtually the same as in the House expensing proposal included in the Tax Incentive Act of 1981.¹⁴¹ The Carter Administration proposal specifically precluded the total tax benefits for any asset from exceeding those of expensing.¹⁴² Thus, that proposal would have produced effective tax rates on personal property similar to those of 2-4-7-10 and the House proposal. Under the version of First-Year System which included no investment tax credit, the effective tax rate would have been 46% for all assets.¹⁴³

Moreover, the effective tax rates under ACRS will be more sensitive to inflation than would have been true under either the TIA or First Year proposals. Since each of the latter two plans offered a deduction only in the year of

¹³⁸ I.R.C. § 163(a) (1976).

¹³⁹ An additional and offsetting effect of inflation would be present if debt finance were used, for the deductibility of nominal rather than real interest payments lower the real after-tax interest rate corresponding to a given real before-tax rate. For further discussions, see Auerbach, *Inflation and the Tax Treatment of Firm Behavior*, 71 AM. ECON. REV. 419, 419-23 (1981).

¹⁴⁰ Calculations assume the first asset class would have received a 2.5% tax credit and 200% (double) declining balance over two years, while the other two would have received a 6% credit and use 200% declining balance over four years.

¹⁴¹ See SUMMARY OF THE COMMITTEE ON WAYS AND MEANS, *supra* note 103.

¹⁴² See *supra* notes 98-100 and accompanying text.

¹⁴³ See Auerbach and Jorgenson, *Inflation-Proof Depreciation of Assets*, *supra* note 101, at

purchase,¹⁴⁴ the value of such deductions would not have been influenced by fluctuations in the rate of inflation.

ACRS, therefore, constitutes a substantial stimulus to investment, but one which is very distortionary in its distribution across different assets and sensitive to the rate of inflation. Alternative proposals would have been less generous but also less distortionary. The incentives offered by two of the alternatives — the TIA and FYCRS proposals — would have been less sensitive to the inflation rate, because their structures provide the entire incentive in the year of purchase.

Aside from the distortion caused by such large differences in tax rates among investments competing for the same funds, it is not necessarily efficient to tax corporate capital income at a rate near or below zero, in the aggregate.¹⁴⁵ Given that such rates were being set, however, a serious problem of coverage would have arisen had not something like the safe-harbor for leasing been created at the same time. Indeed, this problem would have become more acute over the years, as greater fractions of the assets owned by companies fell under ACRS. The tax losses generated by even profitable investments would, for a number of companies, outweigh taxable income generated by real property, pre-1981 depreciable assets and non-depreciable assets. Indeed, the revenue cost estimates of ACRS cited in the introduction¹⁴⁶ are so large a part of total corporate tax collections that detailed calculations need not be made to recognize the problem. ERTA's safe-harbor leasing rules make it possible to structure a transaction so that a "lessor" makes a single, initial payment to a "lessee," and obtains in return the investment tax credit and depreciation deductions on the designated property. No more contact between the two parties is necessary. The exact details of the agreement, however, will determine how much the lessor is willing to pay for the credits and deductions. The following analysis explains this point and gives a numerical example of one such hypothetical transaction.¹⁴⁷

Another issue that arises in the discussion of leasing is the question of whether it should be available to *all* firms possessing tax losses. Imagine two types of firms with current net operating losses and without the availability of a carry back against previous taxable income. Type I, the "high growth" firm, has "losses" primarily because the amount of investment it is undertaking currently produces large deductions which offset any current income. It will have profits in future years once the current investments have been written off. The Type II firm, perhaps one in financial distress, already has very large tax losses

¹⁴⁴ See *supra* notes 101, 104 and accompanying text.

¹⁴⁵ Naturally, important distributional issues are involved in such a large cut in capital income taxes. Since, however, the main focus here is on ACRS as a reduction in capital income taxes, such questions are not included within the scope of this article.

¹⁴⁶ See *supra* notes 9-11 and accompanying text.

¹⁴⁷ Under TEFRA, the rules with respect to safe-harbor leasing have been substantially tightened, so that these calculations that follow will overstate the tax benefits that can now be transferred through safe-harbor leasing.

to carry forward. Even if its *current* investments generate a taxable profit, this company will be able to offset such profit using its net operating loss carry forwards.¹⁴⁸ Throughout the foreseeable future, it will be essentially non-taxable. Without leasing, both types of firms would be required to carry forward those tax benefits associated with the ITC and depreciation deductions. Even if they generate taxable income in the future which the losses can offset, the companies would receive a lower present discounted value from these tax shields. In the case of Type I firms, this would put them at a competitive disadvantage with firms having current taxable income: they would have to pay taxes on their gross income when earned, but carry forward their deductions at the beginning. Leasing would put them on a par with taxable firms. Given that for the foreseeable future Type II firms expect to pay no tax on their earnings, should they, too, be allowed deductions, as leasing would provide indirectly? The apparent answer is no, that this would give them a tax advantage over the other types of firms. The real answer to this problem, however, is more complicated because of the presence of the ability to deduct interest.¹⁴⁹

Under a typical leasing arrangement, the lessee purchases (or already has purchased) the property in question. The lessor "purchases" it from the lessee using up to 90% borrowed money,¹⁵⁰ which it can be assumed is lent by the lessee. Over the period of the lease, the lessor gets the opportunity to take the applicable investment tax credit and depreciation deductions. The lessor makes payments of principal and interest to the lessee on the outstanding loan, while the lessee makes payments on the lease. These payments may be arranged to equal each other, so that no money need change hands when the "payments" are made. At the end of the term of the lease, the lessor pays off the balance of the loan and the lessee "repurchases" the equipment at a price specified in the lease. By arranging for principal and interest payments to equal lease payments, and for the repurchase price to equal the terminal loan balance, the parties to the lease need exchange money only upon the initial purchase. Moreover, to avoid recapture of depreciation allowances, they can arrange for the repurchase price to be nearly zero.

Under such an agreement, the lessor would have to pay taxes over the course of the lease on the difference between lease payments made by the lessee and interest payments made to the lessee. Similarly, the lessee, if taxable in future years, would get the benefit of tax deductions of equal size. Thus, the initial amount transferred from lessor to lessee constitutes only part of the "payment" the lessor makes to buy the lessee's depreciation deductions and tax credit.

Table 7 presents the initial payment a potential lessor with discount rate p would be willing to make during the period of 1981-1984 for a lease of length T ,

¹⁴⁸ See I.R.C. § 172 (West Supp. 1967, 1982).

¹⁴⁹ For further discussion, see Warren and Auerbach, *Transferability of Tax Incentives and the Fiction of Safe Harbor Leasing*, 95 HARV. L. REV. 1752 (1982). See *infra* notes 234-240 and accompanying text.

¹⁵⁰ See *supra* note 73 and accompanying text.

with matching level annual payments (P), a zero repurchase price and a loan interest rate of i .

Table 7
Lease Characteristics
(interest rate = 12%; asset price = 1 dollar)

Recovery Class	Discount Rate(ρ)	Lease Term (T)	Value of Deductions ¹⁵¹ plus Credit (A)	Initial ¹⁵² Payment (x)	Lease ¹⁵³ Payments (P)
3 years	12%	3	.467	.160	.349
	10	3	.475	.154	.352
	6.48	3	.489	.142	.357
	12	5	.467	.212	.218
	10	5	.475	.202	.221
	6.48	5	.489	.180	.227
5 years	12	5	.467	.212	.218
	10	5	.479	.209	.219
	6.48	5	.504	.205	.220
	12	10	.467	.303	.123
	10	10	.479	.297	.124
	6.48	10	.504	.279	.128

The main result of Table 7 is that although the initial payment, x , is far less than the value of credits and deductions to the lessor, τA , it is not very sensitive to the discount rate used. For example, a lessor with a discount rate of

¹⁵¹ Based on recovery schedules for 1981-1984 listed in Table 5 *supra* at text accompanying notes 129-131.

¹⁵² Based on the following formula:
 $x = \tau A - B(1 - \tau A)$, where $\tau = .46$ and

$$B = \frac{1}{(i - \rho)(1 + i)^T - 1} - 1, \text{ if } \rho \neq i$$

$$\frac{\tau i \frac{1 + i}{1 + \rho} T - 1}{\tau i T}, \text{ if } \rho = i$$

(Details of derivatives of B available from the author upon request.)

¹⁵³ Based on the formula:

$$P = \frac{(1 - x)(1 + i)^T}{(1 + i)^T - 1}$$

(Details of derivatives of P available from the author upon request.)

12% would pay 21.2 cents for a five-year lease per dollar of assets in the five-year recovery class; this figure would be 20.5 cents if the lessor had a discount rate of 6.48%.¹⁵⁴ A fully worked out example of one of these transactions appears in Table 8, for a five-year lease of a five-year asset and a 12% discount rate.¹⁵⁵

Table 8
A Sample Leasing Transaction

Year	1982	1983	1984	1985	1986	1987
1. Purchase	100.00	0	0	0	0	0
2. Loan	78.85	0	0	0	0	0
3. Loan						
Repayments	0	12.42	13.90	15.57	17.43	19.53
4. Loan Balance	78.85	66.43	52.53	36.96	19.53	0
5. Interest						
Payments	0	9.45	7.97	6.30	4.44	2.34
6. Lease						
Receipts	0	21.87	21.87	21.87	21.87	21.87
7. Depreciation						
Allowances	15	22	21	21	21	0
8. Investment						
Credit	10	0	0	0	0	0
9. Tax ¹⁵⁶	-16.90	-4.41	-3.27	-2.50	-1.64	8.98
10. Cash Flow ¹⁵⁷	-4.25	4.41	3.27	2.50	1.64	-8.98

Present Value (discounted at 12 percent) = .02 dollars

If a fully taxable firm leased an asset from one in similar circumstances, the tax effects of such a transaction would cancel, with respect to both the ITC and depreciation deductions and the taxes on lease payments net of interest payments. Should the lessee be a Type I firm with no taxable income in the year of the lease but taxable income thereafter, the lease will allow the full tax benefits of ACRS to be obtained, but the taxes on lease payments net of interest payments in future years would still cancel. Thus, the lessee would be enabled to gain a position similar to the fully-taxable firm. If, however, the lessee is a non-taxable Type II firm, a different result obtains. The Type II firm gets the full value of the asset's depreciation deductions and investment

¹⁵⁴ The value of 6.48% is chosen for the example because it would be the after-tax discount for a firm borrowing at 12%.

¹⁵⁵ For another example, see Sheffrin, *The Simple Economics of the Liberalized Leasing Provisions*, 10, University of California-Davis (1981).

¹⁵⁶ Tax = .46 × (6-5-7) = 8.

¹⁵⁷ Cash Flow = (2 - 1) + (6-4-5) - 9 = 2-1-9

tax credit but pays no taxes on the income the asset generates.¹⁵⁸ This appears to place it in a favored position relative to the other firms.

There are, however, two extenuating factors. First, the non-taxable lessee cannot take advantage of the deductions of lease payments made net of interest received from the lessor, while the lessor must include the difference in income. Thus, the lessee receives only the initial "down payment" on his loan to the lessor in exchange for his ACRS benefits. Naturally, two firms in this situation might attempt to mitigate this effect by lengthening the term of the lease substantially, and in so doing make the loan repayments smaller. Under the safe harbor provisions, however, the term of a lease cannot exceed the greater of 150% of the asset's ADR midpoint life and 90% of its "useful life" as defined under section 167 of the Internal Revenue Code.¹⁵⁹ In addition, to the extent that the Type II firm finances its investment with borrowing of its own, it currently cannot deduct the interest payments while a firm with taxable profits can take such interest deductions.¹⁶⁰ Together, these two factors will probably not give the advantage to the taxable firm, but they will lessen the disadvantage from which it suffers relative to the non-taxable firm.

Of course, the real difference between such a sale-leaseback agreement and the outright sale of credits and deductions is the risk undertaken by the lessor that the lessee will enter bankruptcy. What the position of the lessor would be in such a case is beyond the scope of this article.

CONCLUSIONS

The Accelerated Cost Recovery System and related business incentive provisions included in the Economic Recovery Tax Act of 1981 reduces greatly the tax burden on business investment in the U.S. undertaken after January 1, 1981, to the extent that it will largely offset the corporation income tax in future years. Its effects are quite different, however, from those that would obtain on the simple abolition of the corporate income tax. Instead of merely being zero, the effective corporate tax rate under ERTA will vary widely across assets and will be negative for many. In addition, the opportunity to deduct interest payments will make the effective tax rates on debt-financed investments still lower.

Corporate tax collections, however, will not be eliminated entirely. Rather, the fact that many firms will continue — at least for a time — to derive a large portion of their income from sources other than depreciable personal property purchased after January 1, 1981, will keep the revenues positive. Those firms not deriving income from these sources will be able to sell part of their losses to those that are — through safe-harbor leasing provisions accom-

¹⁵⁸ By our hypothesis, a Type II firm will have losses which will negate any income generated by the asset throughout the foreseeable future.

¹⁵⁹ See *supra* note 73.

¹⁶⁰ See I.R.C. § 163(a) (1976).

panying ACRS. Thus, the smallness of corporate tax collections will mask what is happening: some investments, being taxed effectively at substantially negative rates, being used to shelter others that face positive tax rates.

Regardless of whether reductions in capital income taxes were in general a good idea, ACRS appears to have accomplished this objective in a rather complicated and distortionary way. Further analysis will be necessary to say whether this conclusion is altered by the Tax Equity and Fiscal Responsibility Act of 1982.

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