

[JOINT COMMITTEE PRINT]

**ANALYSIS OF PROPOSALS  
FOR  
DEPRECIATION AND INVESTMENT  
TAX CREDIT REVISIONS**

**PART I: OVERVIEW**

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PREPARED FOR THE USE OF THE  
COMMITTEE ON WAYS AND MEANS  
U.S. HOUSE OF REPRESENTATIVES  
BY THE STAFF OF THE  
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## INTRODUCTION

This pamphlet has been prepared for the Committee on Ways and Means for its markup of the Administration's proposed depreciation and investment tax credit revisions (Accelerated Cost Recovery System) and other related capital cost recovery proposals. The Administration's proposal is embodied in H.R. 2400 (introduced by Mr. Conable and others).

Part I of the pamphlet is a brief overview of present law relating to depreciation, other forms of capital cost recovery, and the investment tax credit. Part II is a brief summary of the Administration's proposal (in H.R. 2400) and the principal alternatives to it. Part III presents an economic analysis of various methods of capital cost recovery. The Appendix is a comparison of depreciation and other investment incentives in selected foreign countries.

A subsequent pamphlet will discuss in detail present law on depreciation and the investment tax credit, the specifics of the Administration proposal and certain alternative proposals, and a number of specific issues that arise in designing a capital cost recovery proposal.



## I. OVERVIEW OF PRESENT LAW

In an income tax, it is necessary to make provision for deducting (or "recovering") capital costs; that is, costs which are incurred in one year but which help to generate income in future years. Present law contains a variety of methods of capital cost recovery for different kinds of assets. The most important of these is "depreciation," in which the deduction for capital costs is spread over what is intended to be the "useful life" of the asset in order to match income with expenses incurred to produce the income. Under "amortization," the write-off occurs over some fixed, arbitrary period of time that is not related to the asset's useful life. Other methods of capital cost recovery include "cost depletion," which is used for many costs of acquiring natural resources, and "expensing," which is used for intangible drilling costs and certain research and development costs. A provision of present law which performs a similar function as capital cost recovery is the investment tax credit.

### Depreciation

Essentially different systems apply to "personal" and to "real" property. Real property is real estate, but since land is not depreciable, depreciation rules for real property apply mainly to buildings. Personal property is all other depreciable property, most of which is machinery and equipment.

#### *Personal property*

The two main determinants of depreciation deductions are the number of years over which depreciation deductions are spread (the useful life) and the method by which the deductions are spread over that period.

*Useful life.*—The principal method now used to determine useful lives for personal property is the Asset Depreciation Range (ADR) system. Assets eligible for ADR are grouped into 132 classes, and guideline lives for each class are determined by the Treasury. Taxpayers may claim useful lives up to 20 percent longer or shorter than the ADR guidelines. For assets not eligible for ADR and for taxpayers who do not elect ADR, useful lives are determined according to the "facts and circumstances" pertaining to each asset. Under ADR or facts and circumstances, useful lives are based on estimates of the number of years during which the property is expected to be in service, not on estimates of the rate of decline in the economic value of the property.

*Method.*—Taxpayers are allowed to use the straight-line method of depreciation, in which deductions are spread evenly over the useful life, for all assets. However, for most assets they can elect one of several accelerated methods, in which a disproportionate share of the deductions are taken early in the useful life. (Because a dollar today is worth more than a dollar in the future, taxpayers will generally prefer to accelerate depreciation deductions.) The most generous accelerated

methods are the double-declining balance (DDB) method and the sum-of-the-years-digits (SYD) method.<sup>1</sup>

### **Real property**

*Useful life.*—ADR does not apply to most kinds of real property; therefore, useful lives of most real property are based on the facts and circumstances pertaining to each individual building. The IRS has published guideline lives which will not be challenged on audit, but most taxpayers claim shorter lives than the guidelines. Taxpayers may also claim different useful lives for the building shell and for the various components of the structure (elevators, plumbing, etc.). As with personal property, useful lives for real estate are based on physical, not economic factors.

*Method.*—Allowable methods of depreciation for real property depend on the use of the property. New housing receives the most generous treatment, which is double declining balance depreciation. New nonresidential buildings are allowed 150-percent declining balance (150 percent of the straight-line rate). Used residential property is allowed 125-percent declining balance depreciation. All other used buildings are limited to straight-line depreciation.

*Recapture.*—When real property is sold, a portion of the gain is treated as ordinary income. This “recapture” applies to the cumulative excess of accelerated depreciation over the straight-line depreciation which would have been allowable during the period in which the property was held by the taxpayer. Any remaining gain is treated as a capital gain. This recapture rule is more generous than the rule applying to personal property, in which all prior depreciation is recaptured as ordinary income.

### **Investment tax credit**

For most kinds of tangible personal property, taxpayers may claim an investment tax credit (ITC) in addition to their depreciation deductions. The ITC is generally 10 percent of the cost of the asset, but this rate is reduced to  $3\frac{1}{3}$  percent for assets depreciated over a 3- or 4-year life or  $6\frac{2}{3}$  percent for assets depreciated over a 5- or 6-year life. The ITC also applies to costs of rehabilitating old industrial and commercial buildings.

### **Other methods of capital cost recovery**

In addition to the basic depreciation provisions, the law contains a wide variety of more specialized capital cost recovery provisions. These include:

*Five-year amortization.*—Special 5-year amortization applies to a series of investments, including rehabilitation expenditures for low-income housing and certified historic structures, pollution control expenditures, and business startup costs.

<sup>1</sup> Under DDB, depreciation is taken at twice the straight-line rate on the remaining basis of the asset. For example, for an asset with a 5-year life, the first year's deduction is 40 percent of the cost, the second year's deduction is 24 percent (40 percent of 60 percent), and so forth. Taxpayers using DDB typically switch to straight-line or SYD at some point in the useful life.

Under SYD, the taxpayer adds up the whole numbers in the useful life (e.g.,  $1+2+3+4+5=15$ ). The first year's deduction is a percentage of the cost equal to the useful life divided by that sum ( $5/15$ ), the second year's percentage deduction is the next lower digit divided by the sum of ( $4/15$ ), and so forth.

*Expensing.*—In some cases, capital costs can be deducted in the year incurred. Such “expensing” applies to intangible drilling costs for oil, gas and geothermal wells, certain research and development expenditures, injectants used in tertiary oil recovery, and mine exploration and development costs.

*Depletion.*—Costs of acquiring minerals are recovered through the depletion deduction. Under cost depletion, the actual costs incurred are deducted as the mineral deposit is depleted. Under percentage depletion, where applicable, the depletion deduction equals a statutory percentage of the selling price of the mineral, so that percentage depletion deductions may exceed actual costs incurred.

## II. OVERVIEW OF PRINCIPAL ALTERNATIVE PROPOSALS

### A. Administration Proposal

The Administration has proposed, as a complete revision of the federal income tax treatment of depreciation and the investment tax credit, the Accelerated Cost Recovery System (ACRS). These proposals are embodied in H.R. 2400 (sponsored by Mr. Conable and others).

The proposal would be phased in over five years.

#### *Personal property*

The Administration proposes to group tangible personal property into three asset classes to be depreciated over "recovery periods" of 10, 5 and 3 years. The 10-year class would include long-lived public utility property. The 3-year class would include cars and light trucks and equipment used in research and development. The 5-year class would include all other tangible personal property. An accelerated method of depreciation, approximately equivalent to the most accelerated methods allowed under present law, would be prescribed for each class.

The investment tax credit would be 6 percent for the 3-year class and 10-percent for the 5- and 10-year classes.

#### *Real property*

In place of the present "facts and circumstances" approach to determining useful lives of real property and the present accelerated methods of depreciation, the Administration proposes to establish three classes of real property, corresponding to recovery periods of 18, 15 and 10 years.

Housing would generally be depreciated over 18 years using the straight-line method. However, low-income housing would be depreciated over 15 years using the straight-line method. The 15-year class would also include nonresidential real estate not in the 10-year class. The 10-year class would include owner-user industrial structures and wholesale and retail distribution facilities. Unlike the 18- and 15-year classes, the 10-year class would have an accelerated method of depreciation—the same method used for the 10-year class of personal property.

For the 18- and 15-year classes, the entire gain upon sale would be treated as a capital gain. However, for the 10-year class all depreciation allowable prior to the sale would be recaptured as ordinary income (the same rule which applies to personal property).

### B. 1980 Senate Finance Committee Bill

#### *Personal property*

The Simplified Cost Recovery System (also called "2-4-7-10") was approved by the Senate Finance Committee last year (and was em-

bodied in the Finance Committee amendment to H.R. 5829—96th Congress). It would establish an open-ended account system that would apply in lieu of present methods to the depreciation of most tangible personal property. Public utility property, however, would continue to be depreciated under present rules, except that the ADR variance for it would be increased from 20 percent to 30 percent. The system would have been fully effective on January 1, 1981.

Tangible personal property would be classified into four accounts, representing recovery periods of 2, 4, 7, and 10 years. Upon placing an asset in service, a taxpayer would add its cost to the appropriate account. Unlike present law, there would not be separate "vintage accounts" for each separate year in which the taxpayer makes investments. Instead there would be up to four permanent "open-ended" accounts for depreciable personal property. When an asset is sold, no gain or loss would be recognized. Instead, the balance of the appropriate open-ended account would be reduced by the amount realized from the sale and future years' depreciation deductions would be reduced correspondingly.

A declining-balance method (200 percent, 150 percent, or 100 percent, at the taxpayer's election) would be used to compute each year's depreciation deduction for all assets within a particular open-ended account. The deduction for a particular year would be computed by multiplying the ending balance (unrecovered costs) in the account by a percentage which equals the declining balance percentage divided by the number of years in the recovery period. For example, for an asset in the 10-year class, the annual recovery percentage could be either 20 percent, 15 percent or 10 percent. The amount of the allowable deduction would then be subtracted from the account to determine the opening balance for the following year.

In general, property would be assigned to an account which has a recovery period that is at least 40 percent shorter than the present ADR guideline period for that property, according to the following schedule:

<i>ADR guideline period:</i>	<i>Recovery period (years)</i>
6.5 years or less-----	2
7.0 years to 11.5 years-----	4
12.0 years to 16.5 years-----	7
More than 16.5 years-----	10

The regular investment tax credit would be 2.5 percent for assets in a 2-year account, 6 per cent for assets in a 4-year account and 10 percent for assets in a 7-year or 10-year account.

A taxpayer would be allowed to take an immediate deduction for the first \$25,000 of expenditures each year for tangible personal property without an investment tax credit.

### ***Real property***

The Finance Committee bill would provide several new elective approaches to the depreciation of real property, without eliminating present methods. First, a taxpayer could elect to depreciate structures over a 20-year period using the straight-line method. Second, a taxpayer could elect to depreciate low-income rental housing over a 15-year period using the straight-line method. Third, certain owner-

occupied business structures could be depreciated over a 15-year period using the 150-percent declining balance method, in which case the recapture rules currently applicable to depreciable personal property would apply. These 15-year and 20-year lives would be audit-proof.

### C. Capital Cost Recovery Act of 1981 ("10-5-3")

For most depreciable assets, the Capital Cost Recovery Act of 1981 (H.R. 1053) would replace existing depreciation rules with a system very similar to the Administration proposal. Unlike the Administration proposal, this bill would place all real property, except for residential real property, in the 10-year class. Also, the 3-year class would be limited to up to \$100,000 of investment in cars and light trucks.

### D. First-Year Capital Cost Recovery System

The First-Year Capital Cost Recovery System (also called the Jorgenson/Auerbach plan) is embodied in H.R. 3443 (sponsored by Mr. Shannon and others). H.R. 3443 is structured to produce a 15-percent effective tax rate for nonutility equipment. (The concept of "effective tax rate" is defined below.) Other versions of the first-year system have been structured to produce a 46-percent effective tax rate.

Under the first-year system, the recovery allowance for the cost of an asset covered by the system would consist of a depreciation deduction only. There would be no regular investment tax credit as the equivalent of this credit is built into the first-year allowance. The entire deduction would be allowable in the taxable year in which the asset is placed in service.

Under the proposal, depreciable assets would be grouped into four classes and a first-year deduction would be established for each class.

The four classes and the first-year allowances would be as follows:

<i>ADR guideline period:</i>	<i>First-year allowance per \$100 of investment</i>
Less than 4.0-----	\$98.5
4.0 to 8.0-----	97.3
8.5 to 14.0-----	94.8
Over 14.0-----	92.7

The amount of the first-year deduction per \$1 of investment would be relatively large for assets, such as automobiles, which lose their real value rapidly and relatively small for assets, such as ships which lose their real value slowly. For no type of asset would the first-year deduction per \$1 of investment be as great as \$1, since no type of depreciable asset typically loses its entire value in just one year.

The first-year system would apply to both new and used assets. When an asset is resold, the buyer would be allowed a first-year deduction based on the resale price and the seller's ordinary income would be increased by the amount of this deduction.

Under H.R. 3443, the first-year system would not apply to structures or to long-lived public utility property. Also, there would be immediate expensing for the first \$25,000 of investment. The system would be phased in over a 10-year period.

The first-year capital cost recovery system is also embodied in a proposal made by Mr. Heftel. Under this proposal, there would be three classes of personal property with first year deductions of 90 cents, 95 cents or one dollar per \$1 of investment. This system would be phased in over a five-year period.

### E. Expensing

Under a system of immediate expensing, a taxpayer would be allowed to deduct the entire cost of depreciable property, whatever its useful life may be, in the year in which the property is placed in service. There would be no regular investment tax credit. This is the method of capital cost recovery now allowed for intangible drilling costs and research and development expenditures.

A result approximately equivalent to immediate expensing could be reached in certain circumstances under a capital cost recovery system which is not organized on the principle of expensing but which does include an investment tax credit. A 10-percent investment credit can be viewed as a deduction of 21.7 cents per \$1 of investment for a taxpayer whose statutory tax rate is 46 percent, since both a 10-cent credit and a 21.7-cent deduction reduce tax liability by 10 cents (46 percent of 21.7 equals 10). If the taxpayer's investment qualifies for this credit and the present value of depreciation deductions amounts to 78.3 cents per dollar invested, then the present value of the aggregate of the capital cost allowances available with respect to the asset would be one dollar—equivalent to expensing.

It would be possible to allow or require expensing for a percentage of the taxpayer's investment or for a limited amount (e.g., \$25,000) of investment each year, so that many very small businesses could avoid depreciation computations altogether for tax purposes.

### F. Modifications of "2-4-7-10"

A capital cost recovery system which utilizes open-ended accounts could be structured to lead to different results than the Finance Committee bill by altering the number of recovery accounts, the length of the recovery periods, the assignment of assets to recovery accounts and the investment tax credit percentage which applies to property in an account.

For example, an open-ended accounts system could be devised which would operate like 2-4-7-10, but which would have fewer asset classes and more accelerated cost recovery, and would be more nearly neutral across different classes of assets.

### G. Indexing of Depreciable Assets

Under an indexed system, the basis of a depreciable asset would be increased at the rate of inflation. Due to this adjustment, depreciation deductions over the life of the asset would increase with the rate of inflation, so their present value would not be affected by that inflation. Protection against inflation would also exist under a system—such as the Jorgenson/Auerbach proposal or immediate expensing—which allows a single, first-year depreciation deduction because under these systems the full depreciation deduction would be claimed before inflation has had a chance to erode its real value.

### III. ECONOMIC ANALYSIS

#### A. General Principles

Under a comprehensive income tax, income received in connection with the ownership of property (income from capital) would be treated the same as such other kinds of income as wages and salaries. Discussions of tax policy in the United States have traditionally accepted comprehensive income taxation as the "ideal" tax base or "organizing principle." An alternative would be to tax income from capital more leniently than other kinds of income, such as by including only a fraction of income from capital in the tax base. This could be carried all the way to exempting income from capital entirely. For example the social security tax applies to wages, salaries and self-employment income, but not to investment income. A third possibility would be to tax only that part of income which is consumed. That would be equivalent to an income tax with a deduction for saving. Such a consumption tax could be structured either as a progressive direct tax or as a flat-rate indirect sales or value-added tax. Because each of these taxes involves a different method of capital cost recovery, it is useful to start a discussion of capital cost recovery by distinguishing among them.

#### *Income vs. consumption taxes*

In academic circles, there is now a debate over whether consumption would be a better tax base for a system of direct taxation than income. Essentially, the advocates of replacing the income tax with a progressive personal consumption tax make three arguments: (1) that taxation of income from capital discourages saving and investment and encourages immediate consumption relative to future consumption, (2) that consumption taxation is fairer than income taxation, and (3) that the failure of the present system to achieve a comprehensive income tax base causes inequities and distortions which could be eliminated by switching to a consumption tax.

The advocates of income taxation make the arguments (1) that income is a better measure of ability to pay taxes than consumption, (2) that in practice a consumption tax would have as many flaws and distortions as the present income tax, (3) that the smaller incentive to save under an income tax does not, in practice, reduce saving significantly, and (4) that the higher tax rates which would be necessary if the tax base were narrowed by excluding savings would have an undesirable effect on economic efficiency. Advocates of the income tax also tend to be more optimistic about the possibilities for income tax reform.

The concern over capital formation which has been expressed in recent years suggests that there is considerable interest in moving the income taxes—individual and corporate—more in the direction of consumption taxes or at least towards lower tax rates on income from

capital. A desire to move the tax system in this direction has certain implications for capital cost recovery, and also for the treatment of borrowing and lending.

### ***Implications for capital cost recovery***

Under each of the three alternative tax bases discussed above (income, consumption and personal services income), a different type of depreciation is appropriate. Comprehensive income taxation uses what is called "economic depreciation." Consumption taxation uses "expensing." Exempting income from capital, of course, would do away with the need for any capital cost recovery provisions.

*Economic depreciation.*—In a system of comprehensive income taxation, the proper method of depreciation would require allowing the taxpayer a depreciation deduction equal to the decline in the value of the asset during the taxable year. This decline in value could occur because of either physical deterioration or economic obsolescence. Studies indicate that, for a typical asset, the decline in value over most of its life occurs according to a declining balance pattern, but that the rate of such economic depreciation varies considerably from one type of asset to another.

*Inflation.*—Inflation can complicate the measurement of depreciation. When costs are incurred in one year and the corresponding depreciation deductions are taken in the future after there has been inflation, the purchasing power represented by the deductions will be less than the purchasing power represented by the money used to acquire the asset, and taxable income will be larger than the taxpayer's "economic income," defined as the increase in his command over goods and services during the year. Thus, the proper determination of economic depreciation requires indexing depreciation deductions for whatever inflation occurs between the time the asset is acquired and the time the deductions are claimed. Alternatively, there could be an acceleration of depreciation deductions or an investment tax credit sufficient to provide the same benefit as indexing under some assumed inflation rate.

*Expensing.*—In a consumption tax, the taxpayer would get a current deduction for his purchases of all assets (and include in the tax case proceeds from sales of assets). In the case of depreciable assets, this is the "expensing" method of capital cost recovery now used for intangible drilling costs and research and development expenditures—deducting the full cost of the asset in the year incurred. In a sense, it can be said that the present treatment of these costs follows consumption tax principles.

### ***Implications for treatment of borrowing***

The different tax bases also imply radically different treatment of debt. Under a comprehensive income tax, taxpayers would pay tax on interest income only to the extent that the interest income was more than enough to compensate for the effect of inflation in eroding away the real value of the loan. Conversely, borrowers would only deduct interest in excess of that necessary to compensate for inflation. Under a consumption tax, borrowing would be treated on a cash flow basis; that is, taxpayers would include in income the proceeds from all borrowing and would claim a deduction for all interest and debt repayments.

## *Correspondence between consumption taxation and exempting income from capital*

In terms of their impact on tax burdens and on saving and investment incentives, there is a close correspondence between a consumption tax and an income tax which simply exempts income from capital (a payroll tax or tax on personal services income). This can be illustrated with a simple example. Consider a person who earns \$100, invests his entire after-tax income in a machine which is productive for one year and earns a 10-percent rate of return, and consumes the after-tax proceeds one year later. With a 50-percent tax on personal services income, the after-tax income will be \$50, which will earn a \$5 return (which, by assumption, is not subject to tax), and he will be able to consume \$55 in the second year. If instead there were a 50-percent consumption tax, there would be no tax in the first year because all the income is invested in the machine and offset by the current deduction for the cost of the machine; the taxpayer would receive \$10; and the tax on \$110 in the second year would be \$55, leaving \$55 for consumption. Thus, a consumption tax and an income tax which exempts income from capital impose the same burden on the taxpayer in terms of the extent to which they reduce his ultimate consumption. The difference is in the timing of the tax collections: with a consumption tax, the tax is collected later than with an income tax, but the present value of the tax collected is the same. (At a 10-percent interest rate, the present value of \$55 one year from now is \$50.)<sup>1</sup>

In contrast, with a comprehensive income tax, the tax would be \$50 in the first year and an additional \$2.50 in the second year (50 percent of the \$5 investment income). Thus, consumption in the second year would be only \$52.50. The comprehensive income tax would provide a return to saving of only 5 percent, compared to 10 percent in the other two cases. Thus, there would be an incentive for earlier consumption relative to either a consumption tax or an income tax which exempted income from capital.

Another way of expressing the correspondence (in terms of the present discounted value of the tax burden) between a consumption tax and an income tax which exempts income from capital is to say that a capital cost recovery system equivalent to expensing (the method used in a consumption tax) involves a zero "effective tax rate" on income from depreciable assets. The concept of effective tax rate can be applied to a variety of capital cost recovery proposals to measure how generous they are in relation to economic depreciation (an effective tax rate equal to the statutory rate or expensing (an effective tax rate equal to zero).

### **B. Ways To Characterize Capital Cost Recovery Systems**

One of the problems with comparing specific depreciation proposals is that the effect of a particular proposal depends on many features of the proposal (such as the length of the depreciation period, the method of depreciation, and the investment tax credit) on the rate of inflation, on the rate of interest and on the rate at which assets actu-

<sup>1</sup> In other cases, there would be differences in the burdens of a personal consumption tax and an income tax limited to personal services income. For example, a person who accumulated wealth before enactment of the tax would pay no tax under a tax on personal services income but would pay a consumption tax when he consumed the wealth.

ally decline in value. Two concepts which are useful in summarizing how a particular capital cost recovery proposal might affect the level and composition of investment are the "first-year equivalent deduction" and the "effective tax rate."

### ***First-year equivalent deduction***

Under any capital cost recovery proposal, there is a first-year deduction for each asset that would be economically equivalent to the actual investment tax credit and depreciation deductions allowed over the life of the asset under the proposal. This can be called the "first-year equivalent deduction." To measure the first-year deduction equivalent to a given stream of depreciation deductions, it is necessary to compute the present discounted value of the stream. This discounting takes into account that a dollar of tax reduction today is worth more than a dollar to be received in the future due to both inflation and the general preference for having money sooner rather than later. The present value method converts all dollars into constant (present) dollars as of the date the asset is placed in service. To measure the first-year deduction equivalent to a given investment tax credit, it is necessary to convert the credit to a deduction-equivalent by dividing by the statutory tax rate.

For example, assume that the present value of depreciation deductions for an asset under a particular proposal amounts to 70.3 cents per dollar invested and that the investment credit is 10 cents per dollar invested. Since a 21.7-cent deduction would reduce tax liability by about the same amount as the 10-cent investment credit (when the investor's statutory tax rate is 46 percent), the first-year equivalent deduction for this set of capital cost allowances would be 92 cents (70.3 cents plus 21.7 cents) in this example. In other words, the taxpayer should be indifferent between this particular combination of deductions and investment credits and a first-year writeoff of 92 cents.

Under "expensing" (or consumption tax treatment), the first-year equivalent deduction would be \$1. Under economic depreciation, the first-year equivalent deduction would be less than \$1 and would decline as the useful life of the asset increased.

### ***Effective tax rate***

A second way to characterize a capital cost recovery proposal is by its "effective tax rate." The effective tax rate on income from an asset is the amount of tax paid per dollar of income earned. This rate can differ from the taxpayer's statutory tax rate (46 percent, in the case of a large corporation) to the extent that taxable income differs from income actually earned by the taxpayer. For example, if exactly half of income earned were taxed at the statutory rate, then the effective tax rate would be half as large as the statutory tax rate.

In an economic sense, the income earned from an asset in a year (the denominator of the fraction defining the effective tax rate) equals the additional gross income it generates for the taxpayer minus the decline in the market value of the asset during the course of the year. This decline in market value, called economic depreciation, is the capital cost actually incurred by the owner of the asset which must be deducted in measuring his economic income. The tax paid (the numerator of the fraction) is the statutory tax rate times the taxable income from an asset, minus applicable tax credits. The taxable income from an

asset equals the additional gross income it generates minus the deductions allowed by tax law for capital costs. Thus, taxable income from an asset can differ from economic income earned to the extent that capital cost allowances under the tax law differ from the economic depreciation of the asset.

For some purposes, such as to analyze the effects of the tax system on incentives to invest, it is useful to measure effective tax rates over the entire life of the asset. To do this, taxable income, capital cost allowances and other dollar amounts needed to estimate the effective tax rate are expressed as present discounted values.

These effective tax rates are not, of course, directly observable by looking at tax returns. They represent a way to characterize the expectation of a typical businessman about the tax burden which the law will impose on a new investment.

### ***Appropriate discount rate***

Using the concepts of "first-year equivalent deduction" and "effective tax rate" to characterize capital cost recovery proposals requires making an assumption about the appropriate discount rate to use in measuring present values. In the calculations shown below in tables 2 and 3, the staff has used a rate of 12 percent, but this could be criticized either for being too low or for being too high.

The argument that 12 percent is too high runs as follows: An acceleration of a depreciation deduction shifts tax liability from an earlier year to a later year and, thus, gives the taxpayer the same benefit as an interest-free loan. The value of such a loan to the taxpayer equals his after-tax cost of borrowing money. For a taxpayer who can borrow at 19 percent (the current prime rate) and deduct 46 percent of the interest expense, the after-tax cost of financing investment with debt is approximately 10 percent (54 percent times 19 percent). To such a taxpayer, a \$1.10 payment made one year hence is equivalent in present value to a \$1.00 payment made this year, and thus the appropriate discount rate in computing present values would be 10 percent. With lower interest rates, such as those forecast by the Administration, the discount rate would be lower than 10 percent.

The response to this argument is that the appropriate discount rate should be higher than 10 percent for taxpayers who must finance investment at higher-than-normal interest rates or for taxpayers whose tax benefit from an additional dollar of interest expense might be less than 46 percent due to a lower marginal tax rate. Also, it is argued that the cost of equity capital, not debt, is the relevant standard of comparison. While the cost of equity capital is not directly observable, like the interest rate, it can be inferred from the real rate of return earned by corporations (3 to 6 percent) plus the inflation rate. Under the Administration's inflation assumption, this line of argument would imply a discount rate of 9 to 12 percent, but the rate would be higher under more pessimistic inflation assumptions.

## **C. Distortions Caused by Capital Cost Recovery Systems**

### ***Bias against investment***

Without taxes, an investment is profitable if it generates enough additional gross income to pay back its original costs and to compensate the investor for the costs of financing the investment. Investments

which generate a lesser amount of gross income per dollar invested would not be profitable, nor would they be economically efficient. When the effective tax rate is positive, however, a profitable investment must also earn enough extra gross income to pay the tax. Thus, fewer investments can be undertaken profitably when the effective tax rate is positive than when it is zero. This disincentive to additional private investment is reduced as the effective tax rate is reduced, and one way to do this is to increase the first-year equivalent deduction of the capital cost allowances that are provided by the tax law.<sup>2</sup>

A zero effective tax rate will result when the first-year equivalent deduction for capital cost recovery as permitted by tax law equals \$1 for every dollar invested (i.e., expensing). Under expensing, the present value of the depreciation deductions will equal the present value of the additional gross income on a marginally profitable investment over its useful life. Thus, the effective tax rate (in terms of present value) is zero, and the tax system does not discourage investment.

For example, consider a simple case in which the discount rate is 10 percent, in which a taxpayer purchases an asset for \$100, and in which the asset earns \$110 in the next year. Under expensing, the asset will generate deductions of \$100 in year 1. In a competitive economy, it will generate \$110 of taxable income in year 2, but this will have a present value of \$100, exactly the same as the value of the deductions. Under expensing, the present value of taxes paid with respect to new investments will be positive only for those assets on which the rate of return is higher than the discount rate which will not generally happen beyond the short-run in a competitive economy.

In a system in which the first-year equivalent deduction exceeded \$1 (i.e., which was more generous than expensing) the effective tax rate would be negative. This would create a bias in favor of investment in which taxpayers would have an incentive to make more investments than they would under systems of consumption taxation or of income taxation with exemption of income from capital.

In table 1 are estimates of the average effective tax rate on income from investments in equipment and structures for the years 1961-1980. These estimates, from a study by Dale Jorgenson and Martin Sullivan, are based on data and assumptions about the appropriate discount rate, rates of economic depreciation, marginal tax rates and many other factors. The average effective tax rate in 1980 is estimated to have been 25 percent—19 percent for equipment and 37 percent for structures. These estimates indicate that some amount of productive investment (that is, investment which returns in present value at least as much gross income as it costs) is being deferred by the income tax. In addition, the estimates suggest that the amount of productive investment thus deterred is not as great as it would have been had the statutory tax rate also been the effective tax rate.

The average effective tax rate for equipment and structures combined generally has fluctuated between 20 percent and 30 percent over the last two decades. It was brought down into this range in 1962 when the investment tax credit was enacted and useful lives for equipment

<sup>2</sup> Another way would be to reduce the statutory tax rate. One argument for preferring accelerated depreciation to rate reductions is that the benefit of accelerated depreciation goes only to new investment and to used assets which are resold, while a rate reduction applies to income from all existing investments as well. There are, however, other arguments favoring use of tax rate cuts.

were shortened. These changes led to a more favorable recovery of costs for equipment than for structures, a difference which was maintained (except in 1969 and 1970, when the investment credit was repealed) and widened by subsequent liberalizations in the investment credit and useful lives for equipment. Correlated with these changes has been a change in the composition of nonresidential fixed investment, approximately 70 percent of which was for equipment (as opposed to structures) in the late 1970's as compared to approximately 56 percent in the early 1960's. Decreases in statutory tax rates have contributed to lower average effective tax rates on both equipment and structures, while generally higher inflation rates have worked to raise these averages.

**Table 1.—Average Effective Tax Rate, 1961–80**

Year	Average effective tax rate, percent—			Statutory tax rate, percent (top corporate rate)	Significant changes in recovery provisions
	Equip- ment	Struc- tures	Equip- ment and struc- tures		
1961-----	43	35	40	52	
1962-----	25	35	29	52	ITC enacted; equipment lives shortened.
1963-----	22	34	26	52	
1964-----	19	32	24	50	Basis reduction for ITC repealed.
1965-----	16	31	21	48	
1966-----	25	32	27	48	
1967-----	24	32	27	48	
1968-----	22	33	26	48	
1969-----	38	36	37	48	ITC repealed.
1970-----	43	39	42	48	
1971-----	24	37	29	48	ITC restored; ADR introduced.
1972-----	16	36	23	48	
1973-----	19	38	26	48	
1974-----	22	39	28	48	
1975-----	13	36	21	48	ITC liberalized to 10 percent.
1976-----	8	34	17	48	
1977-----	4	33	14	48	
1978-----	10	35	19	48	
1979-----	12	34	20	46	
1980-----	19	37	25	46	

Source: Effective tax rates are from D. W. Jorgenson and M. A. Sullivan, "Inflation and Capital Recovery in the United States," 1981.

Note: This study used a definition of structures which includes property classified under the tax law as equipment.

***Bias across assets***

The productivity of a nation's investment depends not just on the amount of investment but on its composition as well. When investors acquire less productive assets instead of more productive assets of equal cost, the productivity of the total amount invested is less than it could be.

An income tax can contribute to an inefficient mix of investment when income from different assets is not taxed at the same effective tax rate. If the effective tax rate on income from a less productive asset is low while the effective tax rate on income from a more productive asset is high, then the after-tax rate of return to an investor could be greater if he acquired the less productive asset instead of the more productive asset. This incentive to invest in less productive assets is eliminated when an income tax is structured such that the same effective tax rate applies to every kind of asset.

Under present law, there appears to be a substantial amount of variation in effective tax rates across assets, due to significant differences in the degree to which capital cost recovery allowances deviate from economic depreciation across assets. As shown in table 2 (which was prepared by the staff using different assumptions than those used by Jorgenson and Sullivan), the effective tax rate appears to be nearly zero for some categories of equipment, while for other categories it appears to be about 36 percent.

**Table 2.—Effective Tax Rate and First-Year Equivalent Deduction by Guideline Life, New Equipment**

	Present Law		Economic depreciation,
	Effective tax rate (percent)	1st-year equivalent deduction	1st-year equivalent deduction
<i>ADR midpoint</i>			
<i>life (years):</i>			
2.5-----	25	\$0.975	\$0.931
3.0-----	22	.975	.917
3.5-----	19	.975	.904
4.0-----	15	.979	.891
5.0-----	13	.979	.867
6.0-----	4	.994	.843
6.5-----	3	.994	.832
7.5-----	3	.994	.811
8.0-----	3	.994	.801
9.0-----	3	.994	.781
9.5-----	7	.980	.772
10.0-----	10	.969	.763

	Present Law		Economic depreciation, 1st-year equivalent deduction
	Effective tax rate (percent)	1st-year equivalent deduction	
11.0-----	16	.944	.745
12.0-----	18	.932	.728
12.5-----	19	.921	.720
13.0-----	21	.910	.712
14.0-----	22	.900	.696
15.0-----	25	.879	.681
16.0-----	27	.860	.667
17.0-----	27	.850	.654
18.0-----	29	.832	.640
20.0-----	30	.807	.616
22.0-----	31	.783	.593
25.0-----	33	.747	.562
28.0-----	34	.714	.534
30.0-----	35	.697	.516
35.0-----	36	.654	.478

## NOTES:

1. A 46 percent statutory tax rate is assumed. Estimated effective tax rates would be lower for a taxpayer whose statutory tax rate is under 46 percent.

2. A 12 percent annual discount rate is assumed. Estimated effective tax rates would be lower for discount rates under 12 percent.

3. Economic depreciation estimates assume that the real value of the asset declines at a rate of 1.25 divided by the ADR guideline (midpoint) life.

Very short-lived equipment with guideline lives of 2.5 or 3 years has the highest economic depreciation of all depreciable assets, hence a first-year equivalent deduction of 97.5 cents for this property leads to effective tax rates which are about average for equipment. Equipment that has a guideline life between 6 and 9 years—the shortest-lived equipment to qualify for the full investment tax credit under present law—has the lowest estimated effective tax rates. The first-year equivalent deduction for this property is just under \$1.00, while its economic depreciation is about 80 cents. For equipment that has a guideline life in excess of 9 years, the estimated effective tax rate increases as the guideline life increase.

To the extent that industries acquire depreciable assets in different proportions, the average effective tax rate on equipment can vary across industries. Estimates of average effective tax rates by industry are shown in table 3. They range all the way from 4 percent to 34 percent.

In addition, there can be biases which affect the choice between depreciable assets and other kinds of capital. For example, the present

system favors investment in intangible drilling costs relative to investment in depreciable assets.

Thus, it appears that the structure of capital cost allowances under present law is contributing to an inefficient mix of investment and that the potential improvement in productivity from what is being spent for new capital is not being fully realized.

**Table 3.—Average Effective Tax Rate on Equipment Under Present Law, by Industry**

<i>Industry:</i>	<i>Effective tax rate (percent)</i>
Carpets, dyeing.....	4
Apparel.....	5
Radio and TV.....	5
Electronics.....	5
Textured yarns.....	8
Knits.....	8
Aerospace.....	9
Oil and gas drilling.....	9
Chemicals.....	10
Machinery.....	10
Logging.....	11
Finance, insurance and real estate.....	11
Cable TV.....	11
Land freight transportation.....	11
Mining.....	11
Personal and professional services.....	11
Agriculture.....	12
Converted paper.....	12
Nonwoven textiles.....	12
Sawmills.....	13
Wood products and furniture.....	13
Construction.....	14
Trade.....	14
Land passenger transportation.....	14
Leather.....	15
Printing and publishing.....	15
Locomotive and railroad cars.....	15
Yarn and thread.....	16
Plastic.....	16
Amusements.....	16
Fabricated metal.....	17
Prepared food.....	17
Airlines.....	18
Motor vehicle production.....	18
Shipbuilding.....	19
Glass.....	21
Rubber.....	21
Oil and gas production.....	21
Non-ferrous metal.....	21
Pulp and paper.....	22
Railroad transportation.....	23
Other stone and clay.....	23

**Table 3.—Average Effective Tax Rate on Equipment Under Present Law, by Industry—Continued**

<i>Industry:</i>	<i>Effective tax rate (percent)</i>
Tobacco .....	24
Ferrous metal.....	24
Petroleum marketing.....	25
Petroleum refining.....	25
Grain products.....	25
Vegetable oil.....	27
Sugar products.....	27
Cement .....	29
Water transport.....	30
Telephone and telegraph.....	30
Oil and gas pipelines.....	31
Electric utilities.....	33
Gas utilities.....	34

Note: Notes to Table 2 apply also to Table 3.

### ***Effect of inflation on these distortions***

Inflation can affect both the bias against investment and the bias across assets.

Under present law, capital cost recovery allowances are based on the historical cost of an asset. Because depreciation deductions are claimed over two or more years, their present value goes down when interest rates increase, which generally occurs when inflation accelerates. This increases the effective tax rate on any depreciable asset and increases the tax deterrent to additional investment. The staff estimates that under present law a one-percentage-point increase in the inflation rate above current levels would raise the average effective tax rate for equipment by approximately 4 percentage points. Hence a decline in the inflation rate would itself be an important stimulus to additional private investment.

Under present law, inflation appears to operate differently upon effective tax rates for different assets. Estimates suggest that an increase in the inflation rate generally would produce a greater increase in the effective tax rates for assets which are most favorably treated at the current rate of inflation, thus tending to reduce distortions in the investment mix. Conversely, it appears that these distortions would be larger at lower rates of inflation.

Thus, one criterion for evaluating a proposal is the extent to which inflation affects both the level of effective tax rates and the variation in effective tax rates across assets. Generally, capital cost recovery systems which rely on first-year deductions and investment credits will be less sensitive to inflation.

### **D. Interaction Between Depreciation and Treatment of Debt and Interest**

The formula used to compute the effective tax rate assumes that investments in depreciable assets are financed with equity—retained earnings or issues of stock. Some of the conclusions outlined above may have to be modified in the case where depreciable assets are debt-financed. Because interest payments are deductible, a debt-financed

investment provides a tax advantage relative to an equity-financed investment. This lowers the effective tax rate. Also, if some assets can be financed with higher debt-equity ratios than others, there will be a bias in favor of those assets arising from the deductibility of interest independent of depreciation allowances. Thus, because structures often have a higher debt-equity ratio than equipment, table 1 may overstate the extent to which the existing system is biased against structures. In fact, when structures can be financed almost entirely with debt, there is a tax bias in favor of structures. Also, the effective tax rates in table 1 assume that the original owner holds the asset for its entire useful life. When assets are sold before they are retired from service, table 1 will overstate any bias against structures because it fails to take account of the more lenient recapture rules applying to structures. (These problems with applying the concept of effective tax rates to structures are the reason the staff limited tables 2 and 3 to equipment.)

### **E. Effect of Tax Changes on Investment**

The most common view among economists is that tax incentives work to increase business investment. The main area of controversy concerns measuring how responsive is business investment to changes in tax incentives. In a study recently completed for the Treasury Department by Robert Chirinko and Robert Eisner, the effects of tax incentives on investment were analyzed with the use of six different large-scale macroeconomic models. This study indicates the range of diversity in predicted effects: one model suggests that investment would rise to \$1.30 per \$1 of static revenue loss due to an increase in the investment tax credit and extension of that credit to structures; a second model suggests the figure to be about \$0.50. The average predicted increase in investment over all the models studied by Chirinko and Eisner was \$0.76 per \$1 of static revenue loss for this type of tax stimulus to investment. Other previous studies reflect this uncertainty about the exact amount of investment response from changes in tax incentives.

### **F. Depreciation vs. ITC as Ways to Recover Capital Costs**

In an earlier section, it was noted that 10 cents of investment tax credit gives the same tax savings as a depreciation deduction whose present value is 21.7 cents, when a taxpayer's statutory tax rate is 46 percent. This equivalence suggests that a variety of tax reduction programs could be devised—some that emphasize accelerated depreciation and others that emphasize the investment credit—which would provide approximately the same stimulus to additional investment. Alternatively, if a plan further accelerated depreciation by a sufficient amount, some investment tax credits could be reduced and the plan could still provide a significant stimulus to investment.

Nevertheless, the two methods of cost recovery are not necessarily identical in all situations. First, the value of depreciation deductions varies as the future inflation rate changes (unless all depreciation is taken in the first year), whereas the value of an investment credit claimed in the year of investment is fixed. Thus, the stimulative effects of a cost recovery program which emphasizes accelerated depreciation (other than proposals for a single, first-year deduction) could be considerably less stable over time than a plan which emphasizes credits

or a first-year deduction. Second, the rate at which benefits from the two methods are equivalent depends upon a taxpayer's statutory tax rate: whereas the deduction-equivalent of a 10-cent investment credit is \$21.7 for a 46-percent taxpayer, it is 58.8 cents for a 17-percent taxpayer and 14.3 cents for a 70-percent taxpayer. Thus, a cost recovery program which emphasizes investment credits would be more beneficial to taxpayers with lower statutory tax rates than a comparable acceleration of depreciation. Third, many corporations treat the investment credit and accelerated depreciation differently when they report earnings to shareholders. The investment credit directly reduces earnings reported to shareholders, while accelerated depreciation does not. Instead, accelerated depreciation reduces earnings over the period of the tax deferral because it leads to lower interest expense over this period. Thus, some corporations have expressed a preference for the investment credit because it would enable them to report higher earnings to their shareholders than an acceleration of depreciation deductions whose present value is the same. However, other corporations report the investment credit to shareholders as a tax reduction which is spread over the life of the underlying equipment. The corporations who adopt this more conservative method of treating the investment credit should be relatively indifferent between the investment credit and accelerated depreciation in terms of their respective impacts on earnings reported to shareholders.

## APPENDIX A

### DEPRECIATION AND OTHER INVESTMENT INCENTIVES IN SELECTED FOREIGN COUNTRIES

#### Overview

This appendix presents summaries of the capital cost recovery provisions and other investment tax incentives in West Germany, Japan, France, the United Kingdom, and Canada. Such international comparisons are frequently made to bolster suggestions for changes in U.S. depreciation rules.

Canada and the United Kingdom appear to have capital cost recovery provisions which are more generous than the present U.S. law. France, Germany and Japan appear to be less generous.

These international comparisons, however, should be interpreted with caution. The impact of the tax system on business investment depends not only on capital cost recovery and investment tax incentives but also on corporate tax rates, provisions relating to the double taxation of dividends, tax rates on dividend and interest income and capital gains at the shareholder level, and property or net worth taxes that may apply to businesses or individuals. The staff knows of no study which makes international comparisons of tax impacts on investment on such a comprehensive basis. Furthermore, countries differ in the extent to which their governments promote investment with spending and regulatory policies, which may be just as important as tax policies.

#### West Germany

##### *Depreciation*

###### *Overview*

The beneficial owner of fixed assets which have a useful life in excess of one year may deduct a reasonable allowance for depreciation. Depreciation cannot be claimed for tax purposes at a faster rate than it is taken in the commercial financial statements. In general, a taxpayer is required to deduct depreciation only in the year in which it is allowable, and the deduction may not be deferred to a later year. Expenditures on tangible personal property which cost DM 800 (about \$365) or less may be written off in full during the year of acquisition.

Salvage value may be ignored at the taxpayer's election unless the salvage value is expected to be substantial. At any time during the life of personal property, the taxpayer may write it down to its going concern value if it is lower than the adjusted cost basis. Also, it appears that a deduction for obsolescence resulting from technological or economic factors is allowable.

The useful lives permissible for fixed assets other than buildings are not fixed by statute, but the Federal Ministry of Finance publishes

a table of recommendations. It appears that the following useful lives are generally accepted: machinery, 8.3-10 years; automobile and trucks, 4-5 years; office equipment, 5-10 years; computers, 5 years; office furniture, 10 years.

Personal property can be depreciated under a 250-percent declining balance method at an annual rate not in excess of 25 percent of the asset's basis. Additional depreciation may be claimed when assets are subject to heavy use. In these situations, the straight line rates may be increased by 25 percent for two-shift use and by 50 percent for three-shift use.

Buildings can be depreciated over the 50-year period under an accelerated declining balance method at the following rates:  
depreciated over the 50-year period under an accelerated declining balance method at the following rates:

(1) for the year of completion and each of the 11 subsequent years, 3.5 percent.

(2) for each of the following 20 years, 2 percent; and

(3) for each of the following 18 years, 1 percent.

*Special depreciation and amortization for specific types of investment*

Among the special rules for the recovery of costs of specific types of investment are the following:

(1) In addition to normal depreciation, an initial allowance of 50 percent of the cost of personal property and 30 percent of the cost of real property is granted for investments in certain qualifying private hospitals.

(2) Enterprises situated on the borders of the Iron Curtain Countries may be allowed a writeoff in the initial five years of 50 percent of the cost of personal property and 30 percent of the cost of buildings.

(3) An initial allowance of 40 percent is granted for new merchant ships and 30 percent for aircraft registered in Germany.

Under general rules for the application of special accelerated depreciation allowances, such allowances may not be used to create or increase a loss.

**Other investment incentives**

No investment tax credit is provided.

**Japan**

**Depreciation**

*Overview*

Depreciation is allowed for all tangible property, real and personal.

Straight-line depreciation, declining balance depreciation, and any methods approved by the Tax Bureau are permissible depreciation methods. The unit of production method may be used for assets used in the mining industry.

Depreciation may be deducted for tax purposes as entered on the books of the company and may be charged against profits, up to the limits established by law. Apparently this rule requires that all the

depreciation deducted for tax purposes be taken into account in computing earnings for financial purposes.<sup>1</sup>

The entire cost of depreciable assets may be deducted currently if the cost is less than 100,000 yen per unit (approximately \$460 or if the useful life is less than one year.

The Ministry of Finance has established standard useful lives for almost all depreciable assets calculated to reflect the average actual decline in economic value of the assets, as determined in accordance with generally accepted accounting principles. If shorter useful lives can be justified to the relevant regional tax bureau, the shorter lives may be used.

#### *Special accelerated depreciation*

A corporation meeting certain requirements may accelerate the depreciation of certain specified assets by either of two accelerated methods. In addition to ordinary depreciation, under the "special additional depreciation" method, a corporation may deduct during each year an additional percentage of the ordinary depreciation taken for such year. Examples of the amounts of special additional depreciation allowed for certain eligible assets are as follows:

(a) newly constructed rental housing, 100–150 percent of ordinary depreciation (depending on the useful life);

(b) qualified crude oil storage tanks, 50 percent of ordinary depreciation; and

(c) new machinery, plant, etc. of a small corporation installed as part of an approved modernization plan, 50 percent of ordinary depreciation.

Under the "special initial depreciation" method, a certain percentage of the acquisition costs of eligible assets may be deducted during the year when the assets are first placed in use. Examples of the amounts of special initial depreciation allowed for certain eligible assets are as follows:

(a) qualified manufacturing plants installed in the Okinawa free trade zone, 33 $\frac{1}{3}$  percent of acquisition cost;

(b) qualified facilities to prevent pollution, 50 percent of acquisition cost;

(c) qualified plants equipped with special antipollution devices and qualified energy efficient plants, 25 percent of acquisition cost; and

(d) certain machinery using data processing equipment, 25 percent of acquisition cost.

#### *Investment credit, etc.*

A tax credit of 10 percent of the purchase price of certain assets, up to 20 percent of total corporate tax liability, is allowed for purchases in certain industries. A special tax credit is allowed for any corporation which increases its research and experimental expenses or training costs of programmers and systems engineers for electronic computers. This tax credit cannot exceed 10 percent of the corporation tax.

<sup>1</sup> If the depreciation deducted for financial purposes exceeds the statutory limits, the excess may be carried over and, taken together with subsequent book depreciation, deducted up to the statutory limits in subsequent years.

Certain special incentives are also available for overseas investment and reserves for designated percentages of export gross receipts.

## France

### *Depreciation*

In general, tangible assets are usually depreciated over the following useful lives, based on taxpayer estimates of normal business usage—

Industrial buildings.....	20 years
Commercial buildings.....	20 to 50 years
Equipment and tools.....	4 to 10 years
Office furniture.....	10 years

Under French tax law, most depreciable assets must be depreciated on the straight-line method. However, new industrial and commercial equipment, plants to be used for conserving raw materials, and certain other assets may be depreciated under the declining balance method. Generally, the rates of depreciation under the declining balance method are multiples of the straight-line rate, and are 150 percent for assets with a normal useful life of 3 to 4 years, 200 percent for assets with normal useful lives of 5 to 6 years and 250 percent for assets with normal useful lives of 6½ to 20 years.

The declining balance method is not allowed for:

- (1) buildings (except for hotels, the useful life of which does not exceed 15 years);
  - (2) passenger cars;
  - (3) pickup trucks;
  - (4) typewriters, telephone installations, and office furniture;
- and
- (5) used property.

The cumulative depreciation on fixed assets recorded on a company's books as of each year must be at least equal to the normal cumulative straight-line depreciation for each category of fixed assets. If any part of this minimum depreciation is not recorded in a given year, it could not be claimed in the future as a deduction against taxable income. If a company is in a loss position, the deficit resulting from a properly recorded depreciation charge may be carried forward without time limit. (This rule is an exception to the normal five year limitation on net operating loss carryforwards.)

No investment tax credit is allowed, but special depreciation allowances are granted in certain cases where investments are considered particularly fruitful to the French economy. Among these are:

Special accelerated first-year depreciation of 50 percent of the cost of buildings used for technological or scientific research is allowed.

An exceptional writeoff during the year of completion is permitted for 25 percent of the cost of buildings erected for industrial and commercial purposes.

## United Kingdom

### *Depreciation*

In general, the full cost of all machinery and equipment (other than automobiles not used for public hire or the conveyance of goods or passengers) may be deducted in the year the expenditure is made. This

rule applies to both new and used property. Also, the taxpayer may deduct all or any portion of the amount allowable and carry the rest over to succeeding years.

An industrial building may be depreciated by taking a depreciation deduction of 50 percent in the first year and thereafter writing down the building at a rate of 4 percent per year. Since 1978, qualifying hotels have been eligible for 20 percent first year depreciation and 4 percent thereafter.

An alternative means of recovering expenditures for machinery and plant is to write down the undepreciated capital cost at a rate of 25 percent per year (on the declining balance method.) This declining balance method of depreciation at a rate of 25 percent per annum generally applies to automobiles which do not qualify for the full deduction in the year of the expenditure. Depreciation allowances are generally recaptured on the disposal of the assets.

Depreciation may be deducted only with respect to certain specified categories of assets. It appears that the main types of assets for which depreciation is not allowable are nonindustrial buildings (e.g., offices, nonqualifying hotels, show rooms, and retail shops), intangible assets other than patents, and, in certain circumstances, know-how.

### ***Other investment incentives***

Development area grants of 20 percent to 22 percent of the capital expenditure on machinery and plant are available for certain expenditures. These grants do not reduce a taxpayer's basis for depreciation purposes. In designated "enterprise zones," 100 percent first year depreciation is allowed for industrial and commercial buildings.

## **Canada**

### ***Depreciation***

In Canada, depreciation for tax purposes takes the form of a capital cost allowance computed on pools of assets grouped according to a relatively few separate classes of property. The annual cost recovery allowances are generally determined by applying a prescribed rate to each class on a declining balance method. Thus, for example, the prescribed annual rate on most machinery and equipment is 20 percent; on automotive equipment, 30 percent; on most buildings, 5 percent. A taxpayer may defer a deduction for depreciation by claiming less than the amount allowable. In general, capital cost allowances previously claimed are recaptured if assets are sold for proceeds in excess of the undepreciated cost. However, like the proposed open account system of the Senate Finance Committee bill, the Canadian open account system defers any recapture of previously claimed capital cost allowances until the adjusted basis of the entire class account has been reduced to zero by previously claimed allowances and dispositions of assets from the account. When the account balance has been reduced to zero, any proceeds realized upon disposition are treated as ordinary income.

In addition, a special 2-year writeoff is allowed for machinery and equipment for Canadian manufacturing and processing operations.

Unlike certain other systems described above, tax depreciation is not required to conform to book depreciation.

***Other incentives***

Certain regional development incentives are available under various Federal and provincial programs. These programs offer substantial incentives to encourage corporations to locate their manufacturing facilities in areas of slow economic growth.

Canada provides an investment tax credit of 5 percent of the cost of certain buildings, machinery, and equipment if such assets are to be used in manufacturing, processing, or other specified activities. This credit reduces basis cost for tax depreciation purposes. The amount of this credit allowable may not exceed the sum of \$15,000 plus one-half of the amount by which the Federal income tax otherwise payable exceeds \$15,000.



