FOREWORD

The bylaws of the National Regulatory Research Institute state that among the purposes of the Institute is:

> . . . to carry out research and related activities directed to the needs of state regulatory commissioners, to assist the state commissions with developing innovative solutions to state regulatory problems, and to address regulatory issues of national concern.

This study — the first in our series of Occasional Papers — helps meet that purpose. Questions of the diminished federal tax liability of utilities as a result of the operation of particular features of the federal tax code, especially accelerated depreciation and the investment tax credit, are now before the Congress. So are questions of the appropriate accounting treatment of the very large sums of money arising out of these two features before state public utility commissions.

We believe that the factual information and balanced analysis presented by Dr. Donald W. Kiefer will be of great assistance to all parties to these important issues. Accordingly, this study is brought forward to help elevate the current discussion.

The views presented are, of course, those of the author and do not necessarily represent those of NRRI, The Ohio State University, or the Congressional Research Service or the Library of Congress.

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I. Introduction and Summary

Accelerated depreciation was adopted in 1954, and the investment tax credit was enacted in 1962. From the outset the economic effects of these tax benefits on the regulated public utilities and their customers have been debated, and controversy has surrounded the treatment of the tax benefits in the ratemaking process for the public utilities. This paper presents a detailed analysis of the legislative history of these tax benefits and of their economic effects on utility rates, tax payments, cash flow, and profits. Finally, an economic evaluation of the alternative ratemaking treatments is offered.

The analysis which follows is detailed but not exhaustive; the full range of policy issues relating to the application of the tax benefits to public utilities is beyond the scope of a single study. For example, while the legislative history presented in section II is voluminous, there is no attempt to draw upon it to analyze any of the several legal issues related to the subject. There is also no attempt to assess the implications of the tax benefits and their alternative regulatory treatments within the framework of energy policy considerations. Several issues are briefly summarized in the study but not analyzed in depth, for example the impact of the tax benefits on capital investment by the utilities. Finally, the economic analysis in the study is premised on the federal tax code in essentially its present form; no attempt is made to evaluate whether the corporate income tax should apply to public utilities (as opposed to some other form of tax, such as an excise tax) or whether utilities should qualify for accelerated depreciation and the investment tax credit. The focus of the analysis is on the legislative history of the tax benefits and their economic effects on utility rates, tax payments, cash flow, and profits. This first section provides a summary of the legislative history, economic analysis, and evaluation which appear in the remaining sections of the paper.

Legislative History and Present Law

Accelerated depreciation, in the form of the 150 percent declining balance method, was first made available by Treasury administrative action in 1946. The first general statutory provision for accelerated depreciation was in the 1954 Internal Revenue Code, which allowed depreciation by the straight line method, the double declining balance method, the sum-of-the-years' digits method, or any other consistent method which does not yield depreciation deductions larger than the double declining balance method. The stated reasons for allowing accelerated depreciation in the 1954 Code were that previous allowances for depreciation were not in accord with economic reality and operated as a barrier to investment.

After enactment of the 1954 Code, public utilities in general moved toward adoption of accelerated depreciation methods. As this trend continued, a controversy arose concerning the treatment of the tax benefit resulting from accelerated depreciation in ratemaking by regulatory agencies. A trend developed toward "flowing through" the tax benefits to rates, and in the late 1960's some regulatory agencies began imputing accelerated depreciation to public utilities which, in fact, used straight line depreciation and flowing through the imputed tax benefits.

In an effort to forestall the alleged Treasury revenue loss resulting from the trend toward accelerated depreciation and flow through ratemaking treatment, the Tax Reform Act of 1969 included provisions to "freeze" the situation with regard to depreciation claimed by public utilities. The Act set up the classification scheme and ratemaking treatment rules which remain in effect today. Public utility property was divided into pre-1970 property and post-1969 property. For pre-1970 property, in general, a public utility may not use accelerated depreciation unless it was using it in 1969 (on the latest tax return filed before August 1, 1969), and, furthermore, a flow through method of ratemaking may not be used with regard to this property unless it was being used in 1969. Thus, with regard to pre-1970 property, a public utility may switch from flow through to normalization and from accelerated depreciation to straight line but may not make the reverse of either switch. For post-1969 property, flow through may be used only by utilities which were using it in 1969; all others must normalize or use straight line depreciation. Thus, a utility may use accelerated depreciation for post-1969 property even though it uses straight line for pre-1970 property; however, it must normalize the resulting tax benefit. In addition, a utility which so elected prior to June 30, 1970, could have changed from the flow through method of accounting to normalization, or to the straight line method, for property which expands the productive capacity of the utility for its taxable years beginning after December 31, 1970. Use of any ratemaking treatment contrary to these rules would cause loss of eligibility of the utility to use accelerated depreciation.

The current statutory definitions of flow through and normalization with regard to depreciation were also provided by the Tax Reform Act of 1969. The flow through method is the use of the same method of accelerated depreciation in computing the actual income tax liability of the public utility as is used for determining the income tax expense for book and ratemaking purposes. The normalization method involves use of an accelerated depreciation method in computing the actual income tax liability and use of a less accelerated depreciation method or the straight line method in calculating the income tax expense for book and ratemaking purposes. Under the normalization method, the difference in depreciation charges resulting from use of the two depreciation methods is credited to a reserve for deferred income tax.

The Tax Reform Act of 1969 also reduced the allowable acceleration in the depreciation of most types of real property including public utility property.

Early in the history of the tax code, the determination of depreciable lives of assets was left largely up to the taxpayer; the Bureau of Internal Revenue challenged only those depreciation deductions which were clearly unreasonable. In 1934, in response to Congressional concern about excessive levels of depreciation deductions, the Treasury issued T.D. 4422, which shifted to the taxpayer the burden of proof regarding the correctness of depreciation amounts. This shift led to a general downward adjustment in depreciation deductions.

In 1940, and again during the Korean War, 60-month accelerated amortization was allowed for designated emergency defense related capital investment projects, including public utilities. In 1942, the Treasury issued a new version of Bulletin F, its depreciation rules, and included a guide to depreciable lives for over 5,000 classifications of assets. These designated depreciable lives were, in many cases, longer than were in common use at the time, and thus reduced depreciation deductions.

Bulletin F was replaced in 1962 by the system of "guideline lives" for 75 broad classes of property used by each industry. This system greatly simplified the regulations regarding depreciable lives. The new guideline lives averaged 32 percent shorter than those in Bulletin F, thus leading to an increase in depreciation deductions. The guideline lives system was supplemented by the present Asset Depreciation Range (ADR) system in 1971. Under the ADR system, the depreciable lives of assets are allowed to vary over a range within 20 percent of the 1962 guideline lives. The regulations associated with the ADR system require public utilities which use the straight line method of depreciation or normalize the benefits of accelerated depreciation to normalize the tax deferral which results from use of ADR.

The investment tax credit was first adopted in the Revenue Act of 1962; its primary purpose was to stimulate increased investment. The general rate of the credit was 7 percent, but a 3 percent credit was provided for public utilities. The Revenue Act of 1964 contained the first restriction on

treatment of the investment credit in ratemaking by regulatory agencies. The Act prohibited Federal regulatory agencies, without the consent of the public utility involved, to reduce the taxpayer's cost of service attributable to the Federal income tax by more than a proportionate amount of the investment tax credit determined with reference to the useful life of the property.

The investment credit was suspended from October 10, 1966 to March 10, 1967, in an effort to reduce inflationary pressures in the economy. The credit was repealed by the Tax Reform Act of 1969, again as a part of an effort to dampen inflationary forces. The Revenue Act of 1971 reenacted the investment credit—the general rate of the credit remained at 7 percent, but the rate for public utilities was increased to 4 percent—and provided the present rules regarding allowable treatment of the credit in ratemaking for public utilities by regulatory agencies. The Act provided three options to public utilities for treatment of the investment tax credit. One of the options had to be elected by each public utility within 90 days of enactment of the Revenue Act of 1971; in the absence of an explicit election, the first option was controlling.

The first option—which the statute labels the "general rule" but which might more descriptively be named "rate base normalization"—permits (but does not require) a reduction in the utility's rate base to reflect the investment tax credit (or a portion thereof) so long as the amount of the reduction is restored to the rate base not less than ratably over the useful life of the asset for book purposes. Under this option, any adjustment to the utility's cost of service for ratemaking purposes, including an adjustment which would result from reducing the depreciable basis of assets by the amount of the credit, is expressly prohibited.

The second option—which the statute names "ratable flow through," but which historically has been called normalization and for purposes of distinguishing from the first option might be termed "cost of service normalization"—permits a ratable reduction in the utility's cost of service for ratemaking purposes but prohibits any adjustment to the utility's rate base. The prohibited adjustments include any accounting treatment of the credit which would affect the utility's permitted profit on investment.

Under these options, if a regulatory agency requires a greater adjustment in the rate base or the cost of service than is permitted, then the investment tax credit is to be disallowed with regard to the affected property.

Under the third option—which the statute appropriately terms "immediate flow-through"—the restrictions of options one and two do not apply. Thus, under this option, the entire amount of the investment tax credit may be flowed through immediately to rates by an equivalent reduction in the Federal income tax element of the utility's cost of service. However, this option could be elected only by a utility which uses accelerated depreciation and flow through accounting for its post-1969 property, and the election was supposed to be made without regard to the requirements of any regulatory agency.[1]

The Tax Reduction Act of 1975 increased the rate of the general investment tax credit and the credit for public utilities to 10 percent for two years and relaxed the general percentage limitation on the investment credit for public utilities to 100 percent of tax liability in 1975 and 1976, thereafter phasing downward 10 percentage points each year until once again reaching the 50 percent limitation in 1981. The Act also for the first time allowed the investment tax credit on construction work in progress payments (the provision is being phased in over five years). Additionally, utilities were given new 90-day periods after the enactment of the Tax Reduction Act of 1975 to elect option 2 or option 3 ratemaking treatment with regard to the additional credit provided by the Act.

The Revenue Act of 1978 made the 10 percent investment tax credit a permanent feature of the tax code. It also initiated a phase-in, at 10 percentage points per year, of a 90 percent limitation on the amount of tax liability, above $25,000, that can be offset by the credit. The higher limitation, which applies to all corporations, will be fully phased-in in 1982. In the interim, utilities may choose the higher of the limitations offered by the Tax Reduction Act of 1975 or the Revenue Act of 1978.

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[1] In fact, some regulatory agencies did apply pressure to induce adoption of flow through treatment of the ITC by utilities under their jurisdiction.

Ratemaking Treatment

Prior to adoption of the Tax Reform Act of 1969 there was a general trend among regulatory agencies toward requiring flow through treatment of accelerated depreciation and, to a somewhat lesser extent, the investment tax credit. The trend began with a ratemaking decision in Pennsylvania in 1955, shortly after enactment of the legislation allowing use of accelerated depreciation and took on a new dimension in the late 1960's with decisions of the Federal Power Commission and the California Public Utilities Commission which imputed accelerated depreciation to straight line companies and flowed through the imputed tax benefits.

Since 1969, when restrictions on ratemaking treatment were first incorporated in the tax code, the trend toward flow through treatment has halted and some reversal has occurred. In 1969, 19 States required flow through of accelerated depreciation whereas in 1975 only 11 did. The numbers for normalization were 22 and 29 respectively, with the remainder of commissions each year allowing either method or being undecided. A similar trend is evident for treatment of depreciable lives and the investment tax credit, although flow through has always been less prevalent and normalization more so for the ITC than for accelerated depreciation. In 1975, 41 State commissions required exclusion of accumulated tax deferrals from the rate base, and only two of the States which prefer normalization of accelerated depreciation failed to exclude tax deferrals from the rate base.

Static Analysis of Economic Effects

In this section of the paper a mathematical model is developed to assess the effects of the tax benefits and their alternative regulatory treatments on utility rates, and the utility's taxable income, tax payments, cash flow, and book profits. The model is static in nature; in other words, it assesses these effects at a given point in time. The model assumes the actual rate of return is always equal to the allowed rate of return, that the overall allowed rate of return does not differ under the alternative regulatory treatments, that all variables other than those specified remain unaffected, and that the derived results will not be rendered impossible by market conditions. Each of the alternative regulatory treatments of accelerated depreciation and the investment tax credit is compared to a base case—a utility which does not receive either of the tax benefits—and to the other regulatory treatments.

The economic relationships between the alternative ratemaking treatments are complex, and they vary depending on the circumstances. The only precise and complete way to express the relationships is through the equations exhibited in section IV. However, the accompanying Summary Table provides a rough indication of the economic effects of each alternative regulatory treatment compared to the base case and compared to each other under the stated conditions. The ratemaking treatments and their economic effects are also summarized textually in the following paragraphs.

A utility which "flows through" the benefits of accelerated depreciation uses accelerated depreciation in its tax calculations and straight line depreciation for book purposes; actual tax payments are taken into account in determining allowed revenue. In a year in which the aggregate amount of accelerated depreciation exceeds the amount of straight line depreciation (a condition assumed to occur throughout the interpretation) flow through treatment, combined with accelerated depreciation, will reduce the required revenue (utility rates) of the utility and its tax payments to the Federal government by equal amounts (hence the term "flow through"). The amount of the reduction is determined by the excess of accelerated depreciation over straight line and by the tax rate. The reduction is larger than the direct tax savings resulting from accelerated depreciation because tax payments and required revenues are simultaneously determined; a one dollar reduction in taxes leads to a one dollar reduction in required revenues which, in turn, leads to a further reduction in taxes, and so on. Under flow through treatment, the cash flow and book profits of the utility remain unchanged; all of the benefit of reduced taxes is passed on to ratepayers.

If a utility uses accelerated depreciation in computing its taxes and the resulting tax reduction is "normalized" for ratemaking purposes with the deferred tax account excluded from the rate base,

SUMMARY TABLE

Relationships between Alternative Regulatory Treatments of Accelerated Depreciation and Investment Tax Credit

Tax Benefit	Ratemaking Treatment	Compared to	Relationship of:				Conditions
			Revenue Requirements	Tax Payments	Cash Flow	Book Profits	
Accelerated Depreciation	Flow Through	Base Case	Lower	Lower	Equal	Equal	Accelerated depreciation exceeds straight line
	Normalization, deferred tax account excluded from rate base	Base Case	Lower	Lower	Higher	Lower	Deferred tax account (DTA) is positive and "small" compared to annual benefit from accelerated dep.
		Base Case	Lower	Lower	Lower	Lower	DTA is positive and "large"
		Flow Through	Higher	Higher	Higher	Lower	DTA is positive and "small"
		Flow Through	Lower	Lower	Lower	Lower	DTA is positive and "large"
	Normalization, deferred tax account not excluded from rate base	Base Case	Higher	Lower	Higher	Higher	DTA is positive and "small"
		Base Case	Higher	Higher	Higher	Higher	DTA is positive and "large"
		Flow Through	Higher	Higher	Higher	Higher	Accelerated depreciation exceeds straight line
Investment Tax Credit	Flow Through	Base Case	Lower	Lower	Equal	Equal	Investment tax credit (ITC) is positive
	Normalization, rate base method (option 1)	Base Case	Lower	Lower	Higher	Lower	Accumulated deferred ITC (ADITC) is positive and "small" compared to ITC
		Base Case	Lower	Lower	Lower	Lower	ADITC is positive and "large"
		Flow Through	Higher	Higher	Higher	Lower	ADITC is positive and "small"
		Flow Through	Lower	Lower	Lower	Lower	ADITC is positive and "large"
	Normalization, cost of service method (option 2)	Base Case	Higher	Lower	Higher	Higher	Normalized ITC "small" compared to ADITC
		Base Case	Lower	Lower	Higher	Higher	Normalized ITC "large"
		Flow Through	Higher	Higher	Higher	Higher	Nominal investment in firm is growing
		Normalization Rate Base Method	Higher	Higher	Higher	Higher	Always

it uses accelerated depreciation in its tax calculations and straight line depreciation for book purposes. The taxes taken into account in determining the cost of service are the "normalized taxes," i.e., actual taxes paid plus the difference in tax payments which results from accelerated depreciation. Additionally, under this version of normalization, which is by far the most common, the deferred tax account, which is the accumulation of the tax reductions which have resulted from the excess of accelerated depreciation over straight line depreciation over the years, is subtracted from the rate base. This ratemaking treatment will reduce required revenues and book profits so long as the deferred tax account is positive. The reductions in required revenues and book profits result solely from exclusion of the deferred tax account from the rate base. Tax payments of the utility will also be lower under this treatment due to the excess of accelerated depreciation over straight line depreciation and because of the reduction in equity profits resulting from exclusion of the deferred tax account from the rate base. Cash flow will initially increase under this treatment due to the tax savings from the higher depreciation deductions. However, as the deferred tax account grows, it may eventually reach a size such that the reduction in permitted revenues which results from its exclusion from the rate base exerts a larger negative effect on cash flow than the positive effect of the tax savings from accelerated depreciation.

The revenue requirements, tax payments, and cash flow of the utility will initially be higher under normalization treatment with the deferred tax account excluded from the rate base than under flow through treatment. However, as the deferred tax account of the normalization utility grows, it may eventually reach a point such that these relationships reverse. Book profits under this form of normalization will be lower than under flow through treatment so long as the deferred tax account is positive.

A second and less common version of normalization of accelerated depreciation is similar to the normalization method described above with the exception that the deferred tax account is not excluded from the rate base. Revenue requirements and book profits under this treatment will both be **higher** than under the base case (no accelerated depreciation or investment tax credit). This occurs because the amount of equity profit of the firm is increased by an amount equal to the interest savings due to debt replacement by the deferred tax account. Tax payments under this treatment are reduced from the base case due to the excess of accelerated depreciation over straight line depreciation, but they will be increased by the increase in profits resulting from the interest savings. Cash flow is always higher under this treatment than under the base case due to savings in both taxes and interest payments. Required revenues, tax payments, cash flow, and book profits of the utility will all be higher under this version of normalization than under flow through treatment so long as accelerated depreciation exceeds straight line depreciation.

If a utility benefits from the investment tax credit (ITC) and the resulting tax reduction is "flowed through" to ratepayers, required revenues (utility rates) and tax payments of the utility will be lower than the base case by equal amounts, just as in the case of flow through treatment of accelerated depreciation. The amount of the reduction in revenues and taxes is a multiple of the actual ITC for the year because tax payments and required revenues are simultaneously determined. There is no change in cash flow or book profits of the utility under this treatment because all of the benefit of reduced taxes is passed on to customers.

If the tax reduction which results from the investment tax credit is "normalized" by the general method (option 1) allowed by the tax law, which is referred to in this study as the rate base method, the utility subtracts the actual amount of the ITC from its rate base and then adds the normalized ITC amount back into the rate base over the life of the asset. This procedure amounts to subtracting the accumulated deferred investment tax credit from the rate base. The taxes taken into account in determining the cost of service are the "normalized" taxes, i.e., actual taxes paid plus the amount of the ITC. Under rate base normalization required revenues, tax payments by the utility, and book profits will be lower than under the base case so long as the accumulated deferred ITC is positive; the reductions result solely from the exclusion of the accumulated deferred ITC from the rate base. Cash flow will initially increase under rate base normalization; however, this situation may eventually reverse if the effect of the rate base adjustment in reducing revenues exceeds the tax savings from the ITC.

Revenue requirements, tax payments, and cash flow of the utility will all initially be higher under rate base normalization of the investment tax credit than under flow through. However, if the accumulated deferred ITC increases in size sufficiently, these relationships eventually will reverse. Book profits under rate base normalization will be lower than under flow through treatment so long as the accumulated deferred ITC is positive, because the deferred tax credits serve as a source of financing for the normalization utility, thus reducing reliance on outside equity capital and the amount of equity profit.

If the tax reduction which results from the investment tax credit is normalized by the ratable flow through method (option 2), which is referred to in this study as the cost of service method, the amount of taxes taken into account as a cost of service ignores the actual amount of ITC and is reduced by the normalized amount of the ITC (the actual ITC divided by the service life of the property). Under this treatment, not only is the accumulated deferred investment tax credit not excluded from the rate base, but it is allowed to earn the rate of return on equity rather than the overall rate of return. Under cost of service normalization profits are higher than the base case due to the interest savings resulting from debt replacement by the accumulated deferred ITC and also because the equity rate of return is allowed on the accumulated deferred ITC. These factors also affect tax payments of the firm in a positive direction; however, the investment tax credit influences tax payments in the opposite direction. Required revenues and cash flow both have conflicting influences affecting their levels compared to the base case.

Under cost of service normalization of the investment tax credit, which is the prevalent method, required revenues, tax payments, and cash flow will all be higher than under flow through treatment so long as investment by the utility is growing in nominal terms. Profits of the utility will always be higher under cost of service normalization than under flow through. Required revenues, tax payments, cash flow, and profits will all be higher under cost of service normalization than under rate base normalization because the assets of utilities are relatively long lived.

Estimated Effects in the Electric Utility Industry

From 1954 to 1976 total operating revenues of the class A and B privately owned electric utilities increased approximately 664 percent, and net income increased nearly 400 percent; while at the same time Federal income tax payments by the utilities **decreased** by 31 percent. In 1954 Federal income taxes claimed 12.1 percent of electric utility operating revenues and 45 percent of net income. By 1976 Federal income taxes claimed only 1.1 percent of operating revenues and 6.1 percent of net income. The aggregate amount of accumulated deferred income taxes in the electric utility industry in 1975 was $6.8 billion and was growing at a rate in excess of $1 billion per year.

During the past 16 years there has been a gradual increase in the overall rates of return earned and interest rates paid by the utilities. The higher overall rates of return during the 1970's are due to higher interest costs rather than higher profit rates because equity rates of return have declined.

The total amount of investment tax credits received by the electric utilities was $1.3 billion in 1976; aggregate accumulated deferred ITC's in the industry amounted to $2.8 billion and were growing by over $1 billion per year. In 1976 the utilities had a backlog of unused investment tax credits aggregating to over half a billion dollars. In the early years of the investment credit over 35 percent of the total amount of credits earned by the electric utilities received flow through regulatory treatment. This percentage began declining in the late 1960's and by 1971 reached 20 percent; a second substantial decline occurred in 1975—1976 so that now only 10.3 percent of electric utility ITC's receive flow through treatment.

For the electric utilities which normalize the benefits of accelerated depreciation, assuming the normalization treatment is the type which excludes the deferred tax account from the rate base (by far the most common method), utility revenues were approximately $805 million less in 1976 than they would have been in the absence of accelerated depreciation. Had these utilities instead been required to flow through the tax benefits from accelerated depreciation, their collective utility rates would have been even lower by about $1.54 billion (3.2 percent of electric utility revenues in 1976). Had the normalization utilities all been accorded normalization treatment without excluding the deferred tax account from the rate base, utility rates would have been about $202 million **higher**

in 1976 than if no accelerated depreciation were allowed. Estimates are also provided in the text for the years 1954 through 1976 and for the impact of the alternative treatments on tax payments, cash flow, and profits as well as for flow through utilities. Combining the revenue and tax estimates for normalization and flow through utilities yields the approximations that accelerated depreciation reduced the aggregate rates of electric utilities by about $1.3 billion in 1976 and decreased their tax payments by about $2.0 billion.

Two special topics are analyzed to illustrate application of the derived results. The first is the so-called phantom tax issue. This argument merely calls attention to the fact that, under normalization treatment, the amount of taxes taken into account for ratemaking purposes exceeds the actual amount of taxes paid by the utilities; the excess is referred to as a "phantom tax." Focusing the phantom tax analysis just on the effects of accelerated depreciation for purposes of illustration, the argument would maintain that customers were overcharged by $1.2 billion in 1976 due to normalization of accelerated depreciation, since this was the net amount of the provision for deferred income taxes. However, in 1976 the combination of accelerated depreciation and normalization treatment reduced taxes paid by the utilities by about $1.5 billion and reduced the utility rates of the normalization utilities by approximately $0.8 billion. Thus, the "overcharge" in 1976 from normalizing accelerated depreciation does not amount to $1.2 billion, but rather $0.7 billion—the amount by which the reduction in taxes exceeds the reduction in rates.

This relationship between tax reductions and rate reductions which result from normalization changes with time. From 1963 through 1970, a period of slower growth for the utilities, the reduction in utility rates actually exceeded the reduction in tax payments. For example, in 1966 the net provision for deferred income taxes—the "phantom tax"—was $49 million. In fact, however, the tax payments were $141 million lower than otherwise due to accelerated depreciation, and the utility rates were $229 million lower. In 1966, therefore, based solely on a consideration of tax payments and utility rates that year, utility customers were **undercharged**, or received **phantom tax benefits,** amounting to $88 million.

The phantom tax advocates favor flow through treatment to normalization because it avoids the tax "overcharge" and thereby should yield lower utility rates. However, this argument, too, is oversimplified. In 1976 the tax "overcharge," according to the phantom tax theory, was $1.2 billion; however, had the normalization utilities been required instead to flow through the benefits of accelerated depreciation, the utility rates of these companies would have been $1.54 billion lower. On the other hand, in 1966 when the tax "overcharge" resulting from normalization was $49 million, the utility rates would have been $134 million **higher** under flow through treatment. Thus, the phantom tax argument draws attention to an important issue, but it is oversimplified to the extent of being misleading and fallacious.

The second special applied topic is the rationale of the "freeze" on further movement toward flow through treatment of accelerated depreciation enacted in the Tax Reform Act of 1969. The reason stated in the Congressional committee reports for this provision was that "flowing through the tax deferral to the customers of a utility . . . results in a doubling of the Government's loss of revenue from the use of accelerated methods of depreciation for tax purposes." However, flow through treatment will "double the Government's loss of tax revenue" compared to the most prevalent form of normalization only if the deferred tax account is equal to zero. If this is not the case, flow through can produce lower tax payments or higher tax payments than normalization. In fact, from 1964 to 1970 normalization of accelerated depreciation by the electric utilities yielded lower tax payments than flow through treatment would have. This occurred because, during these years, the total amount of deferred income taxes excluded from the utility rate base was very large compared to the excess of accelerated depreciation over straight line depreciation charges each year. Thus, ironically, it appears that the 1969 restrictions on the use of flow through treatment of accelerated depreciation, which were adopted to avoid the alleged higher revenue loss under flow through, were in fact enacted during an era when flow through treatment entailed a smaller revenue loss than normalization.

Regarding the alternative regulatory treatments of the investment tax credit, cost of service normalization, which is apparently by far the most prevalent form of ITC normalization, appears to

have produced utility rates during most of the time period 1962—1976 which were even higher than if the ITC did not exist, although not by a large amount. If the normalization utilities used rate base normalization of the ITC, the impact on utility rates would have steadily grown to a reduction of $302 million in 1976, compared to the base case. Flow through treatment, on the other hand, would have produced a somewhat erratic but substantially larger reduction in utility rates, growing to $2.1 billion in 1976. Unlike accelerated depreciation, there is no era during which normalization of the ITC yielded lower utility rates than flow through treatment would have.

Cost of service normalization produces the largest tax payment by the utilities, i.e., the smallest reduction from the base case. Rate base normalization would yield somewhat larger tax reductions, and flow through treatment of the ITC would generate substantially larger tax decreases. Compared to the base case the three treatments of the ITC would have reduced tax payments by the normalization utilities in 1976 by $1.1 billion, $1.2 billion, and $2.1 billion respectively.

Approximations of the aggregate impacts of accelerated depreciation and the investment tax credit on the electric utility industry can be derived from the separate estimates. Assuming that the vast majority of electric utilities exclude the deferred tax account from the rate base and use cost of service normalization for the ITC, in 1976 the two tax benefits were responsible for an aggregate reduction in electric utility rates of approximately $1.5 billion and a decrease in Federal tax payments by the utilities of about $3.3 billion. Additionally, the electric utilities which normalize the benefits of these tax provisions experienced an increase in cash flow in excess of $2.0 billion and a slight reduction in book profits compared to the levels which would have occurred in the absence of the tax provisions.

Dynamic Analysis of Economic Effects

The dynamic effects of the alternative tax and regulatory policies as a utility moves through time can be examined through simulation analysis; several studies have performed such an analysis to study accelerated depreciation. The results of these studies indicate that a utility using straight line depreciation for book and tax purposes will have constant utility rates (in the studies, required revenues are divided by total assets of the utility and the quotient is called the utility rate; constant growth rates are assumed throughout). The rates of the flow through utility will initially decline rather rapidly. Beyond a period of time equal to approximately one-half the average life of the utility's assets the flow through utility's rates will rise. After a period of time equal to the average asset life, the flow through utility's rates will reach a constant level which will be lower than the rates of the straight line utility so long as the growth rate of the utility is positive.

The utility rate of the company that normalizes the benefits of accelerated depreciation (with the deferred tax account excluded from the rate base) will constantly decline during the time period equal to the utility's average asset life. The utility rates for the normalization utility will also stabilize after the time period equal to the utility's average asset life, and the stabilized revenue requirements will always be lower than those of the straight line utility, regardless of the growth rate. The initial utility rates under normalization treatment will be higher than under flow through, but the stabilized rates can be either higher or lower, depending on the growth rate. For a "high growth" utility, flow through will produce lower utility rates indefinitely (assuming all factors, including tax laws, remain unchanged). For lower growth rates flow through will yield lower utility rates during the early years of the tax benefit, and normalization produces lower rates during the later years.

Evaluation of such "overlapping" time streams may be enhanced by present value analysis. Accelerated depreciation amounts to an interest-free loan from the U.S. Treasury to the utility company; the principal of the "loan" is given to the utility in the early years of the lives of each of the utility's assets, and the "loan" must be repaid as these assets approach retirement. The alternative regulatory treatments of accelerated depreciation amount to different treatments of the interest-free loan the utility has received from the Treasury. Under flow through treatment the utility is required to pass the principal amount of the loan directly on to its customers through reduced utility rates. Since the utility must eventually repay the loan to the Treasury,[1] at some point in the future

[1] Depending on one's interpretation, this statement may be entirely correct only over the "full cycle" of the tax policies—i.e., from adoption, through termination of the tax benefit, and the eventual expiration of its effects.

the amount of the loan eventually must be paid back to the utility by its customers. The value of this procedure to the customers is the value of holding the principal of the interest-free "loan" for its duration.

Under normalization treatment with the deferred tax account excluded from the rate base, the utility keeps the principal of the interest-free loan and, prior to repayment to the Treasury, may use it as a source of funding for its capital investment program. However, during this time the utility is required to pay interest to its customers on the amount of the Treasury loans it holds; the interest rate equals the utility's allowed rate of return, and the interest is received by customers through lower utility rates. Therefore, over the long term, customers will benefit from flow through treatment if their discount rate (the interest rate they can earn) is higher than the effective rate of return they will receive from the utility under normalization; they will benefit from normalization if the opposite is true, and they will be indifferent if their discount rate equals their effective rate of return under normalization.

The above conclusions also apply to the relationship between flow through of the investment tax credit and rate base normalization of the ITC. However, no positive discount rate can make consumers prefer normalization of accelerated depreciation with the deferred tax account not excluded from the rate base or cost of service normalization of the investment tax credit; customers will always benefit from flow through compared to these versions of normalization.

Despite these conclusions, the extent to which present value analysis provides information which is directly useful and meaningful for policy decisions regarding the impact of normalization versus flow through treatment on consumers is unclear. This reservation is advanced for four reasons. First is the ambiguity surrounding the appropriate consumer discount rate to use in present value analysis. A relatively low rate (e.g., the interest rate on consumer savings) would lead to the conclusion that normalization yields the lowest utility rates in present value terms; a high consumer discount rate (e.g., the interest rate on consumer debt) would lead to the opposite conclusion. A second potential problem with the present value analysis is that the flow through utility may require a higher rate of return to compensate for its higher risk and lower cash flow; if this is so the present value relationships between normalization and flow through will be altered, perhaps substantially (this issue is explored more fully later).

A third difficulty with the present value analysis is the choice of the appropriate analytical framework. The analysis must refer to a specified time period—50 years, 100 years, or perhaps an indefinite period—and the results may differ depending on the time period. Finally, while there is ambiguity about the appropriate time period, it is of necessity very long, long enough, in fact, to stretch beyond the lifetimes of many present utility customers and certainly long enough for substantial numbers of the original group of customers to have moved to other areas served by other utilities. Thus, if one of the purposes of utility regulation is to avoid subsidizing one group of customers at the expense of another, this factor diminishes the usefulness of present value analysis for this policy choice and emphasizes the importance of appropriate treatment on a year-by-year basis.

It might seem more appropriate to apply present value analysis to the stream of tax payments received by the Treasury in determining the tax collector's most preferred regulatory treatment. However, the first two problems mentioned above—ambiguity regarding the appropriate discount rate and a differential rate of return between flow through and normalization utilities—also affect this relationship. Additionally, enhancing the intended effect of a tax provision may outweigh revenue considerations in the Treasury's priorities.

If the utility companies themselves are viewed as desiring to maximize the present value of future cash flows, the companies will always prefer normalization treatment.

Other Important Factors

The impacts of three other factors—changes in tax policy, the rate of return, and the utility growth rate—on the relationships between flow through and normalization are explored. A reduction in the tax rate will reduce required revenues and tax payments of the utility by equal amounts.

As a result, cash flow and profits of the utility remain unchanged; all of the benefits of a tax rate reduction accrue immediately to ratepayers. On the other hand, an increase in the investment tax credit will increase cash flow to the utility under both versions of normalization. These results imply that a reduction in the tax rate will not directly benefit a regulated company; however, an increase in a tax benefit (e.g., investment tax credit, accelerated depreciation) will benefit a regulated company through higher cash flow if the tax benefit receives normalization regulatory treatment.

The allowed rate of return is the second "other factor" examined. As noted earlier, normalization treatment of tax benefits has a more favorable financial effect on regulated utilities than does flow through treatment, and there are greater risks associated with the future earnings of flow through utilities. These factors imply that flow through utilities should require higher rates of return than normalization utilities to be equally competitive in the capital markets. Relatively few studies which have analyzed the subject argue that the capital market differentiates among utilities on the basis of the ratemaking treatment of tax benefits, but have not been successful in precisely defining and measuring the differentiation, particularly in terms of the cost of capital to utilities. If the estimates of the relationships between normalization and flow through treatments are adjusted to reflect an assumed differential cost of capital, normalization treatment becomes relatively more attractive to consumers, flow through entails less of a revenue loss for the Treasury, and flow through becomes relatively more attractive to the utilities. These shifts do not change the basic pattern of the relationships between flow through and normalization—i.e., flow through still yields lower utility rates, tax payments, and cash flow during early years of the tax benefit and during rapid growth years—but may alter the relative advantages of the alternative regulatory treatments over the long term. For example, it has been determined that relatively small rate of return differentials negate the effect of flow through treatment in yielding utility rates with a lower present value, even with high assumed consumer discount rates.

The third "other factor" examined is the possibility that the tax benefits, in conjunction with the alternative regulatory treatments, may stimulate capital investment in the utilities and, thereby, lead to different growth rates under the alternative treatments. There have been essentially three views expressed regarding the impact of the tax benefits on investment in the regulated industries. One view maintains that accelerated depreciation and the investment tax credit do not stimulate higher levels of investment in the regulated public utilities because the regulatory commissions assure that the investment necessary to assure a high quality of service sufficient to meet the public demand will occur. A second viewpoint is that the tax benefits combined with normalization treatment do stimulate capital investment due to the resulting increased cash flow. The third view is that higher investment will be stimulated by higher demand for the utility's services if the tax benefits are flowed through via reduced utility rates. The careful research which would be necessary to determine which of these viewpoints is correct has not been performed. However, there is some evidence that whichever view is correct, any differential growth rates induced by the tax benefits and regulatory policies are not likely to significantly affect the relationships between normalization and flow through treatments.

An Evaluation

As noted throughout, there are two forms of normalization of both accelerated depreciation and the investment tax credit, and the two normalization forms yield different economic effects. The question arises as to which form of normalization, if either, is the appropriate way to normalize the tax benefits.

One of the purposes of regulation is to force the regulated industries, to the extent possible given the peculiarities of public utility economics, to emulate the economic results of a competitive industry. The value to the utility company of the interest-free "loan" associated with accelerated depreciation is the imputed "interest" on the outstanding principal of the "loan" over the life of the assets. In a competitive industry, competition will force the company to pass this capital cost reduction on to customers in lower prices. Normalization of accelerated depreciation with the deferred tax account excluded from the rate base achieves this result and therefore may be referred to as "economic normalization" of accelerated depreciation.

Unlike accelerated depreciation, the investment tax credit does not represent an interest-free loan to the receiving company but is instead a grant. The ITC has the same impact on the company as if it had received a price reduction on the capital assets it purchases. A price reduction on capital assets will have two effects on a firm: it decreases the amount of investment capital required, and it also reduces the subsequent amount of annual depreciation. However, this result is not permitted by the methods of normalizing the investment tax credit which are presently allowed by the tax code. "Economic normalization" of the ITC would require both exclusion of the accumulated deferred ITC from the rate base and adjustment of annual depreciation charges to reflect the lower cost assets. This treatment would involve essentially combining the two presently allowed forms of normalization of the investment tax credit.

Given all of the accumulated evidence, which ratemaking treatment of the tax benefits is the most appropriate from an economic perspective, normalization or flow through? Depending on the criteria used for judgment and the circumstances under which the regulation will occur, a case can be made for both regulatory procedures. However, based on the criteria employed in this study the case for flow thrcugh treatment appears to be the more limited and risky and is therefore weaker. The argument for flow through treatment can be made in a stronger version or a weaker version as follows:

1. The basic argument for flow through is premised on the belief that the appropriate criterion for choosing between flow through and normalization is the minimization of utility rates.
2. The stronger argument for flow through treatment is premised on the belief that the nominal growth rate of the utility will be very high indefinitely.
3. The argument presumes that the tax benefits which are to be flowed through will not be repealed or reduced in the future.
4. The argument assumes that if it is necessary to allow a higher rate of return under flow through treatment, this will not fully negate the effect of flow through in yielding lower utility rates.

The weaker version of the argument for flow through treatment comes into play if one is unwilling to assume either point 2 or 3 (or both) in the stronger version. In that case the following points are added to points 1 and 4 above:

5. The consumer discount rate must be thought to be relatively high.
6. The avoidance of subsidizing one group of utility customers (the present population) at the expense of another group (the future population of utility customers) must be regarded as a relatively unimportant goal in ratemaking.

If one is unwilling to embrace all of the premises of either the stronger case or the weaker case for flow through, then based on the criteria of this evaluation normalization is the appropriate regulatory treatment. Normalization is consistent with Congressional intent in enacting the tax benefits; it accurately portrays the impact of the tax benefits on the financial condition of the utilities, and it achieves the same economic results as would be achieved in a competitive market. The argument for normalization does not depend on assumptions regarding the utility growth rate, the continuation of tax policies, or relative unconcern about intergenerational subsidies because normalization—economic normalization that is—represents appropriate treatment of the tax benefits on a year-by-year basis, providing utility customers with reduced utility rates which accurately reflect the decreased costs of owning the utility company's capital assets.

There is one other argument that is frequently used to justify flow through ratemaking treatment which does not fit neatly into the above framework. This is the argument that accelerated depreciation really amounts to a permanent forgiveness of tax, not a tax deferral, and, since there is no deferred tax liability there is no justification for a deferred tax account. This argument is based on the observation that if the firm does not decrease in size, its deferred tax account will grow to a certain size and never diminish; and if the firm grows continuously, its deferred tax account will do likewise. The conclusion is drawn that the deferred taxes are never, in fact, paid, and so there is no need to provide for them in a deferred tax account.

This argument is largely one of semantics. Taxes deferred because of accelerated depreciation are, of course, eventually paid. However, in a growing firm, when the previously deferred taxes come due new larger tax deferrals are being received; thus the deferred tax account grows rather than shrinks.

Of course, with the investment tax credit there is no deferred tax liability, and it is in this case that the defects in the "continuous deferral" argument are the most visible. The purpose of accounting procedures and of utility ratemaking procedures is to accurately reflect the impact of transactions on the financial condition of the utility. The investment tax credit does not represent a tax deferral, but it is a tax benefit intrinsically associated with the acquisition of capital assets and designed to reduce the capital costs of owning those assets. The question then is whether the tax benefit should be treated in the accounting system as if it were a one-year reduction in the tax rate, or a reduction in the effective cost of a capital asset which should be amortized over the life of the asset. Clearly for accurate reporting and ratemaking it should be reported as the latter, tax deferral or no.

The "continuous deferral" argument is sometimes advanced in such a way as to imply that so long as the tax payments "continue to be deferred," utility rates will be higher under normalization than they would be under flow through. However, there is no necessary relationship between the "continuous deferral" of taxes and utility rates. The conditions under which utility rates will be lower under flow through treatment are specified above under the stronger and weaker versions of the supporting case for flow through treatment. These conditions are not equivalent to the conditions under which taxes will be "continuously deferred."

II. The Legislative Development of the Tax Law Provisions Concerning Accelerated Depreciation, the Investment Tax Credit, and Their Ratemaking Treatment in the Regulated Utility Industry

This section provides a detailed summary of the development and present status of the law concerning accelerated depreciation, depreciable lives of assets, and the investment tax credit allowed regulated public utilities and the restrictions on treatment of these tax benefits in ratemaking by regulatory agencies. There are two reasons for the presentation of this legislative history. First, nearly every statement regarding the regulatory treatment of these tax benefits includes a reference to the "legislative intent" of Congress in passing the tax provisions. Frequently, selected passages from the legislative history are quoted to support the case for one regulatory treatment or another. However, these selections of Congressional composition are difficult to interpret removed from their context, and the ability of proponents of opposite regulatory treatments to refer to supporting excerpts from the legislative history suggests the need for a broader perspective. Second, the provisions regarding the allowed ratemaking treatment of these tax benefits in the regulated utility industries are among the most complex and unfathomable in the tax code. Hopefully, their understanding will be facilitated by imparting a sense of their legislative development.

A. Depreciation Policy prior to the 1954 Code

For approximately 20 years following the adoption of the income tax in 1913, corporate taxpayers enjoyed considerable freedom in claiming deductions for depreciation. While the Bureau of Internal Revenue approved only straight line depreciation (or the unit of production method generally used in natural resources industries), taxpayers were allowed to choose their own asset useful lives for depreciation. The tax rates were relatively low during this period—the corporate income tax rate never exceeded 12.5 percent—and depreciation deductions were not challenged by the tax collector unless they were clearly unreasonable.

In the early 1930's, tax rates were raised substantially because of the revenue needs during the Depression, and the level of depreciation deductions became the concern of Congress and the Treasury. In December 1933, the House Ways and Means Committee issued a report revealing a sizable increase in depreciation deductions over the previous few years to apparently excessive levels. The report recommended a 25 percent reduction in depreciation deductions over the next three years. The Secretary of the Treasury urged that the move toward more reasonable depreciation deductions be accomplished administratively, and the Committee agreed.

The result was the issuance of Treasury Decision 4422 in 1934; this decision shifted to the taxpayer the burden of proof regarding the correctness of depreciation deductions. This shift and the associated tighter Treasury administrative procedures regarding depreciation led to a general downward adjustment in depreciation deductions.

In 1940, in an effort to facilitate rapid construction of defense related industrial plants, accelerated amortization over a 60-month period was allowed for designated emergency defense related capital investment projects, including public utilities. This special accelerated amortization was also allowed during the Korean War. In 1942, the Treasury issued a new version of Bulletin F, its depreciation rules, and included a guide to depreciable lives for over 5,000 classifications of assets;

these depreciable lives were, in many cases, longer than were in common use at the time. In 1946, the Treasury gave administrative approval to use of the 150 percent declining balance method of accelerating depreciation. In 1953, the Treasury issued Revenue Rulings 90 and 91 in an effort to reduce taxpayer-Treasury disputes over depreciation deductions; these rulings once again put the IRS in the posture of not challenging depreciation deductions unless there was a clear and convincing basis for change.

B. The Internal Revenue Code of 1954: Accelerated Depreciation Becomes Generally Available

The Internal Revenue Code was recodified for the last time in 1954. Up until that time, the tax code was entirely rewritten and reenacted each time a major revision occurred; since that time, revisions, or "reforms," no matter how major, have taken the form of amendments to the 1954 Code.

One of the changes in the 1954 Code was to make several methods of accelerated depreciation available for new assets on a general basis. Prior to enactment of the 1954 Code, most corporations used straight line depreciation, despite the availability of 150 percent declining balance depreciation. Under the 1954 Code the following depreciation methods became generally available:

1) the straight line method;
2) the declining balance method, using a rate not in excess of twice the straight line rate;
3) the sum-of-the-years' digits method;
4) any other consistent method (such as a units of production method), so long as it does not produce depreciation deductions larger than the double declining balance method.

The House version of the 1954 Code also allowed taxpayers to depreciate assets over useful lives 10 percent shorter than those designated in Bulletin F; however, this provision was deleted in the Senate.

The Ways and Means Committee report on the 1954 Code indicated the need for faster depreciation allowances because the existing methods were unrealistic and retarded investment, as follows:

> In many cases, present allowances for depreciation are not in accord with economic reality, particularly when it is considered that adequate depreciation must take account of the factor of obsolescence. The average machine or automotive unit actually depreciates considerably more and contributes more to income in its early years of use than it does in the years immediately preceding its retirement.
>
> There is evidence that the present system of depreciation acts as a barrier to investment, particularly with respect to risky commitments in fixed assets. Comparatively slow rates of write-off tend to discourage replacement of obsolete equipment and the installation of modern, up-to-date machinery. Under long-run peacetime conditions, in the absence of the inflationary pressures existing in the forced-draft economy of the post-war period, present tax depreciation methods might depress business capital expenditures below the level needed to keep the economy operating at high levels of output and employment.[1]

The reports of the Ways and Means Committee and the Finance Committee used the same language to indicate that the liberalized depreciation allowances were expected to stimulate investment, as follows:

> More liberal depreciation allowances are anticipated to have far-reaching economic effects. The incentives resulting from the changes are well timed to help maintain the present high level of investment in plant and equipment. The acceleration in the speed of the tax-free recovery of costs is of critical importance in the decision of management to incur risk. The faster tax writeoff would increase available working capital and materially aid growing businesses in the financing of their expansion. For all segments of the American economy, liberalized depreciation policies should assist modernization and expansion of industrial capacity, with resulting economic growth, increased production, and a higher standard of living.
>
> Small business and farmers particularly have a vital stake in a more liberal and constructive depreciation policy. They are especially dependent on their current earnings or short-term loans to obtain funds for expansion. The faster recovery of capital investment provided by this bill will permit them to secure short-term loans which would otherwise not be available.[2]

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[1] Internal Revenue Code of 1954, Report of the Committee on Ways and Means to Accompany H.R. 8300, 83d Congress, 2d Session, March 9, 1954. P. 22.

[2] Ibid., p. 24, and Internal Revenue Code of 1954, Report of the Committee on Finance to accompany H.R. 8300, 83d Congress, 2d Session, June 18, 1954. P. 26.

C. The Revenue Act of 1962: Guideline Lives and the Investment Tax Credit

In 1961, the Kennedy Administration proposed a number of tax revisions designed to meet five goals; the first goal of which was "to encourage modernization and expansion of American industry." To accomplish this goal, the Treasury administratively changed the allowable depreciable lives of assets, and the Administration proposed to Congress adoption of the investment tax credit.

The reasons for these depreciation revisions were elaborated by Secretary of the Treasury Douglas Dillon as follows:

> I consider our program of depreciation reform, including the investment credit, a central part of our economic policy. Our two most important long-range economic problems today are to stimulate growth in the domestic economy and to eliminate the deficit in our balance of payments.
>
> Comparison with other industrialized countries shows, as would be expected, that those countries with higher levels of investment in productive equipment have higher levels of economic expansion. As for our balance of payments, the most effective way to eliminate that deficit is to increase our exports. Indications are that other countries have been modernizing more rapidly, thus stepping up their productivity, lowering costs and offering stiffer competition to our own producers, not only in foreign markets, but domestic markets within the United States as well. To meet that competition our manufacturers need the increased stimulus to investment and modernization which can best be brought about by these changes in tax policy.
>
> It is no exaggeration to say that at the present time, one of the most important policy goals of the administration is to increase productive private investment, for both domestic and international reasons. We need to make sure that our tax laws are fostering a strong flow of funds into investment in new productive facilities.
>
> It is my conviction that depreciation reform, including both the administrative revision of depreciation guidelines and the investment credit, is not only the best way to bring about a higher investment level, but is absolutely necessary if we are to grow at a more rapid rate and maintain widespread international confidence in our currency.[1]

To reduce depreciable lives, the Treasury adopted a system of "guideline lives" to replace Bulletin F. The new guideline lives system both shortened depreciable lives and greatly simplified the associated regulations. Bulletin F, which contained suggested useful lives for over 5,000 classifications of depreciable property, was replaced by a system of guidelines for 75 broad classes of property used by each industry. The new guideline lives averaged 32 percent shorter than those in Bulletin F, and enabled a 17 percent increase, amounting to $4.7 billion, in depreciation deductions in the first year.[2]

The investment tax credit, along with the new guideline lives, was proposed by the Administration to stimulate investment. Secretary of the Treasury Dillon made this clear in his appearance before the Ways and Means Committee to present the Administration proposals, as follows:

> The President's message urges that "modernization and expansion of the Nation's productive plant and equipment are essential to raise productivity, to accelerate economic growth, and to strengthen our competitive position in world markets." For this purpose, he proposes that an investment credit be provided under the income tax. This credit offers the most powerful and efficient type of tax incentive.
>
> . . . The proposed credit is designed to give the greatest inducement to investment for the revenue loss involved.[3]

A later statement of the Secretary regarding an advantage claimed for the investment credit is interesting in light of the later debate over normalization versus flow through treatment of the investment credit in utility ratemaking:

> Not only is the investment credit superior in raising profitability, it has other advantages as well. In the first place, it is a tax offset, not a deduction from income. The credit will not be booked in corporate records as a cost of operation as would increased writeoffs under accelerated depreciation. Thus, the credit avoids distor-

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[1] Statement by Secretary of the Treasury Dillon, January 18, 1962, before the Joint Committee on Internal Revenue Taxation on Depreciation Reform, reprinted in Annual Report of the Secretary of the Treasury on the State of the Finances, for the Fiscal Year ended June 30, 1962. P. 304.

[2] Statement by Secretary of the Treasury Dillon, July 11, 1962, on the issuance of the New Depreciation Guidelines and Rules, reprinted in Annual Report of the Secretary of the Treasury on the State of the Finances, for the Fiscal Year ended June 30, 1962, Pp. 335—336.

[3] Statement by Honorable Douglas Dillon, Secretary of the Treasury, in Hearings before the Committee on Ways and Means on the President's 1961 Tax Recommendations, 87th Congress, 1st Session, Vol. 1, May 3, 1961. Pp. 17, 18.

tion of the costs on which a firm bases its pricing and other business decisions. Since one of our major goals is to hold the price line so as to strengthen the dollar, this advantage of the credit is of very great significance.[1]

Later, the Secretary reemphasized:

I repeat that the purpose of the investment credit is not to provide general tax reduction for recipients of profit income. Rather, it is to stimulate investment in the most efficient manner. The credit, therefore, should be focused on investment which would not have been undertaken without this inducement, and which will be most responsive to the stimulus which it provides.[2]

The Administration proposed that public utilities not be eligible for the new investment tax credit:

Expenditures by public utilities in connection with business activities subject to public regulation of rates would generally not be eligible for the credit. This rule would exclude electric, gas, water, telephone, and similar public utility corporations. Investments by these regulated monopoly industries are largely governed by determined public requirements and are subject to regulated consumer service charges designed to provide a prescribed after-tax rate of return on investment. [3]

The testimony on the investment credit before the House and Senate committees provides useful background for later developments. Interestingly, the business community, in general, did not support the investment credit, instead arguing in favor of overall revision of the depreciation system and tax reform favorable to capital formation.[4] The testimony of Mr. Leonard Spacek, of Arthur Andersen & Co., was prophetic; he pleaded with the committees to specify in clear language whether the purpose of the new investment tax credit was to grant a general reduction in the effective corporate income tax or specifically to grant a reduction in the cost of property. He argued, "The omission of a forthright statement of the purpose of the investment credit . . . will lead to major confusion and improprieties in accounting for and reporting of the effect of the credit on the income earned by corporations." He argued the credit should be regarded as a reduction in the cost of property and accounted for over the life of the property, i.e., normalized.[5]

The testimony of two representatives of the utility industry is interesting and important because their views on the effects of the investment tax credit on investment by utilities are diametrically opposed. Philip Sporn, President of the American Electric Power Co., argued the credit would stimulate investment by utilities as follows:

The purpose of the tax credit recommended by the President is to stimulate capital investment. A tax incentive available to utilities would stimulate their capital investment—probably to an even greater extent than that of nonutilities—and therefore aid the entire economy and create more jobs.

. . . To appreciate the effects which a tax incentive would have on capital investment by utilities, one must bear in mind that these enterprises, and in particular electric utilities, are the most capital-intensive segment of the economy. The investor-owned electric utility industry alone accounts for about 10 percent of the total annual investment in plant and equipment in the United States . . .

. . . The reduction of fixed charges as a result of the reduction in Federal income taxes would have the effect of making economically feasible capital expenditures for new facilities, including modernization projects, which would otherwise not be economically feasible. Further, by covering or offsetting the carrying charges for a period of time, even though for only a year or two, a tax incentive can make an investment for expansion—in generation, transmission, or distribution facilities—economic immediately rather than later, and thus accelerate the utility's construction program. [6]

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[1] Ibid. P. 21.

[2] Ibid. P. 22.

[3] Detailed Explanation of the President's Recommendation Contained in His Message on Taxation, Submitted by Secretary of the Treasury Dillon, in Hearings before the Committee on Ways and Means on the President's 1961 Tax Recommendations, 87th Congress, 1st Session, Vol. 1, May 3, 1961. P. 47.

[4] For example, see Statement of Joel Barlow, Chamber of Commerce of the United States, Hearings before Ways and Means on the President's 1961 Tax Recommendations, 87th Congress, 1st Session. P. 983.

[5] See Statement of Leonard Spacek in Hearings before the Committee on Finance on the Revenue Act of 1962, 87th Congress, 2d Session, Part 2, April 3, 4, and 5, 1962. P. 823.

[6] Statement of Philip Sporn, President, American Electric Power Co., Inc., in Hearings before the Committee on Ways and Means on the President's 1961 Tax Recommendations, 87th Congress, 1st Session, Vol. 2, May 12, 15, 16, 17, 18, and 19, 1961. Pp. 1567—1570.

Mr. Sporn further argued that investment in the utility industry would be stimulated by increased demand which would be caused by the utility price reduction resulting from the investment tax credit:

To deny the tax credit to investor-owned utilities on the assumption that they will receive a prescribed after-tax rate of return on investment is tantamount to expressing a lack of concern over a relative increase in the cost of rendering utility services as compared with the cost of other goods and services.

The fact of the matter is that, as in the case of other products, the amount of electric energy sold depends upon its price.

. . . The cost of electricity is less today than it was in the depression days of the thirties. The resulting increased demand has in very large part accounted for the tremendous expansion of the electric utility industry in the postwar period and for the dynamic nature of the industry. This increased demand has led to the spending of huge sums for capital investment.

Anything—such as a tax incentive—which will contribute to keeping its cost low, will continue to increase the demand and market for electric energy and for equipment and appliances using electric energy. This in turn will expand construction expenditures and aid the entire economy. [1]

Alexander L. Stott of the American Telephone and Telegraph Co. took exactly the opposite position as follows:

Since the purpose of the incentive tax credit is to promote construction and growth, the question is whether it would have that result. As far as the Bell System companies are concerned it will not. Apparently this is also true of many other companies. On February 8, 1962, the Wall Street Journal published the results of a survey it had made of the plans of 68 large corporations. All except 1 stated that their construction programs would not be significantly affected if the proposal should be enacted, and 29 stated that the credit would not change their capital spending plans at all.

The Bell System's construction program for 1962 is approximately $2.8 billion and will probably remain in this general area in the immediate future. This construction is designed to meet the needs of the public for telephone service and we have an obligation to construct adequate facilities to meet this need. Clearly it would not be economically desirable to build excess plant merely to obtain a tax credit. We have been able, under sound regulation, to obtain from investors the additional amount of new capital required to carry on our construction of new facilities. Therefore, we can see no justification for using tax monies to help finance our expansion. As the proposed incentive credit now stands, our business would obtain substantial benefits whether its construction were increased or not. For example, under a 3-percent rate we estimate that our credit would be in the range of $75 million for 1962. At a 4-percent rate it would be about $100 million, and at an 8-percent rate it would be about $200 million. If we received this credit we would be taking money from the Government which we should obtain from investors and not the taxpayers. [2]

Mr. Stott went on in his statement to advocate basic tax reform, including replacement cost depreciation, as the best approach to stimulating modernization and expansion.

The House Ways and Means Committee report on the bill indicates the intended effects of the investment tax credit as follows:

The investment credit will stimulate investment because—as a direct offset against the tax otherwise payable—it will reduce the cost of acquiring depreciable assets. This reduced cost will stimulate additional investment since it increases the expected profit from their use. The investment credit will also encourage investment because it increases the funds available for investment. Generally, for each $100 of investment business, because of the tax credit, will have $8 more than otherwise would be the case for additional investment. Moreover, since the credit applies only to newly acquired assets, the incentive effect is concentrated on new investment and no revenue is lost in raising the profitability of assets already held by business firms. In addition, it is the hope of the committee that the savings from the credit itself also will be used for new investment in further advancing the economy. [3]

The report does not explain why public utilities were included in the credit despite the contrary recommendation of the Treasury. The Ways and Means bill would have provided an 8 percent credit

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[1] Ibid. The American Electric Power Co. followed through on the views stated when it later directed its five operating subsidiaries to apply for rate reductions on the basis of enactment of the investment credit. See Statement of Senator Morse, Congressional Record, 88th Congress, 2d Session. P. S.1805.

[2] Statement of Alexander L. Stott, Vice President and Comptroller of American Telephone and Telegraph Co., in Hearings before the Committee on Finance on the Revenue Act of 1962, 87th Congress, 2d Session, Part 3, April 6, 9, and 10, 1962. Pp. 897—902.

[3] Revenue Act of 1962, Report of the Committee on Ways and Means to accompany H.R. 10650, 2d Session, March 16, 1962. P. 8.

generally and a 4 percent credit to public utilities. The reasons for granting a lower credit to utilities were stated as follows:

> The investment credit in the case of most regulated public utilities is in effect 4 percent rather than 8 percent. The smaller credit is provided in such cases because much of its benefit in these regulated industries is likely to be passed on in lower rates to consumers, thereby negating much of the stimulative effect on investments. Moreover, the size of the investment in regulated public utilities, such as electric companies, local gas companies, telephone companies, etc., will in large part be determined by the growth of other industries, rather than their own.[1]

Interestingly, the reasons the Committee provided a lower credit to public utilities are almost identical to those given by the Treasury for recommending exclusion. The statement by the Committee seems to indicate a conviction that the benefit of the credit would flow through to utility customers, and that the credit would not stimulate investment by the utilities in any great measure, interesting convictions in light of later developments.

The Senate Committee was even more explicit in describing the reasons for adopting the investment tax credit as follows:

> The objective of the investment credit is to encourage modernization and expansion of the Nation's productive facilities and thereby improve the economic potential of the country, with a resultant increase in job opportunities and betterment of our competitive position in the world economy. The objective of the credit is to reduce the net cost of acquiring new equipment; this will have the effect of increasing the earnings of new facilities over their productive lives and increasing the profitability of productive investment. It is your committee's intent that the financial assistance represented by the credit should itself be used for new investment, thereby further advancing the overall national interest in greater productivity, a healthy and sustained economic growth, and a better balance in international payments.[2]

The Finance Committee bill provided a 7 percent credit generally and a 3 percent credit to public utilities, but the Committee report did not indicate the reasons for including utilities or for providing them with a lower credit.

When the Revenue Act of 1962 reached the Senate floor, an amendment was offered by Senator Proxmire to delete the 3 percent investment credit for public utilities. Senator Proxmire argued that if the credit were flowed through it would permit a miniscule reduction in rates, and that because the demand for public utility services is inelastic, the price reduction would not yield a significant increase in demand. He also argued that if the benefits of the credit accrued to the utilities, it would not increase investment because excess capacity in the utility industry was already large. Several Senators entered the debate on both sides of the issue, and the Proxmire amendment was defeated.[3]

The conference report on the Act further underscored the intention that the investment tax credit stimulate investment in both nonregulated and regulated industries as follows:

> It is the understanding of the conferees on the part of both the House and the Senate that the purpose of the credit for investment in certain depreciable property, in the case of both regulated and nonregulated industries, is to encourage modernization and expansion of the Nation's productive facilities and to improve its economic potential by reducing the net cost of acquiring new equipment, thereby increasing the earnings of the new facilities over their productive lives.[4]

D. The Revenue Act of 1964: Required Normalization of the Investment Tax Credit by Federal Regulatory Agencies

The Revenue Act of 1964 was the legislation which enacted the individual and corporate income tax cuts, along with many substantive tax reform provisions, which had been proposed by President Kennedy in the previous year. Several modifications in the investment tax credit were proposed by the Administration and the Treasury, but the treatment of the credit by regulatory agen-

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[1] Ibid.

[2] Revenue Act of 1962, Report of the Committee on Finance to accompany H.R. 10650, 87th Congress, 2d Session, August 16, 1962. Pp. 11—12.

[3] Congressional Record, 87th Congress, 2d Session, 1962, pp. S 17365—S. 17396, reprinted in Legislative History of H.R. 10650, the Revenue Act of 1962, Public Law 87—834, Committee on Ways and Means, 90th Congress, 1st Session, part 3.

[4] Revenue Act of 1962, Conference Report to accompany H.R. 10650, 87th Congress, 2d Session, October 1, 1962. P. 14.

cies was not addressed. In fact, when asked his position on the provision included in the bill (see below), Treasury Secretary Dillon replied:

> This was not a Treasury recommendation and, in fact, it is not a matter of basic concern to the Treasury as to how regulatory agencies handle their own job.[1]

However, the treatment of the investment credit had been the subject of considerable controversy in the accounting profession and among the regulatory agencies. After considerable debate, the Accounting Principles Board of the American Institute of Certified Public Accountants (AICPA) had voted by a one-vote margin (the "big-eight" accounting firms split four-to-four) to issue a bulletin prescribing normalization as the appropriate accounting treatment for the investment tax credit. Subsequently, the Securities and Exchange Commission repudiated the AICPA bulletin as controlling the accounting applicable to public utilities; this was the first such action by the SEC in its 29 year existence.[2] Additionally, the state utility regulatory commissions in California, Connecticut, Kentucky, New York, Ohio, Tennessee, Vermont, Virginia, West Virginia, and Wisconsin had decided to require flow through treatment of the investment credit,[3] as had the Federal Communications Commission in a lengthy and detailed decision[4] and the Interstate Commerce Commission.[5] The Federal Power Commission also decided to require flow through of the investment credit while the bill was pending in the Senate.[6]

The accounting treatment of the investment credit received very little attention in the House hearings. The only witness to devote substantial time to the issue was Thomas M. Venables of the National Rural Electric Cooperative Association. He argued against normalization of utility tax benefits from accelerated depreciation and the investment credit as follows:

> We hold that once a regulated monopoly utility achieves a fair and reasonable rate of return, as determined by appropriate regulatory agencies, profits in excess of such fair rate should be returned to its consumers on a pro rata basis pending a reduction in electric power rates. This has not been the case. Profits resulting from Federal income tax deferments, or forgiveness (for example, the 3-percent investment credit) have not benefited the consumer, nor contributed notably to the growth of the industry or the economy, nor are they doing so at this time. Even though the investment credit is now in effect, the utilities have cut back their investment plans by 19 percent for the second and third quarters of 1963, according to the Edison Electric Institute and the American Gas Association as reported in Newsweek, April 15, 1963.[7]

Mr. Venables presented a table of deferred taxes due to accelerated depreciation showing that electric utilities had "collected from consumers for taxes but not paid as taxes" approximately $1.5 billion as of December 31, 1961.

When the bill emerged from the Ways and Means Committee, it contained a section which required normalization of the investment tax credit by the Federal regulatory agencies. The reasons for this provision and its description presented in the House and Senate Committee reports are substantially the same. The reasons stated are as follows:

> A fourth modification in the investment credit relates to the treatment of the credit by regulatory bodies. Both the House and Senate committee reports on the investment credit, as well as the statement of the managers on the part of the House with respect to the conference (and the floor statement on the Senate with respect to the conference report) state that the purpose of the investment credit was to stimulate investment by reducing the net cost of acquiring depreciable assets. This is shown by the following quotations.
>
> [Quotations deleted. See quotations from Committee reports and conference report in previous subsection.]

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[1] Statement inserted into the Congressional Record, 88th Congress, 2d Session, 1964. P. S. 1805 by Senator Morse.

[2] Statement of Donald C. Cook, President, American Electric Power Co., Inc., in a Panel Discussion: The Great Lakes Conference of Railroad and Utilities Commissioners, White Sulphur Springs, West Virginia, June 21, 1963. Reprinted in Congressional Record, 88th Congress, 2d Session, 1964. P. S. 1805.

[3] Ibid.

[4] Federal Communications Commission, docket No. 14850, July 31, 1963.

[5] Interstate Commerce Commission, docket No. 34178, February 1, 1963.

[6] Federal Power Commission, docket No. R-232, January 23, 1964.

[7] Statement of Dr. Thomas M. Venables, Representing the National Rural Electric Cooperative Association, in Hearings before the Committee on Ways and Means on the President's 1963 Tax Message, 88th Congress, 1st Session, Part 5, March 19 and 20, 1963. P. 2768.

Despite the statements cited above, the Federal Communications Commission has indicated that it is its policy that any benefits from the investment credit made available by the Revenue Act of 1962 should "flow through" immediately to the customers. In addition, the staff of the Federal Power Commission has recommended the same position. This is clearly contrary to the intent of Congress in enacting this provision and as a result this bill contains a provision to the effect that it was and is not Congress' intention that the Federal regulatory agencies require the benefit of the investment credit to "flow through" in this manner.[1]

The description of the provision is as follows:

Another investment credit provision in the bill makes it clear that it was the intent of Congress in providing an investment credit in 1962, and that it is the intent of Congress this year in repealing the reduction in basis required with respect to investment credit assets, to provide an incentive for the modernization and growth of private industry, including regulated industries.

As a result, the bill specifies in two paragraphs the intent of Congress as to the treatment of the investment credit by Federal regulatory agencies. It states in the case of public utility property that these regulatory agencies are not, without the taxpayer's consent, for the purpose of establishing the cost of service of the taxpayer, to treat more than a proportionate part of an investment credit (determined with reference to the useful life of the property) as reducing the taxpayer's Federal income tax liabilities. Nor are they to accomplish a similar result by any other method. Public utility property for this purpose includes property of electric, gas, water, telephone, and telegraph public utilities which under present law is eligible for what in effect amounts to a credit of 3 percent.

The bill also provides restrictions for Federal regulatory agencies in the case of other regulated companies—such as natural gas pipelines, railroads, airlines, truck and bus operators, and other types of public carriers—which receive an investment credit of 7 percent of the investment in qualified property. It provides that Federal regulatory agencies are not, without the taxpayer's consent, for purposes of establishing the cost of service of the taxpayer, to treat any investment credit allowed him as reducing his Federal income taxes. Nor are the agencies to accomplish a similar result by any other method.

As indicated above in the case of the public utility property Congress is merely directing the Federal regulatory agencies not to "flow" the benefits of the investment credit "through" to the customers over any period shorter than the useful lives of the property involved. In the case of the other property Congress is directing the Federal regulatory agencies not to "flow" this benefit "through" at any time. This difference in treatment is attributable to the fact that Congress provided what in effect is a 3-percent credit for the public utility property rather than 7-percent credit because in 1962 it was recognized that in their case part of the benefit from the investment credit would be likely to be passed on eventually to the customers in lower rates.[2]

This provision received the attention of several witnesses before the Senate Finance Committee. Among them were representatives of the Federal Power Commission, the Public Utilities Commission of California, and the Public Service Commission of Wisconsin, who opposed the provision for economic reasons and because of its intrusion into the regulatory process. A statement submitted on behalf of the Illinois Commerce Commission supported the provision, and several statements were submitted by industry spokesmen.[3]

When the bill reached the Senate floor, Senator Proxmire offered an amendment to delete the provision requiring normalization of the investment tax credit by the Federal regulatory agencies; the amendment was debated at length and defeated.[4]

The language of the Revenue Act of 1964 (P.L. 88—272) concerning normalization of the investment tax credit, which provides an unusual statutory embodiment of legislative intent, is as follows:

TREATMENT OF INVESTMENT CREDIT BY FEDERAL REGULATORY AGENCIES—It was the intent of the Congress in providing an investment credit under section 38 of the Internal Revenue Code of 1953, and it is the intent of the Congress in repealing the reduction in basis required by section 48(g) of such Code, to provide an incentive for modernization and growth of private industry (including that portion thereof which is regulated).

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[1] Revenue Act of 1963, Report of the Committee on Ways and Means to accompany H.R. 8363, 88th Congress, 1st Session, September 13, 1963. Pp. 36—37, and

Revenue Act of 1964, Report of the Committee on Finance to accompany H.R. 8363, 88th Congress, 2d Session, January 28 1964. Pp. 42—43.

[2] Ibid. Pp. 38—39, and pp. 44—45, respectively.

[3] Hearings before the Committee on Finance on the Revenue Act of 1963, 88th Congress, 1st Session, Part 4, November 12—15, 21, and 22, 1963. Pp. 1797—1887.

[4] Congressional Record, 88th Congress, 2d Session, 1964. Pp. S.1955—S.2003.

Accordingly, Congress does not intend that any agency or instrumentality of the United States having jurisdiction with respect to a taxpayer shall, without the consent of the taxpayer, use—

(1) in the case of public utility property (as defined in section 46(c)(3)(B) of the Internal Revenue Code of 1954), more than a proportionate part (determined with reference to the average useful life of the property with respect to which the credit was allowed) of the credit against tax allowed for any taxable year by section 38 of such Code, or

(2) in the case of any other property, any credit against tax allowed by section 38 of such Code

to reduce such taxpayer's Federal income taxes for the purpose of establishing the cost of service of the taxpayer or to accomplish a similar result by any other method.[1]

E. The Tax Reform Act of 1969: A "Freeze" on the Treatment of Accelerated Depreciation by Regulatory Agencies and Repeal of the Investment Tax Credit

The investment tax credit and accelerated depreciation on buildings were temporarily suspended as of October 19, 1966 (Public Law 89—800) in an effort to restrain the overheated economy. The suspension period was originally scheduled to last until December 31, 1967, but was cut short to March 9, 1967 (Public Law 90—26)[2] because the inflationary forces in the economy appeared to have eased. Neither the Act suspending nor the Act reinstating the tax benefits affected their accounting treatment by public utilities.

The Tax Reform Act of 1969 repealed the investment tax credit, again because of a desire to restrain the economy, and instituted rules regarding the allowable accounting treatment of accelerated depreciation by public utilities.

These rules were a response to the trend among regulatory agencies to require flow through treatment of accelerated depreciation, and eventually to impute accelerated depreciation to utilities which, in fact, used straight line depreciation, and to flow through the imputed tax savings. This trend began with two decisions in Pennsylvania in late 1955 and early 1956 which required flow through treatment of accelerated depreciation. During the late 1950's and early 1960's, several other

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[1] Revenue Act of 1964, Public Law 88—272, Section 203(e).

[2] During the Senate floor debate on this legislation Senator Metcalf offered an amendment to limit application of the 1964 normalization requirement to Federal regulatory agencies. Senator Long rose to clarify that the requirement already was limited to Federal agencies, and the following interesting exchange occurred:

> Mr. METCALF. Mr. President, I should like to have the attention of the Senator from Louisiana so that I may ask him some questions about the bill.
>
> As I understand the bill—and I ask the Senator from Louisiana to respond—if tax credits are given, if the 3-percent credits for utility companies are given, does the bill prohibit any State from passing through to the consumer? Is that correct?
>
> Mr. LONG of Louisiana. Present law states that the credit shall be passed through over a period shorter than the life of the property only with the consent of the company involved.
>
> Mr. METCALF. Yes. The company involved, whether it be Consolidated Edison, Montana Power, whatever it is—unless the company consents—any public service commission or regulatory commission of the various States—
>
> Mr. LONG of Louisiana. Oh, no.
>
> Mr. METCALF. Cannot order it to be passed through—
>
> Mr. LONG of Louisiana. The Senator is slightly in error. What the present law says—
>
> Mr. METCALF. I am not in error. I am merely asking a question.
>
> Mr. LONG of Louisiana. Present law applies only to Federal regulatory agencies—it does not apply to a State agency. Present law provides that a Federal agency cannot require a passthrough of the investment credit to the user in the case of those covered by section 203(e)(1) of the Revenue Act of 1964 unless the company agrees to it. That does not bind a State regulatory agency. One of these could follow this policy if it wanted to. They could require an immediate and full passthrough so far as they are concerned without the consent of the company.
>
> Mr. METCALF. I am delighted to have that interpretation of the bill, because it was my understanding from reading the bill that a State regulatory commission could not order a passthrough whether it benefited the 3-percent credit under the bill.
>
> Mr. LONG of Louisiana. As I recall it, we do not require that. My understanding is that we simply instruct the Federal regulatory agencies. Frankly, I say to the Senator, I have considerable doubt that we should try to instruct State regulatory agencies.
>
> Mr. METCALF. I have, too. That is why my amendment was submitted.
>
> Mr. LONG of Louisiana. It would be more appropriate that a State agency would decide for itself on this policy question. We would propose to decide it with regard to our own agencies, but we do not propose to decide that with regard to a State agency. That falls in the area of States rights. They have the same rights we have; namely, the right to be right and the right to be wrong.
>
> Congressional Record, 90th Congress, 1st Session, 1967. P. S. 5852.

States followed Pennsylvania's lead. The proper handling of accelerated depreciation had caused a controversy in the accounting profession in the 1950's, just as treatment of the investment tax credit was to in the 1960's. In 1954, when accelerated depreciation first became available, the American Institute of Certified Public Accountants (AICPA) issued an opinion that deferred income taxes resulting from accelerated depreciation ordinarily did not have to be recognized. A debate over the issue occurred within the accounting profession during the next four years (and to some extent, is still occurring), and in 1958 the AICPA issued a revised opinion that in most circumstances deferred income taxes must be recognized. However, there was an exception to the rule for public utilities using flow through treatment.

A new direction in regulatory treatment of accelerated depreciation appeared in a Federal Power Commission decision in 1966; in a case involving a gas utility using straight line depreciation, the FPC decided to determine allowable rates as if the utility used accelerated depreciation and flowed through the imputed tax benefits. The utility involved had earlier used accelerated depreciation and normalized the benefits, but once the FPC began requiring flow through treatment of accelerated depreciation, the utility reverted to straight line depreciation. The courts upheld the FPC decision and said the validity of the decision did not rest on the utility's reversal of depreciation methods. The California Commission made two ratemaking decisions involving telephone utilities in 1968 and 1969, both of which imputed accelerated depreciation and used flow through treatment for utilities which, in fact, used straight line depreciation.[1]

The accounting provisions in the Tax Reform Act of 1969 follow very closely the Treasury recommendations on the subject. Edwin Cohen, Assistant Secretary of the Treasury for Tax Policy, appeared before the Ways and Means Committee on April 22, 1969, to present the tax proposals announced by the President the previous day. He addressed the issue of the accounting treatment of accelerated depreciation by public utilities and regulatory agencies and, after explaining normalization and flow through treatment, continued as follows:

> Legislation has been introduced to provide that the regulatory commissions should not be able to require companies to take these tax benefits nor to require that the benefits be "flowed through."
>
> The Treasury Department does not believe that the Internal Revenue Code should deal with the regulatory process to the extent of specifying how the tax savings should be handled if a particular corporation freely adopts accelerated depreciation.
>
> On the other hand, the tax law quite explicitly provides a choice for taxpayers between the use of accelerated depreciation and straight-line depreciation. We feel that a regulatory commission should not take advantage of this election by providing that it will only give an allowance in the rate calculation for the Federal tax that would be due if the company had adopted accelerated depreciation. Where a taxpayer has already elected accelerated depreciation, the regulatory commission should have the leeway to continue to make the allowance for Federal tax on the basis of continued use of accelerated depreciation.
>
> If the Congress takes no action in this situation and if utility commissions generally proceed to treat companies as though they had adopted accelerated depreciation and require this amount to be flowed through, the total impact on the revenues, over the next few years, could build up to an annual loss of $1.5 billion. If on the other hand, the Congress enacted legislation that would in all circumstances prohibit utility commissions from flowing through tax savings preceeds of accelerated depreciation, there could be a short-term revenue loss as high as $0.6 billion due to some companies feeling free to adopt accelerated depreciation.
>
> In view of the large revenue loss that is possible in any change from the present situation, we think it appropriate for this Congress to enact legislation which would tend to preserve the present state of affairs. This can best be done by preserving the option to use straight-line depreciation to companies that have so far been using a straight-line depreciation. Accordingly, we recommend that Federal and state regulatory commissions be precluded from requiring a company to adopt accelerated depreciation or computing its income for ratemaking purposes as if it had done so unless the utility voluntarily elects accelerated depreciation for tax purposes.[2]

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[1] This scenario is taken largely from Harrison, William H., Accelerated Depreciation: Effect on Public Utilities, Proceedings of the Annual Conference of the National Tax Association, 1969. Pp. 200—204. See also: Arthur Andersen & Co., A Study of the Treatment of Construction Work in Progress and Tax Timing Differences for Ratemaking Purposes in the Electric Utility Industry, a study for the Federal Energy Administration, March 25, 1977. Pp. 40—42.

[2] Statement of the Honorable Edwin S. Cohen, Assistant Secretary of the Treasury for Tax Policy, before the Committee on Ways and Means on the President's Tax Program, April 22, 1969, in Tax Reform Proposals, Committee on Ways and Means, 91st Congress, 1st Session, April 22, 1969. Pp. 55—57.

This recommendation was the subject of extensive testimony before the Ways and Means Committee by a wide spectrum of witnesses, including a number of industry spokesmen and representatives of the Federal Power Commission, the Interstate Commerce Commission, the Federal Communications Commission, the Civil Aeronautics Board, and the State regulatory agencies of Arizona, California, Illinois, and the Virgin Islands.[1] The Committee print summarizing this testimony, which was prepared by the staff of the Joint Committee on Internal Revenue Taxation, is reproduced as an appendix to this subsection.

Part of the exchange between the Chairman of the Ways and Means Committee, Wilbur Mills, and one of the witnesses is particularly interesting because of its apparent influence on the structure of the legislative provision. The Chairman inquired of Dr. Homer Black, Chairman of Accounting of the U.S. Independent Telephone Association, how a Federal tax provision could be structured to be controlling on the ratemaking decisions of State regulatory commissions. Dr. Black responded to the question in a letter to Congressman Mills. The exchange, reproduced in the hearings, was as follows:

The CHAIRMAN. To get back to my basic concern, we have no authority over intrastate ratemaking. That is the function of the State agencies. Even our Federal Power Commission, Federal Communications Commission, all of these agencies, do not get into that area. They regulate where there is interstate operations, not in solely intrastate operations.

The Internal Revenue Code is confined of course to tax matters. I am wondering if we tell the taxpayer how to determine his depreciation, even if we say for ratemaking purposes, whether some commissions certainly would raise the question of the authority of Congress to get over into strictly intrastate affairs. I am trying to be as helpful as I can be in bringing a chaotic situation back to a reasonable one.

That is why I am asking you if there is an alternative tax measure that you think we could enact that would be recognized, accepted, and binding upon the States in making rates.

Dr. BLACK. I certainly understand the question thoroughly. This is a matter that I would like to give some further thought and consultation with my colleagues and perhaps file a brief statement later.

The CHAIRMAN. I wish you would.

Dr. BLACK. At the spur of the moment I do not see any sound recommendations.

(The information referred to follows:)

Re H.R. 6659

Tallahassee, Fla., *April 18, 1969*

Hon. Wilbur D. Mills,
Chairman, Committee on Ways and Means,
U.S. House of Representatives,
Longworth House Office Building, Washington, D.C.

Dear Chairman Mills: In the course of my testimony before your Committee on March 26, 1969, you asked for my suggestions with respect to an alternative to H.R. 6659, if the Committee felt that in its present form there might be some question as to its validity insofar as applicable to state regulatory agencies.

May I say first that General Telephone & Electronics Corporation, a member of the United States Independent Telephone Association, has received an opinion from Messrs. Covington & Burling, dated April 17, 1969 that the Bill, if enacted, would be constitutional and legally binding on the state agencies. A copy of the Covington & Burling opinion is enclosed for the information of the Committee. I have read this opinion, and while I am not an attorney, concur in its finding that H.R. 6659 (1) would preserve the effectiveness of the accelerated depreciation provisions of the Internal Revenue Code of 1954, as applied to regulated industries, and (2) would be binding in effect on the state regulatory commissions.

However, a suggested alternative to H.R. 6659, to be applied as a specific rule to the regulated public utility *taxpayer,* rather than to a regulatory agency, would be somewhat as follows:

> The Internal Revenue Code would be amended to provide the following general rule for taxpayers which are regulated public utilities: A regulated public utility which uses straight line depreciation for book, financial reporting, and rate making purposes may use accelerated depreciation in computing its income tax liability only if it establishes an appropriate normalization reserve for book, financial reporting, and rate making purposes. There might be an exception to the rule as follows (to protect the rights of those utilities which are presently using flow-through in accounting for accelerated tax depreciation): A regulated utility which has already elected to use accelerated depreciation for tax purposes and straight line depreciation for book, financial reporting, and rate making purposes, without establishing a normalization reserve, may continue to do so, unless it makes an election in such form as the Secretary of the Treasury may prescribe (such election to be irrevocable without the consent of the Secretary of the Treasury) to have the general rule applicable to it.

I, of course, have not attempted to draft proposed statutory language, and the above thoughts are designed only to provide the substance of a possible alternative approach. If I can be of any further service, please let me know.

Respectfully,

Homer A. Black[2]

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[1] Hearings before the Committee on Ways and Means on Tax Reform, 1969, 91st Congress, 1st Session, Part 10, March 24 and 25, 1969. Pp. 3535—3806, and Part 11, March 26 and 27, 1969. Pp. 3807—3969.

[2] Hearings before the Committee on Ways and Means on the Subject of Tax Reform, 91st Congress, 1st Session, Part II of 15, March 26 and 27, 1969. Pp. 3850—3851.

The full explanation of the reasons for the provision and the description of the provision implementing the Treasury recommendation[1] as provided in the report of the Ways and Means Committee was as follows:

GENERAL REASONS FOR CHANGE.—The trend of recent years has been that regulated utilities previously on straight line depreciation have been shifting to various forms of accelerated depreciation. At the same time, regulatory agencies which had previously permitted the tax deferrals resulting from accelerated depreciation to be "normalized" (computing the greater Federal income tax liability that would have resulted from use of straight line depreciation and adding this amount to a reserve account for future tax liability on the regulated utility's books of account), have been shifting toward requiring the flowing through to customers currently of the tax deferrals resulting from the use of accelerated depreciation. Finally, within the past 12 months several agencies have imputed accelerated depreciation in determining the Federal tax expense of the utilities, and flowed through the resultant tax deferrals, even though the particular utilities involved were in fact using straight line deprecation and in fact were paying the greater current Federal income taxes resulting from the use of that method of depreciation.

In general, flowing through the tax deferral to the customers of a utility that is already earning its maximum permissible profit on its investment, results in a doubling of the Government's loss of revenue from the use of accelerated methods of depreciation for tax purposes. This is because the current tax reduction reduces the rates charged to customers, which in turn reduces the utility's taxable income and therefore reduces its income tax. This second level of tax reduction is passed on to the utility's customers, with the same effect. Assuming no other factors become involved, the total loss of taxes may be computed as the initial loss divided by the excess of 100 over the utility's marginal tax rate. At the present surcharge rates, the total tax loss is 212 percent of the initial loss; without the surcharge, the total loss is 192 percent of the initial loss.

Your committee has been advised that, if those trends were to continue, there could very shortly be a revenue loss of approximately $1.5 billion; some estimates indicate that the loss might be considerably closer to $2 billion per year. Your committee has determined that the likely revenue loss from wholesale shifts to accelerated depreciation and flow through is unacceptable at this time.

Consideration has been given to suggestions by the Federal Power Commission and others that regulated utilities no longer be permitted to use a method of depreciation other than straight line. However, your committee concluded that, in too many cases, this would place regulated utilities at an unfair competitive disadvantage, both in terms of the sale of their products or services and their attractiveness to equity investors. Also, this would result in prompt, substantial, and widespread utility rate increases.

Accordingly, your committee has determined in general to "freeze" the current situation regarding methods of depreciation in the case of those companies in what are, by and large, the more healthy utility industries. No change is made regarding utility industries whose members are, by and large, earning well below their permitted rates of return.

EXPLANATION OF PROVISIONS.—Your committee's bill provides that, in the case of existing property, the following rules are to apply:

(1) If straight line depreciation is presently being taken, then no faster depreciation is to be permitted as to that property.

(2) If the taxpayer is taking accelerated depreciation and is "normalizing" its deferred taxes, then it must go to the straight line method unless it continues to normalize as to that property.

(3) If the taxpayer is taking accelerated depreciation and flowing through to its customers the benefits of the deferred taxes, then the taxpayer must continue to do so, unless the appropriate regulatory agency permits a change as to that property.

The Taxpayer's present method of depreciation is to be determined by reference to its latest tax return filed before July 22, 1969 (the date your committee's tentative decisions on this subject were published). Property placed in service after the taxable year to which that return relates and before January 1, 1970, will be treated in the same manner as the same kind of property is treated on that return. The taxpayer's present method of treating tax deferrals will be determined by reference to its regulated books of account as of July 22, 1969.

In the case of new property (property completed or acquired after December 31, 1969) the bill provides that if the taxpayer presently flows through to its customers the benefits of deferred taxation, then it must stay on accelerated depreciation and flow through unless the regulatory agency permits it to change. In all other cases, accelerated depreciation is to be permitted only if the utility normalizes the deferred income taxes. (The taxpayer will be permitted to elect straight line depreciation as to such new property and, if the taxpayer seeks to use accelerated depreciation, the regulatory agency will be permitted to in effect force the taxpayer to straight line depreciation by not permitting normalization. The regulatory agency will not, in such cases, be permitted to require flow through of deferred taxes.)

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[1] In the Committee's tentative decisions, prior to final action on the bill, it had decided to deny accelerated depreciation on utility property. This decision was reversed in final markup as reflected in the Committee report; see Press Releases Announcing Tentative Decisions on Tax Reform Subjects, Committee on Ways and Means, 91st Congress, 1st Session, May 27, July 11, and July 25, 1969. P. 24.

The rules provided by the bill are to apply to property used predominantly in the trade or business of the furnishing or sale of: electrical energy, water, sewage disposal services, gas through a local distribution system, telephone services (other than those provided by COMSAT), or transportation of gas, oil (including shale oil), or petroleum products by pipeline, if the rates are regulated by a utilities commission or similar agency.

Where normalization is used, this bill in no way diminishes whatever power the agency may have to require that the deferred taxes reserve be excluded from the base upon which the utility's permitted rate of return is calculated.

It is expected that regulations will provide for proper allocation of property where more than one agency supervises the activities of a utility, if the several agencies apply different rules to the utility's property.[1]

During consideration of the bill by the Finance Committee, the Treasury presented a memorandum stating its position on the various provisions of the legislation. On this section, the Treasury recommended modification of the House bill to insure that utilities which were required by the provision to normalize must normalize the full tax benefit which results from accelerated depreciation. The Treasury recommendation was as follows:

The normalization method of accounting is defined in proposed new section 167(1)(5)(B) of the Code. This section provides that a taxpayer uses the normalization method of accounting only if he computes his tax expense for purposes of establishing his cost of service and of reflecting operating results in his regulated books of account by using a method of depreciation other than the method he used for purposes of computing his allowance for depreciation for tax purposes; he must also make adjustments to a reserve for deferred taxes to reflect the tax deferral resulting from the use of such different methods of depreciation. This provision of the bill should be clarified to indicate that such a taxpayer must compute both his tax expense (including any deferred tax expense) and his depreciation expense, for the purposes of establishing his cost of service and for reflecting operating results in his regulated books of account, based upon the same method of depreciation. This will prevent a taxpayer from computing his tax expense by a method only nominally different from the method used for tax purposes so that in effect he flows through most of the saving. To qualify for accelerated depreciation, the normalizing taxpayer must normalize to the full extent of the difference between the tax which would be payable under the method of depreciation for book purposes and that which is paid under the method used for tax purposes.[2]

The report of the Finance Committee on the bill provided a statement of the reasons for change and explanation of the provisions similar to, although somewhat abbreviated from, the section in the House report. In addition, the Finance Committee report highlighted the differences between the House bill and the Finance Committee bill, the first of which was described as follows:

The committee amendments, while in most respects the same as the House provisions, differ in one principal area. The amendments permit an election to be made within 180 days after the date of enactment of the bill for a utility covered by this provision to shift from the flow-through to the straight-line method, with or without the permission of the appropriate regulatory agency, or permit it with the permission of the regulatory agency to shift to the normalization method (that is, to come under general rules of the bill).

This election applies both as to new and existing property. In order to provide sufficient time for the regulatory agency to authorize an electing company to change its books from flow-through to normalization and to use normalization in computing the rates charged to the company's customers, the bill provides that the election will take effect at the start of the company's first taxable year beginning after December 31, 1970. If the books and rates have been conformed to normalization by then, the company may continue to use accelerated depreciation so long as it continues to normalize; if not, the company must use only straight line depreciation. Since the company would no longer be permitted to use accelerated depreciation (unless the agency later permits it to normalize), the agency would not be able to impute the use of accelerated depreciation with flow-through. In other words, a company that makes this election would be under the general rule of the bill after its election takes effect.[3]

A second change in the Finance Committee bill implemented the Treasury recommendation on requiring normalization of the full tax benefit of accelerated depreciation, described in the report as follows:

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[1] Tax Reform Act of 1969, Report of the Committee on Ways and Means, to accompany H.R. 13270, 91st Congress, 1st Session, August 2, 1969. Pp. 132—133.

[2] Tax Reform Act of 1969, H.R. 13270. Technical Memorandum of Treasury Position, Committee Print, Committee on Finance, 91st Congress, 1st Session, September 30, 1969. Pp. 88—89.

[3] Tax Reform Act of 1969, Report of the Finance Committee to accompany H.R. 13270, 91st Congress, 1st Session, November 21, 1969. Pp. 173—174.

The committee amendments provide that the requirement of normalizing is not met by simply normalizing the regulated books of account of the utility if these books of account may be ignored by the regulatory agency in setting rates. Under the committee amendments, while the regulated books of account are to be used as the basic source of information, these books are not to control if the current rates of the utility are set by reference to the flow-through method. This is done because the use of flow-through in setting rates would produce the revenue loss the bill seeks to avert.

The committee amendments provide that a taxpayer is not to be treated as normalizing unless the entire deferral of taxes resulting from the difference between (a) the depreciation method used in the regulated books of account and (b) the accelerated depreciation deducted on the return is normalized. However, this rule is to be applied for the future only.

Under this rule, differences in the amount of depreciation expense need not be normalized if they result from such differences as (a) use of so-called "guideline lives" for tax purposes and "engineering lives" on the regulated books and (b) different bases for the property because the agency requires that certain carrying charges be capitalized even though for tax purposes they may be deducted or because the agency requires a carryover basis in the case of a purchase of property from another regulated utility even though for tax purposes the basis is what the purchasing company paid for the property.

However, any difference resulting from a faster method of depreciation (including the use of a faster declining balance rate) must be normalized. For example, if a company takes straight line depreciation on its regulated books of account and 200 percent declining balance on its tax return, it does not meet the test of the bill if it normalizes only with respect to the difference between 200 percent declining balance and 150 percent declining balance.[1]

In the Senate debate, no amendments were offered to these provisions of the bill. The final Act substantially follows the Senate version of the bill; however, the 180-day election provision above was modified to apply only to new property which expands the capacity of the utility and not to replacement property.

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[1] Ibid. P. 174.

APPENDIX

[COMMITTEE PRINT]

SUMMARY OF TESTIMONY ON TREATMENT OF TAX DEPRECIATION BY REGULATORY AGENCIES

AT

PUBLIC HEARINGS, FEBRUARY 18 TO APRIL 24, 1969

HELD BY THE

COMMITTEE ON WAYS AND MEANS

ON THE SUBJECT OF TAX REFORM

PREPARED BY THE STAFF

OF THE

JOINT COMMITTEE ON INTERNAL

REVENUE TAXATION

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SUMMARY OF TESTIMONY ON TREATMENT OF TAX DEPRECIATION BY REGULATORY AGENCIES

Questions have arisen as to the proper treatment of tax benefits from accelerated depreciation for regulated utilities by regulatory agencies in their rules for ratemaking purposes. The Internal Revenue Code of 1954 (sec. 167) authorizes liberalized depreciation deductions (i.e., faster depreciation during the earlier years of asset life than the straight line method) in computing Federal income taxes in order to increase available working capital to encourage investment in new plant and facilities, and to more properly reflect the rate at which many assets decline in value. A large number of the regulated utilities use accelerated depreciation for Federal income tax purposes (even though substantially all are required to book straight line depreciation). The question before the Committee is whether the regulatory agencies may properly direct the utilities' depreciation elections on their Federal income tax returns and whether the agencies may properly require that Federal income tax savings arising from accelerated depreciation be "flowed through" to the utilities' customers. The alternative to "flow-through" as a method for ratemaking treatment of such Federal income tax benefits is to "normalize" those benefits.

Utility rates are established to achieve a given return to the utility after all expenses (income taxes being considered as an ordinary cost of business to be recovered in the rates charged to consumers. The "normalization" method involves setting up a reserve account for deferred taxes, recognizing the future liability for increased Federal income taxes when the depreciation deduction declines over the life of the asset. The accumulated provisions for deferred taxes may be, for ratemaking purposes, deducted from the rate base on which the utility is entitled to earn its specified return on investment. The regulatory agency computes the rate as if the utility had incurred the higher income tax cost of using the smaller straight line depreciation deduction. The use of cost-free capital is the benefit distributed to the consumer over the life of the asset through the use of the tax deferral account. The advocates of normalization maintain that this method of accounting for accelerated depreciation avoids charging future customers with increased taxes resulting from the earlier use of a disproportionately large tax deduction attributable to the utility property that serves them.

The "flow-through" method, on the other hand, permits current income to be charged only with the income taxes actually paid as a result of the larger liberalized depreciation deduction. Regulatory agencies using this method of accounting for ratemaking purposes require that the tax reduction resulting from accelerated depreciation be "flowed-through" to the current customer as a reduction in the price of utility services. The increased tax expense resulting from lower depreciation tax deductions in the later years of the asset life would, it is argued, be borne by future customers as rates would presumably need to be raised to cover the additional tax cost. The proponents of flow-through contend that the current tax benefits of accelerated depreciation generally are tax savings, rather than tax deferral, since new plant investment probably will be added in the future due to continued expansion of demand so that large early-year tax deductions will continue to be available to the utility and offset the reduced deductions then available from older plant facilities as a result of fast writeoffs in prior years. Some utilities use straight line depreciation for tax purposes since they obtain no working capital from accelerated depreciation if the tax benefits must be flowed through. Moreover, some regulatory agencies have treated utilities as if they had taken advantage of accelerated depreciation by allowing as a cost only the amount of income taxes that would have been paid if the utilities had actually used the fast depreciation for tax purposes.

As a result, utilities have argued that regulatory agencies should be prohibited from requiring utilities to adopt accelerated depreciation for tax purposes or imputing such a result; in the case of taxpayers using accelerated depreciation, some utilities urge preventing regulatory agencies from requiring flow-through of the tax benefits for rate purposes without the consent of the utilities. This result is sought by H.R. 6659 (Representatives Fulton of Tennessee, Schneebeli, Betts, and Broyhill of Virginia) and H.R. 8987 (Representative Watts). It is pointed out that section 203(e) of the Revenue Act of 1964 expressly prohibits Federal regulatory agencies from requiring the immediate flow-through of the tax benefits of the investment tax credit for rate purposes, but makes no reference to State agencies.

Another problem arises because accelerated depreciation is used for tax purposes but not for book purposes so that book earned surplus exceeds tax earnings and profits. Distributions paid out of book earnings, which exceed taxable profits, are treated as a return of capital which reduces the shareholder's tax basis in his stock (to the extent it exceeds the adjusted basis, it is treated as capital gains), and are not taxed currently as dividend income.

The 1968 Treasury reform proposals did not include any recommendation with regard to these matters.

In press release No. 2, dated February 14, 1969, of the Committee on Ways and Means, announcing hearings on tax reform, testimony was invited on whether regulatory commissions in determining costs of regulated companies for rate purposes should be allowed to treat the companies as if they had taken fast depreciation for tax purposes even though they did not do so, or alternatively, to deny companies the right to set up a deferred tax account for ratemaking purposes.

Summarized below are the comments of the witnesses relative to the treatment of tax depreciation by regulatory agencies, made at the hearings, as well as written statements submitted for the record.

A. COMMENTS OF WITNESSES WHO FAVOR THE NORMALIZATION METHOD FOR UTILITY RATEMAKING PURPOSES

American Telephone & Telegraph Co., A. L. Stott, vice president and comptroller (March 25—fifth witness): Urges passage of legislation along lines of H.R. 6659 and H.R. 8987 as they would provide that regulated companies could obtain capital from use of accelerated depreciation.

Maintains that: (1) the congressional purpose that all segments of the economy receive the benefits of taking accelerated depreciation is not being fulfilled because many regulatory agencies require "flow-through" of the so-called tax savings from utilization of accelerated depreciation for income tax purposes; (2) the Bell System needs the capital derived from using accelerated depreciation with "normalization"; (3) normalization allocates the benefits fairly between present and future customers; (4) flow-through weakens the financial structures of utilities; and (5) flow-through results in a greater reduction in tax payments by utilities to the Federal Treasury than intended by Congress.

Robert R. Nathan, in behalf of Bell Telephone Cos. (March 25—sixth witness): Contends that: (1) the forcing of utilities to flow-through the tax benefits to the consumer defies the intent of the accelerated depreciation legislation of section 167 of the code; (2) flow-through gives to consumers the tax deferral benefits which Congress intended should be retained by utilities; (3) flow-through causes utilities to be in a weaker position to compete for capital in financial markets; (4) flow-through causes a decline in tax receipts from acceleration substantially greater than the Congress had anticipated; (5) flow-through gives public sanction to unsound bookkeeping practices; and (6) flow-through could inhibit the Congress in considering future withdrawals or modifications of accelerated depreciation as a fiscal tool.

Independent Natural Gas Association of America, Dr. Leon H. Keyserling, economic consultant and counsel (March 25—seventh witness): Opposes requiring utilities to use the "flow-through" method of tax benefits of accelerated depreciation and the investment tax credit. Argues that flow-through policy: (1) subverts the intent of Congress regarding depreciation tax policy; (2) operates against modification of national tax policy; (3) is unsound policy on the part of the regulatory commissions; (4) is injurious to the progress and stability of business investment and enployment growth; (5) imposes unfair competitive disadvantages upon firms made subject to it; (6) is damaging to consumers as well as investors; and (7) has an adverse impact upon Government revenues in the long run.

The Southern Co., Leonard H. Jaeger, vice president, finance (March 25—tenth witness): Maintains that: (1) no regulatory agency should impose restrictions on the ability of a regulated industry to recover current costs by postponing such recovery to the uncertainties of the future; (2) regulatory action should not hamper the ability of regulated industries to compete for capital in the money markets; (3) to require flow-through could put the utilities at a disadvantage in meeting competition with tax-free public power; (4) regulated industries should not be required to follow accounting and reporting practices not acceptable for use by commercial and industrial companies; (5) the intent of the Congress in enacting section 167 was to increase working capital of industry and to assist in the expansion of capacity; and (6) over the life of the property, both the normalization and flow-through methods pass on to customers the tax reduction relating to liberalized depreciation. However, normalization gives both present and future customers the benefit of the interest-free capital made available by the tax deferrals, whereas the flow-through method gives the current customer all of the benefit of the current tax reductions although the cost of producing these reductions is charged to future customers.

Indicates that, under present regulation of State commissions affecting this company, the companies do not earn on that portion of plant financed with the accumulated tax deferrals; thus, the customers receive the benefit of this interest-free capital.

C. Austin Barker, partner, Hornblower & Weeks-Hemphill, Noyes (March 25—twelfth witness): Opposes flow-through and recommends passage of H.R. 6659. Suggests that flow-through makes the analysis of earnings more difficult and it may be misleading to the small investor. Points out that earnings are increased when there is a transition from normalization to flow-through methods. Maintains that if Congress repealed accelerated depreciation, a decrease in earnings would result for companies using flow-through. Argues that if flow-through accounting becomes dominant it will tend to put great political pressure on the Congress not to change such tax laws, even where there may be a social need to switch tax benefits to another cause. Indicates that these factors promote uncertainty in utility earnings which may discredit utilities as being a relatively sound, stable long term investment. Contends that flow-through is contrary to congressional intent.

United States Independent Telephone Association, Dr. Homer A. Black, CPA and consultant (March 26—second witness): Favors H.R. 6659 and contends that it reflects the original intent of Congress. Indicates that there are two main benefits in using accelerated depreciation: (1) Earlier recovery of invested capital for reinvestment in productive assets; and (2) lower cost of capital. States that regulatory practices based on flow-through are depriving telephone companies of working capital which causes independent telephone companies to seek larger amounts of investment funds from outside sources at high money costs.

Argues that flow-through accounting makes the erroneous assumption that accelerated tax depreciation results in a permanent reduction of tax payments and a permanent cost saving to the utility. Points out that flow-through then treats the fictitious cost saving as an addition to the firm's income, rather than as a recovery of capital, and distributes the capital recovery to consumers before a reinvestment can be made.

Arkansas Power & Light Co., Reeves E. Ritchie, president, and on behalf of Middle South Utilities, Inc. (March 26—fourth witness): States that flow-through is contrary to the basic concept of matching revenues and expenses, benefits present customers at the expense of future customers, weakens the financial integrity of the business, and creates uncertainties as to future earnings prospects.

Maintains that normalization provides an opportunity for a utility to reduce financing costs significantly to the advantage of its customers by utilizing the available tax options, while at the same time providing a fair and adequate compensation to the utility for the risks involved. Argues that it results in the greatest overall benefits to utility customers through lower financial requirements, which in turn would be reflected in lower rates. Contends that it is the only method whereby a regulatory agency can fairly equate, in the light of the risks involved, the interests of both the utilities and their customers when accelerated depreciation options are used.

Richard Walker, partner, Arthur Anderson & Co. (March 26—fifth witness): States that the working capital which Congress intended to make available as an incentive to invest in new facilities is not available under the flow-through method. Indicates that the accounting profession (American Institute of Certified Public Accountants) and the Securities and Exchange Commission do not accept the practice of flow-through accounting for accelerated depreciation in nonregulated industries, and also not for the regulated industries unless it is the result of an order by a commission or court which also uses the method to set utility rates.

Contends that flow-through is premised upon the narrow view that the only effect of the use of accelerated tax depreciation is the current reduction in income tax payments; that the additional cost involved in using up the capacity of property to reduce future income taxes is ignored; and that there is no attempt to match depreciation charged to customers with the reduction in income taxes related to such depreciation.

Maintains that the actions of regulatory commissions of imposing flow-through rate and accounting requirements not only neutralize congressional intent in providing increased capital for investment but actually countermand the congressional action by: (1) slowing the recovery of costs, not speeding it up; (2) preventing the buildup of working capital; and (3) doubling the tax revenue loss to the Treasury.

Indicates that flow-through has the effect of reducing a utility's pretax "times interest earned" coverage ratio, which may result in lower bond ratings and higher interest costs. Further, asserts that flow-through companies must issue greater amounts of securities to finance a given amount of property, which may reduce the quality of such securities and require greater use of preferred stock issues because of ceilings on the amount of bonds which can be issued. Argues that the additional funds made available by the use of accelerated tax depreciation do not represent customer-contributed capital, but investor-contributed funds. Therefore, urges enactment of legislation such as H.R. 6659 and H.R. 8987, as they would prevent State and Federal regulatory authorities from frustrating and countermanding Federal tax policies.

Transportation Association of America, Harold F. Hammond, president (written statement): States that the purpose and intent of legislation granting tax incentives to general and regulated industry for expansion should not be circumvented by any regulatory agency through rulings by which the benefits of such legislation are denied or limited for regulated industries while fully enjoyed by all other industries. Urges passage of H.R. 6659, with the possible clarification in the Committee report so that the regulatory agency will not be foreclosed from permitting flow-through treatment if desired by any regulated carrier.

Association of Oil Pipe Lines, J.D. Durand (written statement): Argues that Federal and State regulatory agencies by imposing arbitrary flow-through orders are nullifying the intent of Congress in liberalizing depreciation positions for all industries, since these orders are denying the full benefit to regulated industries. Contends that without remedial Congressional action (such as H.R. 6659), it is feared that such abuses will continue and become more widespread.

Florida Power & Light Co. (written statement): Points out that Congress has prohibited Federal agencies from ordering or imputing flow-through of the benefits of the investment tax credit, and contends that this policy should be extended to the benefits of tax deferral through accelerated depreciation. Argues that flow-through imposes unfair competitive disadvantages on regulated firms, is detrimental to consumers as well as investors, and will have adverse effects on Government revenues in the long run.

General Telephone & Electronics Corp., Theodore F. Brophy (written statement): Argues that the action of regulatory agencies in requiring flow-through is frustrating the intent of Congress in providing accelerated depreciation as an incentive for investment. Maintains that such flow-through requirements actually reduce Federal revenues by lowering taxable income. Contends that regulatory agency requirement of flow-through even though the utility does not make use of accelerated depreciation is in derogation of Congressional taxing prerogative.

Illinois Commerce Commission, James W. Karber, chairman (written statement): Allows regulated utilities to set up a tax deferral reserve account so that the companies may benefit as intended by Congress in the 1954 accelerated depreciation provision. States that H.R. 6659 represents an appropriate and long overdue restatement of Federal fiscal policy, and is not a question which involves any Federal regulatory agency encroachment on the legitimate exercise of the responsibility of the State regulatory agencies.

Commonwealth Edison Co., Gordon R. Corey, chairman of the finance committee (written statement): Urges that regulatory commissions should not be allowed to deny regulated companies which have taken liberalized depreciation the right to set up a deferred tax account for ratemaking purposes. Maintains that failure to establish a tax deferral account reserve overstates current earnings, overstates the rate base, and imposes carrying charge burdens on future operations. Indicates that both normalization and flow-through methods pass on the benefits of liberalized depreciation to customers; however, contends that only normalization reflects these benefits accurately by spreading benefits to both present and future customers.

Peoples Gas Co., Ward C. McCallister (written statement): Recommends that legislation in this area: (1) prevent regulatory agencies from specifying the depreciation methods used by a utility in determining the tax payable to the Federal Government; (2) prevent such agencies from regulating the utility's rates as if the utility did use accelerated depreciation when it did not; (3) prevent such agencies from requiring any utility to compute its rates by use of the flow-through procedure, if a utility does use accelerated depreciation; and (4) prevent such agencies from accomplishing any similar reduction in the utilities' rates by any other treatment, device, or procedure.

Argues that flow-through policy results in reduced Federal tax revenues and increased interest costs, whereas normalization accounting produces the more meaningful long-range benefit of interest-free capital. Indicates that normalization disallows a rate of return on the portion of the rate base purchased with such capital, thereby preventing the utility from reaping a windfall profit from the benefits of liberalized depreciation.

Northern Illinois Gas Co., W. J. Crowley, executive vice president (written statement): As was done in the case of the investment tax credit, believes that Congress should prevent regulatory agencies from requiring regulated public utilities to use flow-through accounting, from denying them the right to use deferred tax accounting for ratemaking purposes, and from treating companies as if they had taken liberalized depreciation for tax purposes when they did not do so.

Contends that normalization accounting is the superior method in that it properly allocates the benefits to each accounting period over the entire life of the property subject to liberalized depreciation; and only through the use of normalization can today's customer enjoy the benefits of cost-free capital without depriving tomorrow's customer of his share of depreciation tax deductions.

B. COMMENTS OF WITNESSES WHO FAVOR THE FLOW-THROUGH METHOD FOR UTILITY RATEMAKING PURPOSES

Hon. Lee C. White, Chairman, Federal Power Commission (March 25—first witness): States that public policy does not require that accelerated depreciation tax benefits continue to be available to the regulated gas and electric utility industries at the expense of the revenues to the Treasury, since the regulated utility industries are subject to regulated consumer service charges designed to provide a prescribed after-tax rate of return on investment and their amount of investments are largely determined by determined public requirements—thus, they are not in competition for customers and do not need the tax incentive of accelerated depreciation for increased capital investment. Maintains that if Congress preserves the use of liberalized depreciation for tax purposes by regulated utilities, court decisions require a "flow through" of the tax savings to the consumer. Even if Congress were to decide that regulatory commissions must upon request permit electric utilities or natural gas pipelines to "normalize" taxes in ratemaking (i.e., compute rates high enough to recover the extra taxes that would have been paid but for the sec. 167 privilege), urges that the accumulated tax savings be clearly recog-

nized as customer contributions and therefore not entitled to be included in the rate base upon which the allowed profits are calculated.

Hon. Virginia Mae Brown, chairman, Interstate Commerce Commission (March 25—second witness): States that the Commission does not allow "tax-deferred accounts," but requires that actual tax expenses be used in the carrier's tax accounts. The Commission also requires carriers to employ the straightline method of depreciation for accounting and financial reporting purposes. However, does not now oppose the use of accelerated depreciation in required reports. Maintains that proposals (e.g., H.R. 6659) for changing existing regulatory practices are not desirable because of their restrictive effect on the Commission's authority to regulate the accounts, financial reports, and rates. Believes that tax savings, such as those derived from present provisions of the Internal Revenue Code, should be "flowed through" to the public. Takes no position on various suggestions that existing law be modified so as to either deny the availability of accelerated depreciation to regulated companies or, in the alternative, require its use in lieu of presently available option to do so.

Melwood W. Van Scogoc, public utility consultant, American Public Gas Association, American Public Power Association, and Consumers Federation of America (March 25—eighth witness): Opposes H.R. 6659. Contends it would: (1) result in hundreds of millions of dollars of unwarranted rate increases; (2) drastically undermine the regulatory acts under which regulatory agencies carry out the duties given to them by Congress; (3) mean that utility managements would be delegated the power to determine the justness and reasonableness of rates affected by the tax savings arising from accelerated depreciation; and (4) require a "noncost" to be treated as a cost in fixing utility rates.

Maintains that the flow-through treatment of the tax savings arising from accelerated depreciation is not contrary to sound accounting and business practices. Indicates that the American Institute of Certified Accountants and the Securities and Exchange Commission have sanctioned the use of the flow-through method for regulated companies. Argues that experience has shown no evidence that flow-through of accelerated depreciation benefits has impaired or handicapped the attraction of the necessary capital for utility expansion or that securities of regulated utilities required to flow through have not been favorably received by investors.

Contends that Congressional intent in section 167 is not being subverted since it did not prescribe the use the taxpayer had to make of the tax savings realized by use of the accelerated depreciation option. Asserts that regulatory requirement of a flow-through of this tax saving to the consumer is a proper and just policy in carrying out the respective regulatory agency's mandate to establish a fair rate for the customer.

Gerald J. Glassman, attorney, Washington, D.C. (March 25—eleventh witness): Maintains that liberalized depreciation for ratemaking purposes should be left to the discretion of regulatory agencies; in such a manner, each agency may take into consideration all the circumstances affecting the utility and make a rational disposition of the treatment of fast depreciation for ratemaking purposes. Argues that rates under regulation should be set to provide revenues which cover only those costs which are actually incurred and taxes are a part of that cost. Indicates that normalization results in securing capital from ratepayers which should more appropriately be secured from investors.

California Public Utilities Commission, Fred P. Morrissey, commissioner (March 26— third witness): Maintains that: (1) H.R. 6659 will *not* maintain the flow of revenues to the Federal Government—in fact, it would reduce tax-payments; (2) ratepayers would be required to contribute capital to the utilities; (3) there is doubt of the constitutionality of the proposed legislation insofar as it would purport to restrict discretion of State regulatory agencies; (4) Federal legislation in an area of State concern is not warranted if founded upon the incorrect assumption that it will "avoid loss to the Federal revenues"; (5) considerations of incentives to invest are inappropriate for regulated public utilities since they are required by law to provide all necessary service and investment for those in their service area—thus, regulatory agencies must allow a rate of return sufficient to provide for all necessary capital attraction; and (6) income taxes, since the Supreme Court's decision in 1922 in the *Galveston* case, have been treated as a part of the operation costs of public utilities and are thus paid by the ratepayer.

California Farmer Consumer Information Committee (written statement): Supports the California Public Utilities Commission position on requiring flow-through of tax benefits from accelerated depreciation and opposing H.R. 6659 as infringing upon the obligations of the regulatory agencies in protecting the ratepaying public.

Hon. Henry Loeb, Mayor of Memphis, Tenn., and Ray Morton, president, Memphis Light, Gas & Water Division (written statement): Maintains that H.R. 6659 would be contrary to the interests of utility customers, would provide a hidden windfall for all utilities affected and would make impossible the sound and proper regulation of utility rates by the Federal Power Commission and other regulatory commissions. Contends that the purpose of the bill is deceptive in that it would not affect Federal revenues at all. Argues that the result would distort the financial picture of utilities, and ultimately, would require a substantial increase in most utility rates as it would "reimburse" utilities for Federal income taxes which have not been paid.

Supports the Federal Power Commission's position upholding flow-through as ruled in the *Alabama-Tennessee Natural Gas Company* case and sustained by the Fifth Circuit Court of Appeals.

Raymond F. Simon, corporation counsel, City of Chicago (written statement): Is of the opinion that the enactment of H.R. 6659 would have the effect of reversing the Federal Power Commission's present policy of "flowing through" the Federal income tax benefits of liberalized depreciation to the natural gas consumers which results in substantially lower rates. Indicates that the reversal of the flow-through policy would result in increased rates to Chicago consumers of $4 to $6 million annually for natural gas.

Mid-West Electric Consumers Association, Inc., Fred G. Simonton, executive director (written statement): Maintains that H.R. 6659 would in effect be tantamount to changing the ratemaking standards of every ratemaking body because it would give the regulated utility companies the right to dictate the ratemaking standard since the regulatory treatment of the reduction in taxes resulting from the use of liberalized tax depreciation would be decided by the regulated companies. Contends that this change would cost the ratepayers hundreds of millions of dollars per year in increased rates.

The Virgin Islands Public Utilities Commission, John P. De Jongh, chairman (written statement): States that legislation such as H.R. 6659 could serve to bring about unjustified increases in utility rates or to prevent decreases in rates simply because a regulatory commission would be prohibited from taking any action in regard to the ratemaking treatment of accelerated depreciation unless the utility taxpayer consented. Argues that to deny ratepayers

the tax savings from accelerated depreciation would be inconsistent and discriminatory. Contends that the legislative proposal would also require ratepayers to contribute capital to a utility at the option of the utility's management, a situation at odds with sound principles of utility regulation and court decisions.

C. OTHER COMMENTS OF WITNESSES WITH REGARD TO TREATMENT OF TAX DEPRECIATION BY REGULATORY AGENCIES

Bernard Strassburg, chief, Common Carrier Bureau, Federal Communications Commission (March 25—third witness): Opposes H.R. 6659 because it would prohibit Federal and State regulatory agencies from: (1) Specifying the method or rate of depreciation to be used in computing its Federal income taxes; (2) determining a utility's Federal income taxes for ratemaking or accounting purposes by reflecting any depreciation method other than that used by the utility; and (3) excluding the tax benefits resulting from the use of accelerated depreciation provisions in the determination of the utility's cost of service.

Does not comment on such questions as the advisability of imputing liberalized depreciation to a company which utilizes the straight-line depreciation method, or the relative merits of normalization and flow through of the benefits of accelerated depreciation due to currently pending Commission proceedings.

Judge Whitney Gilliland, member, Civil Aeronautics Board (March 25—fourth witness): Opposes H.R. 6659 as it would preclude regulatory agencies from exercising their discretion as to proper treatment of rapid depreciation for ratemaking purposes. Indicates that as a matter of accounting philosophy, does not favor the provision which would require the agency to accept the carrier's treatment of rapid depreciation in computing its Federal tax expense on its books of account. States that if legislation similar to H.R. 6659 is enacted, recommends that the legislation be made inapplicable to its subsidy ratemaking functions (sec. 406(b)(3) of the Federal Aviation Act of 1958), since the Board has ruled that tax benefits from fast depreciation must be used to reduce the carriers' subsidy.

In commercial ratemaking, on the other hand, the Board has ruled in 1960 that the Federal income tax expense to be recognized for ratemaking purposes should be the normal tax that would be paid under straight-line depreciation, rather than the actual taxes paid (i.e., the "normalization" method) and that the deferred tax reserves should be deducted from the investment base for ratemaking purposes. Points out that since 1960, however, Federal judicial decisions have held that normalization is not necessary to effectuate the congressional objective in section 167 of the Internal Revenue Code. Thus, believes that the Board should be free to decide how it should treat rapid depreciation for ratemaking purposes.

Edison Electric Institute, Herbert B. Cohn, chairman of the policy committee on cost of money and taxes (March 25—ninth witness): Urges that any legislation enacted in this area not require regulated utilities to use liberalized depreciation for income tax purposes; also, where liberalized depreciation is used, legislation should not restrict the regulated utility to the use for rate regulation purposes of any single method of accounting for the income tax effects of such liberalized depreciation.

Arizona Corporation Commission, Milton J. Husky, chairman (written statement): States that enactment of H.R. 6659 would not affect the way utilities in Arizona are being regulated, since utilities in Arizona are currently free to elect any options available to them under existing tax laws.

New Administration, Edwin S. Cohen, Assistant Secretary for Tax Policy (April 22):

1. Tax-free dividends

Points out that under existing law, some corporations, particularly regulated utilities, are making tax-free distributions primarily as a result of the use of accelerated depreciation which exhausts earnings and profits for tax purposes, and is particularly the case if the benefits of accelerated depreciation are "flowed-through" to the consumer resulting in a rate reduction and lower income. The problem arises because accelerated depreciation is not used for book purposes so that book earnings exceed taxable profits; that is, dividends which are paid out of book earnings exceed taxable earnings and profits. Such dividends are presently treated as a return of capital which reduce the shareholder's tax basis in his stock and do not result in ordinary income.

Recommends that accelerated depreciation not be taken into account in the computation of earnings and profits unless accelerated depreciation is used for book purposes (i.e., limited to straight-line depreciation unless accelerated depreciation is also used for book purposes), to be effective beginning after the third year following enactment in order to permit adequate adjustment to the new rules.

2. Accelerated depreciation and ratemaking for public utilities

Indicates that in the case of utilities claiming accelerated depreciation for tax purposes, "normalization" ignores the effect of accelerated depreciation on the tax payment; that is, the utilities claim as an expense the tax that would have been paid had straight-line depreciation been used, and the difference between the actual tax paid and the higher tax based on straight-line depreciation is treated as a reserve for future taxes. This reserve is ordinarily treated as a customer contribution to capital, and no rate of return is permitted on it. The immediate tax reduction gives the utility additional working capital, and thus enables it to reduce its equity or debt-financing requirements. On the other hand, some regulatory commissions have required companies to take into account as the income tax cost of their operations only the actual tax paid, with the result that the tax reduction due to accelerated depreciation is "flowed-through" to the customer as a reduction in the price.

States that if utility commissions generally proceed to treat companies as though they had adopted accelerated depreciation and require this reduction in taxes to be flowed-through, the total impact on the revenues could build up to an annual loss of $1.5 billion in the next few years. On the other hand, estimates that if Congress prohibited utility commissions from flowing-through the proceeds of accelerated depreciation, there could be a short term revenue loss as high as $0.6 billion due to the adoption of accelerated depreciation by certain utilities which would not do so if they anticipated the possibility of flow-through.

Recommends, therefore, that regulatory commissions be prohibited from requiring a utility which had always used straight-line depreciation to adopt accelerated depreciation or to compute its tax as if it did. This continues the intent of the tax law to give taxpayers the choice of depreciation methods. Where a taxpayer has previously elected accelerated depreciation, regulatory commissions would continue to have authority to require flow-through, even though the taxpayer elects to return to straight-line depreciation.

F. The Revenue Act of 1971: Asset Depreciation Range, Reenacted Investment Tax Credit, and Restrictions on Treatment by Regulatory Agencies

In January 1971, the Treasury Department announced a new system of determining depreciable lives to supplement the guideline lives system adopted in 1962. The new system, called Asset Depreciation Range (ADR) was the subject of administrative hearings early in the year, and the proposed regulations were adopted in June 1971. The ADR system contained several important new features: 1) depreciable lives of assets were to be allowed to vary over a range within 20 percent of the 1962 guidelines lives; 2) the "vintage accounts" system of accounting for depreciable assets was introduced; 3) the reserve ratio test was eliminated; and 4) a first year convention was provided which allowed taxpayers to take a minimum of three-fourths of a full year's depreciation for the year in which an asset is placed in service. Additionally, the regulations provided that the ADR system was to be available to regulated public utilities only if the tax deferral it provided was normalized for ratemaking purposes.

In August 1971, President Nixon announced his "New Economic Policy" which, among other items, contained several tax proposals. The Revenue Act of 1971 was the Congressional response to those proposals. The Act gave statutory embodiment to the ADR system (with some modifications), reenacted the investment tax credit, and placed restrictions on the treatment of the credit in ratemaking by regulatory agencies similar to the "freeze" on the allowable treatment of accelerated depreciation in the Tax Reform Act of 1969.

The proposal for the application of the new investment tax credit (called the "job development credit" in the Administration's tax proposals) to utilities and the restrictions on treatment in ratemaking were contained in the statement to the Ways and Means Committee by Secretary of Treasury John Connally as follows:

> Under the President's proposal, 1/2 of the cost of such public utility property would qualify for the credit, resulting in an effective rate of 5 percent or 2.5 percent, depending upon the period during which the property is acquired or constructed. No change would be made in the definition of the term "public utility property." This revision would apply to public utility property acquired after August 15, 1971, and, in the case of property constructed by the taxpayer, to that portion of the cost attributable to construction after August 15, 1971.
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> . . . Under the President's proposal, the Job Development Credit would be allowable with respect to public utility property and any other property used predominantly in a regulated trade or business (e.g., a transportation firm, a gas or oil pipeline firm, or a steam distribution firm) only if in computing the taxpayer's cost of service for ratemaking purposes the Federal income taxes of the taxpayer are treated as not being reduced by the credit. If a regulatory agency sets rates for all or any part of a year by using a prohibited method of computing cost of service, the credit would not be available with respect to property placed in service by the taxpayer and property leased to the taxpayer for that year and all subsequent years for which the prohibited method is used. Adjustments would not be required for prior years unless the regulatory agency requires the taxpayer to make refunds, and no adjustments would be required for years which are closed by the statute of limitations. This requirement would apply to property acquired after August 15, 1971, and to property the construction of which is completed after August 15, 1971.
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> These rules would not preclude a regulatory agency from excluding amounts of the credit in determining the taxpayer's rate base upon which he may earn a return.[1]

The applicability of the investment credit to utilities and the treatment of the credit for ratemaking was addressed by several of the witnesses and written statements in the hearings before the Ways and Means Committee. Most of the industry spokesmen urged that public utilities receive the full investment credit, rather than a lower rate credit as under prior law and urged that normalization of the credit be required; the argument was advanced that the investment credit would stimulate greater investment by public utilities, even to a greater degree than in other industries, and that public utilities operate in a competitive environment. The statements of Donald Cook, Chairman of the American Electric Power Company and Herbert Cohen, of the Edison Electric Institute, differed from other industry representatives in that they urged normalization of the

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[1] Statement Submitted by the Honorable John B. Connally, Secretary of the Treasury, to the Committee on Ways and Means on the Tax Proposals Embodied in President Nixon's New Economic Policy, Committee Print, 92d Congress, 1st Session, September 8, 1971. Pp. 18—19.

credit not be required, and Mr. Cook presented arguments favoring flow through. The statement of David H. Armstrong, representing the National Association of Regulatory Utility Commissioners (NARUC), urged "that Congress not restrict the ratemaking authority of state regulatory agencies, as each agency is in the best position to judge the needs of the utility customers and utilities in its state. . ."[1]

The reports of both the House and Senate committees use substantially the same language to describe the ADR system and investment tax credit provisions as they apply to utilities. The ADR system adopted in the Act was very similar to that earlier adopted by Treasury regulation, except that the first year convention was deleted, and the ADR system and guideline lives were combined into a single system. Both the House and Senate reports anticipated Treasury regulations similar to those originally approved, including the requirement that the tax deferral provided by the ADR system be normalized in ratemaking by public utility regulatory agencies.

The excerpts below, regarding the applicability of the investment tax credit to public utilities and its treatment in ratemaking, are from the Finance Committee report. Sections which appeared in the Finance Committee report but not in the Ways and Means Committee report are marked by brackets.

REASONS FOR PROVISIONS.—In restoring the investment credit, the committee agrees with the House that it is appropriate to increase somewhat the credit previously available for regulated companies. As indicated above, the prior law's rate for most public utility property was 3 percent. The bill raises the rate for public utility property to 4 percent. In part, this is because of the increasing problem many utilities are encountering in raising the capital required for modernization and expansion. Additionally, the regulated companies are encountering increased competition from other regulated companies and, in the case of many of their products, from unregulated companies as well. In view of these factors, the committee agreed with the House that it was appropriate to lessen the difference between the credit allowable for public utilities and for taxpayers generally. In order to equalize the treatment of regulated companies in substantial competition with each other, changes have been made in the categories of regulated property to which the 4-percent credit—as distinct from the 7-percent credit—is to be available. Additionally, a committee amendment limits to 4 percent the credit provided for certain property used in competition with public utility property, even though such property is used by unregulated taxpayers.

To permit all of the benefits of the credit to be flowed through to the consumer currently could have an impact on revenues which is approximately twice that applicable in other cases. Moreover, the basic purpose of the investment credit is not an allocation of resources which will stimulate consumption of any particular type of product or service. For these reasons, as a general rule, the bill does not make the credit available where all the benefit from it would be flowed through currently to the consumers. There are a limited number of cases, however, where a regulated company particularly needs to maintain a low rate for consumers, and has under prior law flowed the benefits of fast depreciation through currently to the consumers. In these cases alone, the bill makes the credit available only where there is assurance that some of the benefit at least, will go to the investors.

[In restoring the investment credit for public utility property of regulated companies, the committee has given careful consideration to the impact of this credit on ratemaking decisions. Although there are many different ways of treating the credit for ratemaking purposes, the committee, in general, believes that it is appropriate to permit the regulatory agencies, where they conclude it is necessary, to divide the benefits of the credit between the customers of the regulated industries and the investors in the regulated industries. The committee also concluded that where a regulated company furnishes steam through a local distribution system or gas or steam by pipeline, it is appropriate (when the regulatory agency involved determines that the natural domestic supply of the product furnished is insufficient to meet present and future requirements of the domestic economy) to permit the entire benefits of the credit to be used as an incentive to encourage expansion or at least maintenance of the supply.]

The committee believes that this represents the best balancing of the considerations of both investors and customers of the regulated companies, and the extent to which revenue losses may be permitted at this time.

TREATMENT OF CREDIT IN RATEMAKING.—With regard to the treatment of the credit for ratemaking purposes, the bill provides elective options:

(1) The first option provides that the investment credit is not to be available to a company with respect to any of its public utility property if any part of the credit to which it would otherwise be entitled

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[1] Hearings before the Committee on Ways and Means on Tax Proposals Contained in the President's New Economic Policy, 92d Congress, 1st Session, Part 3, September 15 and 16, 1971.

is flowed through to income; however, in this case the tax benefits derived from the credit may (if the regulatory commission so requires) be used to reduce the rate base, provided that this reduction is restored over the useful life of the property.

(2) The second option provides that the investment credit is not to be available to a company with respect to any of its public utility property if the credit to which it would otherwise be entitled is flowed through to income faster than ratably over the useful life of the property; however, in this case there must not be any adjustment to reduce the rate base if the credit is to be available.

(3) Under the third of the elective options, the above restrictions would not apply at all.

All regulated companies are to be allowed to choose between option (1) and option (2) but the choice must be made within 90 days after the date of the enactment of this bill. If no election is made in that time period, option (1) applies.

Option (3) is to be available (as an alternative to option (1) or option (2)) only to a regulated company with respect to property which is "flow-through" property under the accelerated depreciation rules enacted as part of the Tax Reform Act of 1969. Election of this option also must be made within 90 days after the enactment of this bill.

[Under a committee amendment, a full-credit regulated company that is subject to the above-described limitations on flow-through and rate base adjustment and that has chosen the first option, may elect to have that option apply so as to forbid any rate base adjustment. This treatment is to apply only if the regulated company elects within 90 days after the date of the enactment of the bill to have it apply, and only if the Federal agency that regulates its rates determines that the natural domestic supply of the product furnished by the company in its regulated business is insufficient to meet the present and future requirements of the domestic economy.]

Congress considered a related aspect of the flow-through problem in 1969 with respect to the tax benefits of accelerated depreciation. There, too, it was determined to provide a general rule under which the tax benefits could be shared between investors and customers. An exception was provided in those situations where a company was already flowing through the tax benefits of accelerated depreciation, in order to recognize the special competitive conditions under which such a company was operating and in order to avoid precipitating an increase in utility costs to such a company's customers. Property of these regulated companies (to which sec. 167(1)(2)(C) applies) is eligible for option (3) if an election is made.

Although the depreciation problem is in many respects similar to the matter considered in this bill, it is not identical. Nevertheless, the result of this bill—generally permitting regulatory agencies to share the benefits of the credit between investors and customers where appropriate—is essentially similar to the result of the 1969 depreciation legislation.

The options described above, regarding flow-through and rate base adjustments, are to apply to property which is eligible for the 4-percent credit and also to property eligible for the 7-percent credit which is used for local steam distribution or for gas or steam transportation by pipeline.

In determining the period of time over which the investment credit may be ratably flowed through or over which any rate base adjustment must be amortized, reference is to be made to the period of time on the basis of which depreciation expense is computed on the company's regulated books of account, and not to the useful life used for depreciation under the Internal Revenue Code. A ratable method of flowing through or amortizing is to include a method in which equal amounts are allocated to equal time periods, equal units of production, or machine hours. Composite lives and other averaging methods may be used where appropriate and in accordance with regulations.

In determining whether or to what extent a credit reduces cost of service, i.e., has been flowed through to income, reference is to be made to any accounting treatment that can affect cost of service. One usual method of flowing through the investment credit is to reduce, by the amount of the credit, the depreciable basis of the property on the regulated books of account.

In determining whether or to what extent a credit has been used to reduce the rate base, reference is to be made to any accounting treatment that can affect the company's permitted profit on investment by treating the credit in any way other than as though it has been contributed by the company's common shareholders. For example, if the "cost of capital" rate assigned to the credit is less than that assigned to common shareholders' investment, that would be treated as, in effect, a rate base adjustment.

[In the case of the second option (ratable flow-through and no rate base adjustment) the committee determined to assure that the purpose of the provision is not avoided by flowing through the entire credit to nonoperating income (thereby increasing earnings per share even though the regulated company adheres to ratable flow-through in determining cost of service for ratemaking purposes). It might be argued that in this manner the credit could be used to reduce a company's authorized rate of return and thereby achieve an effect similar to that which would occur had the entire credit been currently flowed through to reduce cost of service for ratemaking purposes. To make it clear that this result is not intended, the committee has amended the second option to provide that cost of service, as reflected in a company's regulated books of account, may not be reduced by more than a ratable portion of the credit. In such a case, the agency may not require the company to

treat the investment credit in its reports to shareholders, or to the public, in any way different from the way the company treats the investment credit for ratemaking purposes.]

These rules replace the 1964 Revenue Act rules (sec. 203(e) of that Act), described above.[1]

The Senate report also includes an interesting section, not found in the House report, which deals with the accounting treatment of the investment tax credit in industry in general. Despite the requirements for regulated utilities, the report sanctions the use of either flow through or deferred accounting for the investment credit, as follows:

The procedures employed in accounting for the investment credit in financial reports to shareholders, creditors, etc., can have a significant effect on reported net income and thus on economic recovery. The committee, as was the House, is concerned that the investment credit provided by the bill have as great a stimulative effect on the economy as possible. Therefore, from this standpoint it would appear undesirable to preclude the use of "flow through" in the financial reporting of net income.

If the investment credit is thought of as decreasing the price of the equipment purchases, it can be argued that reflecting the benefit of the credit in income over the life of the asset is appropriate. However, the investment credit may also be thought of as a selective tax rate reduction applicable in those cases where the desired investments are being made. In this latter event, it is difficult to see why the current "flow through" should be prevented in the financial reporting of income.

In view of these considerations the committee believes that it is unwise to require either type of financial reporting but believes that it is desirable that the companies generally indicate in their reports the method they follow in treating the investment credit for financial reporting purposes. Nothing in this discussion is intended to have any effect on the treatment of the credit for ratemaking purposes in the case of regulated industries.[2]

The final Act follows the Senate bill in regard to the investment tax credit, including the allowance of accounting methods for the credit. This latter provision in the Act was elaborated further than in the Senate report in an explanation of the Act prepared by the staff of the Joint Committee on Internal Revenue Taxation as follows:

The Act deals with the current accounting treatment for the investment credit in financial reports in certain respects. For purposes of reporting to Federal agencies and for purposes of making financial reports subject to regulation by Federal agencies, the Act permits taxpayers to account for the tax benefit of the investment credit either currently in the year in which the investment credit is taken as a tax reduction, or ratably over the life of the asset. This includes not only reports made to the Federal Government, but also reporting to stockholders to the extent any Federal agency has the authority to specify the method of such reporting. This treatment is to be available notwithstanding any other law or regulation under law. The method used by a taxpayer after the date of the Act must be consistently followed unless permission to make a change in the method of reporting is obtained from the Secretary or his delegate. The Act also requires taxpayers to disclose in these financial reports the method of accounting used for the investment credit. The requirements set forth in this provision are not to apply to reports of regulated public utilities subject to the special rules relating to the treatment of the investment credit for ratemaking purposes (as provided under section 105 of the Act). This was provided because taxpayers taking the second option—namely, the option of flowing the benefits of the investment credit through in profits over the life of the asset—also are required to account generally in their financial reporting of the credit on the same basis. However, it is expected that regulated companies which do not select this option will have the same rights as taxpayers generally to either flow the benefits of the credit through in profits currently or ratably over the life of the asset as they choose.[3]

G. The Tax Reduction Act of 1975: A Higher Investment Tax Credit and Restrictions on Treatment by Regulatory Agencies

The Tax Reduction Act of 1975 was the Congressional response to President Ford's call for stimulative tax cuts in his 1975 State of the Union Address. The Act made several changes in the tax law including an individual tax cut, a corporate income tax cut, and an increase in the investment tax credit. The Administration proposed increasing the investment tax credit to 12 percent for one

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[1] The Revenue Act of 1971, Report of the Committee on Finance to accompany H.R. 10947, 92d Congress, 1st Session, November 9, 1971. Pp. 37—39; and

The Revenue Act of 1971, Report of the Committee on Ways and Means to accompany H.R. 10947, 92d Congress, 1st Session, September 29, 1971. Pp. 23—26.

[2] The Revenue Act of 1971, Report of the Committee on Finance, op. cit. P. 45.

[3] General Explanation of the Revenue Act of 1971, H.R. 10947, 92d Congress, Public Law 92—178, Prepared by the Staff of the Joint Committee on Internal Revenue Taxation, December 15, 1972. P. 42.

year. The proposals also involved extending to public utilities the same rate of investment credit as enjoyed by other industries and relaxation of the limitations on the amount of the credit which may be claimed by public utilities. These proposals were described to the Ways and Means Committee by Secretary of the Treasury William Simon as follows:

The investment tax credit would be increased temporarily to 12% for qualified machinery and equipment placed in service in 1975 or ordered by the end of 1975 and placed in service by the end of 1976. As under existing law, special rules apply to property constructed by the taxpayer or to his special order.

Because of the need for speedy enactment and because this emergency increase in the rate of the investment tax credit is for only one year, no other changes or restructuring of the present investment tax credit are proposed at this time, except for utilities. Because of the particular plight of the Nation's regulated public utilities, we recommend that the following additional changes be made:

The discrimination against public utilities, which under current law are allowed only a 4% investment credit, would be eliminated permanently. Under the temporary emergency investment tax credit, and thereafter, public utilities would receive the same general investment credit rate as other businesses.

The provision of present law which limits the maximum credit to 50% of liability for tax in excess of $25,000 would be modified in the case of regulated public utilities. The limitation would be increased to 75% in 1975, and be reduced by 5 percentage points each year through 1979, returning to 50% in 1980.

The proposed 12% rate would be extended for two additional years, through 1977, for property, not fired by oil or gas, that provides power to electric generating facilities, including property converted from oil or gas use. This two-year extension will provide significant incentives for the development and use of nuclear, a geothermal, coal, hydro, solar and other petroleum-saving power sources.[1]

The Administration did not make any recommendation regarding the treatment of the increased investment credit in ratemaking for regulated public utilities.

The investment credit as it applied to public utilities did not receive extensive attention in the Ways and Means Committee Hearings. The subject was addressed by Murray Weidenbaum, Director of the Center for the Study of American Business, Washington University in St. Louis; Charles L. Brown, Executive Vice President and Chief Financial Officer, American Telephone and Telegraph Co.; and Thomas Howarth, Director of Government Relations, the U.S. Independent Telephone Association. All three urged extension of the higher investment tax credit, at the same rate applicable to other industries, to public utilities and normalization of the tax benefit.[2]

The Ways and Means Committee bill increased the investment tax credit for one year to 10 percent for all eligible property including public utility property. The bill included a limitation that no one company could benefit from this investment tax credit increase by more than $100 million; the limitation applied only to public utilities and, in fact, was aimed at the American Telephone and Telegraph Co. since it was the only company which would be affected. The relaxation of the general limitation on the investment credit which applies to utilities was more liberal than that proposed by the Administration; the Committee version was described in the Committee report as follows:

Your committee's bill modifies the 50-percent-of-tax-limitation in the case of most public utility property which under present law is entitled to only a 4-percent investment credit.

The percentage limitation for public utility property is increased in 1975 and 1976 under the bill to 100 percent of the income tax liability (computed without regard to the investment credit, and in the manner provided under existing law). In each of the next succeeding taxable years the percentage limitation is reduced by 10 percentage points until, in taxable years beginning in 1981 and thereafter, the 50-percent limitation goes back into effect. Thus, the percentage limitation is 90 percent in 1977, 80 percent in 1978, 70 percent in 1979, and 60 percent in 1980.[3]

In addition to these changes, the House bill also made another revision in the investment tax credit very important to utilities: the allowance of the tax credit on construction progress payments.

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[1] Statement of the Honorable William E. Simon, Secretary of the Treasury, January 22, 1975, in Hearings before the Committee on Ways and Means on the President's Authority to Adjust Imports of Petroleum; Public Debt Ceiling Increase; and Emergency Tax Proposals, 94th Congress, 1st Session, January 22, 23, 24, 27, 28, 29, and 30, 1975. Pp. 110, 111.

[2] Hearings. Ibid. Pp. 635, 921, 1079.

[3] Tax Reduction Act of 1975, Report of the Committee on Ways and Means on H.R. 2166, 94th Congress, 1st Session, February 25, 1975. Pp. 35—36.

This change, a more modest version of which had been recommended by the Administration,[1] is important to utilities because of the unusually long lead time involved in utility construction projects. The provision was described at length in the Ways and Means Committee report, excerpts of which follow:

PROGRESS PAYMENTS.—Under present law, a tax credit may be taken for investment in qualified property at the time the property is placed in service and therefore is ready for use. As indicated previously, the committee concluded that in cases where taxpayers pay for long lead time property as it is being constructed and substantially before the property can be placed in service, to wait for the allowance of the investment credit until the property is placed in service represented too long a delay in the claiming of the credit. The bill overcomes this problem in present law by allowing an investment credit for what are called "progress payments."

Under the bill, a taxpayer, at his election, is to be permitted to treat "qualified progress expenditures" made for new property as a part of the base for which he can claim an investment credit. In general, these qualified progress expenditures are amounts actually paid (or incurred in the case of self-construction property) for construction (or acquisition or reconstruction) of property which has a normal construction period of at least two years and which will have an estimated useful life in the hands of the taxpayer of at least seven years.

The normal construction period generally begins when physical work on the property commences (i.e., not design, blueprints, planning, etc.) and ends when the property is available to be "placed in service" by the taxpayer. However, no normal construction period is to include a period of construction before January 22, 1975 (the general effective date of these provisions) and, where progress payment treatment is elected by the taxpayer for years beginning after that date, no normal construction period will begin before the first day of the taxable year for which the election is in effect.

Under the committee bill, the taxpayer is to be allowed to claim the full credit to which he is entitled with respect to property in the year in which it is placed in service. Of course, amounts which were treated as qualified investments with respect to the property in preceding years, due to the operation of the progress payment rules, are to be subtracted from the amount for which the taxpayer may obtain a credit.

The provisions discussed above are to apply only if the taxpayer makes an election (in a time and manner to be prescribed in regulations) to come under these rules. Once made, the election would apply to all subsequent taxable years, and can only be revoked with the permission of the Commissioner. It is anticipated that taxpayers generally will exercise the election because this will accelerate their opportunity to use the investment credit. However, taxpayers who are currently in a loss situation may not wish to make the election, so that progress payments are not treated as qualified investments until the year in which the property is placed in service, in order to obtain a more favorable carryover period with respect to those payments.

If property is sold or otherwise disposed of by the taxpayer before he places it in service, or if (under Treasury regulations) it becomes apparent that the property will not be section 38 property when placed in service, any amounts which were treated as qualified investments in prior years are, of course, to be subject to full recapture in a manner generally similar to present law.

To minimize the possible doubling up effect of these provisions, where taxpayers would be taking investment credits for all property placed in service this year (even though progress payments had been made with respect to that property in prior years) as well as progress payments made in the year, the committee bill provides that the progress payment provisions are to be phased in over a 5-year period.

Under these transition rules, 20 percent of a taxpayer's 1975 progress expenditures may be treated as part of his qualified investment for 1975. The remaining 80 percent of those payments may be taken into account ratably over the next 4 years (20 percent a year); 40 percent of the progress expenditures made in 1976, with the remaining 60 percent of the payments to be taken into account in the remaining 3 years of the phase in period; 60 percent of the progress expenditures made in 1977 can be treated as qualified investments in 1977, with 40 percent of the payments to be phased in ratably in the succeeding two years; 80 percent of the taxpayer's progress expenditures in 1978 could be taken into account as qualified investments in 1978, while the remaining 20 percent of the payments would be taken into account in 1979. By 1979, the phase in period would be complete, and all progress expenditures made in that year and later years could be treated as qualified investments. Also, in 1979 the taxpayer would take into account the final 20-percent phase-in portions of the expenditures in fact made in the four preceding years.

For example, assume that a progress expenditure of $10,000 were made in 1975. Two thousand dollars of this amount would be treated as a qualified investment in that year, and $2,000 would be available to be treated as qualified investment in each of the next 4 years. On the other hand, if a $10,000 progress expenditure were to be made in 1977 then $6,000 of that payment would be treated as a qualified investment in that year, and the remaining $4,000 would be taken into account ratably in 1978 and 1979.

When a taxpayer places in service the property with respect to which the taxpayer has been making progress payments, the taxpayer is to be entitled to the full investment credit, reduced by the progress payments

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[1] The Administration recommended allowing the ITC on progress payments made during 1975 only, as a way of accelerating the economic stimulative effects.

credits already taken. In the case of property placed in service by such a taxpayer during the 5-year transition period, this would also include the remaining portions of the credit that otherwise would have been phased in at the rate of 20 percent each year.[1]

The House bill also made several other more minor changes in the investment credit. However, the bill contained no reference to the treatment of the increased investment credit in ratemaking for regulated public utilities.

In testimony before the Finance Committee, the application of the investment credit to public utilities was addressed again by Mr. Howarth in addition to Herbert Cohn, Edison Electric Institute, and Theodore F. Brophy, President, General Telephone and Electronics Corp.; all three urged that the higher investment credit for public utilities be normalized.[2]

The Finance Committee version of H.R. 2166 would have increased the investment tax credit permanently to 10 percent and granted a two-year temporary increase, in 1975 and 1976, to a rate of 12 percent. However, for taxpayers whose amount of property which qualifies for the investment credit in a year exceeds $10 million, the 12 percent credit was to be available only if the equivalent of 1/12th of the credit was contributed to an Employee Stock Ownership Plan (ESOP); otherwise, the credit was equal to 10 percent. The Finance Committee bill deleted the $100 million limit on the amount of investment credit increase to be received by any single taxpayer. The bill retained, with only minor modification, the House provision relaxing the limitation on the amount of investment credit which may be used by public utilities. The Senate bill also adopted, without change, the House provision allowing the investment credit on construction progress payments. However, the Finance Committee bill did include provisions restricting the treatment of the increased credit in ratemaking for public utilities, described in the Committee report as follows:

TREATMENT OF CREDIT FOR RATEMAKING PURPOSES.—The House bill did not contain any new provisions relating to the treatment of the increase in the investment credit for ratemaking purposes. The effect of this was to leave the rules applied as a result of the action taken in 1971 still in effect. The committee, however, was concerned that the stimulation for the acquisition of productive facilities intended by the increase in the investment tax credit allowable with respect to public utility property would be frustrated if any of the benefits were required to be flowed through immediately to consumers in the form of lower rates. Moreover, the committee believed that public utilities should have the opportunity to make new elections with respect to the treatment of the additional credit provided under the bill.

Under the committee's bill, the additional credit provided for a public utility by reason of the rate increase or the increase in the limitation based on tax liability is generally not to be available if the additional credit is used to reduce the rate base, unless the credit is then restored to the rate base at least as fast as ratably over the useful life of the property. Also, this additional credit is generally not to be allowed if it is flowed through to income as a reduction in cost faster than ratably over the useful life of the property to which the increased credit applies. This rule with respect to the additional credit is to apply with respect to property used predominantly in the trade or business of the furnishing or sale of electrical energy, water, or sewage disposal services, gas through a local distribution system, telephone service, domestic telegraph service, or other domestic communications service, if the rates for the furnishing or sale are regulated by a governmental body.

Under the bill, if the governmental regulatory agency requires ratable flow through to income, it cannot require any adjustment to the rate base; if the agency requires adjustments to the rate base, it cannot require flow through to income.

A special election is provided to permit the immediate flow through of the additional credit without the consequence of disallowance in certain cases. This election is to be available only with respect to property where the benefits of accelerated depreciation are flowed through to customers. The election must be made by the taxpayer within 90 days after the date of enactment of the bill. In this case, the taxpayer must make the election at its own option and without regard to any requirement imposed by a regulatory body.

Under the bill, if a regulatory agency requires the flowing through of a company's additional investment credit at a rate faster than permitted, or insists upon a greater rate base adjustment than is permitted, the additional investment credit is to be disallowed, but only after a final determination (made after enactment of this bill) is put into effect. The rules provided under present law with respect to determinations made by a regulatory body and the finality of its orders would apply to this provision.[3]

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[1] Report of the Committee on Ways and Means on H.R. 2166, op. cit. Pp. 37—42.

[2] Hearings before the Committee on Finance on the Antirecession Tax Cut, 94th Congress, 1st Session, March 5, 10, 11, and 12, 1975. Pp. 240, 499, 544.

[3] Tax Reduction Act of 1975, Report of the Committee on Finance on H.R. 2166, 94th Congress, 1st Session, March 17, 1975. Pp. 44, 45.

The final Act, as agreed to by the conferees increased the investment credit to 10 percent for two years (with provision for an 11 percent credit if an amount equivalent to the extra 1 percent is contributed to an ESOP), included the progress payment provision, and included the Senate provisions regarding the treatment of the increased credit in ratemaking for regulated public utilities.

During hearings on the 1978 tax cut legislation the Ways and Means Committee held a session on the issue of regulatory treatment of the tax benefits but no provision on this subject was included in the bill.[1] The Revenue Act of 1978 made the 10 percent investment tax credit a permanent feature of the tax code. It also initiated a phase-in, at 10 percentage points per year, of a 90 percent limitation on the amount of tax liability, above $25,000, that can be offset by the credit. The higher limitation, which applies to all corporations, will be fully phased-in in 1982. In the interim, utilities may choose the higher of the limitations offered by the Tax Reduction Act of 1975 or the Revenue Act of 1978.

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[1] See, Hearings before the Committee on Ways and Means on the President's 1978 Tax Reduction and Reform Proposals, 2d Session, 95th Congress, Part 4, March 8, 1978. Pp. 1887—2175.

III. The Ratemaking Treatment by Regulatory Commissions

This section briefly summarizes the ratemaking treatment of accelerated depreciation, rapid amortization, and the investment tax credit by the regulatory commissions. Prior to adoption of the Tax Reform Act of 1969 there was a general trend among regulatory agencies toward requiring flow through treatment of accelerated depreciation and, to a somewhat lesser extent, the investment tax credit. The trend began with two ratemaking decisions in Pennsylvania in late 1955 and early 1956 which involved the treatment of accelerated depreciation. During the late 1950's and early 1960's other States followed Pennsylvania in requiring flow through of accelerated depreciation and, after it became available in 1962, the investment tax credit. A new direction in regulatory treatment appeared in a Federal Power Commission decision in 1966; in a case involving a gas utility using straight line depreciation the FPC decided to determine allowable rates as if the utility used accelerated depreciation and flowed through the imputed tax benefits. The utility involved had earlier used accelerated depreciation and normalized the benefits, but once the FPC began requiring flow through treatment of accelerated depreciation the utility had reverted to straight line depreciation. The courts upheld the FPC decision and said the validity of the decision did not rest on the utility's reversal of depreciation methods. Subsequently the California Public Utilities Commission made two ratemaking decisions involving telephone utilities in 1968 and 1969 which employed imputed accelerated depreciation and flow through treatment with regard to utilities which actually used straight line depreciation.[1]

Table 1 details the ratemaking treatment of accelerated depreciation, guideline lives, asset depreciation range, and the investment tax credit by State regulatory commissions prior to the Tax Reform Act of 1969, and in 1977. Caution must be used in interpreting the data in the table because few commissions use identical procedures in all cases before them, and the commissions are also constrained by tax law. Thus, the numbers in the table, for the most part, indicate the treatment preferred by the various commissions when an option exists, and not the treatment required in every case.

The table indicates that the restrictions on ratemaking treatment enacted in the tax code have accomplished their goal in halting the trend toward flow through, and that some reversal has occurred. In 1969, 19 States required flow through of accelerated depreciation whereas in 1977 only 5 did. The numbers for normalization were 22 and 30 respectively, with the remainder of commissions each year allowing either method or being undecided.[2] A similar trend is evident for treatment of depreciable lives and the investment tax credit, although flow through has always been less prevalent and normalization more so for the ITC than for accelerated depreciation. One trend of significance is the movement toward exclusion of accumulated tax deferrals from the rate base. In

[1] For further detail on the trend toward flow through treatment see Harrison, William H., Accelerated Depreciation: Effect on Public Utilities, Proceedings of the Annual Conference of the National Tax Association, 1969. Pp. 200—204.

[2] In 1969 the FPC flowed through accelerated depreciation, and the FCC had made no decision; both commissions allowed either treatment of the ITC. In 1977 the FERC (formerly FPC) normalized both the ITC and accelerated depreciation, and the FCC allowed either treatment of both. Both commissions exclude tax deferrals from the rate base.

TABLE 1

RATEMAKING TREATMENT BY STATE REGULATORY COMMISSIONS,* 1969 AND 1977

State	Accelerated depreciation		Guideline lives depreciation		Asset depreciation range		Investment tax credit		Accumulated deferrals deducted from rate base 2	
	1969	1977	1969	1977	1969 1	1977	1969	1977	1969	1977
Alabama	U	E	U	E		E	U	E	7	7
Alaska	N	N	U	F		F	N	N	Yes	Yes
Arizona	U	E	U	E		E	U	E	7	Yes
Arkansas	N	N	N	N		N	N	N	U	Yes
California	F	F 5	F	F		F	F	F 10	Yes	Yes
Colorado	F	E	F	E		E	N	N	Yes	Yes
Connecticut	F	F	F	F		F	F	F	7	Yes
Delaware	F	N	F	N		E	F	N	7	7
D. C.	F	N	F	N		N	E	N	Yes	Yes
Florida	N	N	U	N		N	U	N	No	Yes
Georgia	N	N	N	N		N	N	N	Yes	Yes
Hawaii	N	N	N	N		N	U	N	Yes	Yes
Idaho	E	U 6	F	U 6		U 6	N	U 6	No	Yes
Illinois	N	N	F	N		N	N	N	Yes	Yes
Indiana	N	N	9	N		F	N	N	Yes	No
Iowa	U	N	U	N		N	U	N	7	Yes
Kansas	N	N	U	7		U	N	N	No	No
Kentucky	N	N	7	N		U	N	N	Yes	Yes
Louisiana	N	N	N	N		N	N	N	Yes	Yes
Maine	F	F	9	F		N	F	N	Yes	Yes
Maryland	N	E	N	E		E	N	E	Yes	Yes
Massachusetts	N	N	U	N		N	N	N	No	Yes
Michigan	N	N	F	F		N	N	N	No	Yes
Minnesota	3	U	3	U		U	N	N	No	Yes
Mississippi	N	N	N	N		N	N	N	Yes	Yes
Missouri	F	N	F	7		N	F	N	No	Yes
Montana	E	E	U	E		E	N	7	No	No
Nebraska	N	7	N	7		7	N	N	No	Yes
Nevada	F	U	F	U		U	N	U	No	Yes
New Hampshire	F	E	F	E		N	E	E	Yes	Yes
New Jersey	F	N	U	F		N	E	N	Yes	Yes
New Mexico	U 4	N	N 4	7		7	E 4	7	Yes 11	Yes
New York	F	F	F	F		F	F	F	Yes	Yes
North Carolina	F	N	F	N		N	N	N	No	Yes
North Dakota	N	N	N	N		N	N	N	Yes	Yes
Ohio	F	N 8	F	E		E	F	N	No	Yes
Oklahoma	N	N	N	N		N	N	N	Yes	Yes
Oregon	F	E	F	E		N	F	E	No	Yes
Pennsylvania	F	N	F	N		N	N	N	Yes	Yes
Rhode Island	U	N	U	N		N	U	E	7	Yes
South Carolina	N	N	N	N		F	N	N	E	Yes
South Dakota	U	N	U	N		F	N	N	U	Yes
Tennessee	U	E	U	E		E	E	E	Yes	Yes
Texas	N	N	7	N		N	7	N	7	Yes
Utah	U	E	F	E		E	U	N	No	7
Vermont	F	E	F	E		E	F	E	7	Yes
Virginia	N	E	F	E		E	N	E	No	No
Washington	F	F	F	F		F	F	E	7	Yes
West Virginia	F	E	F	E		E	F	E	U	Yes
Wisconsin	F	N	F	N		N	F	N	7	Yes
Wyoming	N	N	N	N		N	N	N	Yes	Yes
TOTALS:										
F - Flow through	19	5	22	8		8	12	3	Yes 22	44
N - Normalization	22	30	12	23		24	26	33	No 15	4
E - Either method	2	12	0	13		12	5	11	1	0
U - Undecided	7	3	12	3		5	7	2	3	0
O - Other or not reported	1	1	5	4		2	1	2	10	3

* Includes District of Columbia.

Footnotes on next page.

1969, 22 State commissions reported excluding tax deferrals from the rate base (however, 14 commissions did not report or were undecided on this item); 6 of the commissions which normalized accelerated depreciation did not exclude tax deferrals from the rate base. However, in 1977, 44 commissions required exclusion of accumulated tax deferrals from the rate base, and only 2 of the States which prefer normalization of accelerated depreciation failed to exclude tax deferrals from the rate base.

Some additional insight into actual ratemaking treatment can be gained by looking at the practices of individual utilities. Only limited information on this subject is available; however, data do exist on the treatment of the investment tax credit by the 212 Class A and B electric utilities. Of these utilities 68 at least at one time in their past have used flow through accounting for the investment tax credit, and of these 68, 26 continue to do so.[1]

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[1] Federal Energy Regulatory Commission, Statistics of Privately Owned Electric Utilities in the United States, 1976. Pp. 1002—1005.

Footnotes, Table 1

[1] Asset Depreciation Range did not exist in 1969.

[2] States in which accumulated deferrals are included in the rate base but treated as cost free capital (i.e., no rate of return is allowed on the deferrals) are designated "Yes."

[3] Not used in regulated industry. State does not regulate electric or gas utilities.

[4] Flow through for telephone.

[5] Four utilities normalize.

[6] Commission requires consistent treatment of tax after election of method by each utility, based on latest Commission policy.

[7] Not reported.

[8] Some companies continue to flow through under orders issued prior to the Tax Reform Act of 1969.

[9] Not used.

[10] Four utilities use cost of service normalization.

[11] No for telephone.

SOURCES: Federal Power Commission, Federal and State Commission Jurisdiction and Regulation of Electric, Gas, and Telephone Utlities, Washington, D.C., U.S. Govt. Print. Off., 1967. Pp. 38—39.

National Association of Regulatory Utility Commissioners, 1977 Annual Report on Utility and Carrier Regulation, Table 46, Pp. 516—519.

IV. The Economic Effects of Alternative Regulatory Treatments: Static Analysis

This section of the paper provides the results of algebraic derivations of the relationships between the revenue requirements, tax payments, cash flow, and book profits of a utility under alternative regulatory treatments of accelerated depreciation and the investment tax credit. The algebraic statements are followed by interpretations and analyses of their implications. The nature of the section is such that it might appear to the casual reader that the material would better be placed in an appendix. However, appendix treatment has been avoided for several reasons, chief among them that the material in this section is central to the understanding of the economic effects of the alternative regulatory treatments of accelerated depreciation and the investment tax credit. Although the equations displayed in the following pages are numerous, they are simple and readily understandable to those familiar with regulatory economics.

The purpose of the equations is to make explicit the economic relationships between the alternative regulatory treatments at a given point in time. Thus, they are static in nature rather than dynamic. There are interesting and important policy questions which can be answered only by use of such formulas. For example: What is the impact on utility rates this year of normalizing accelerated depreciation (or the investment tax credit) rather than flowing the benefits through to ratepayers? What is the impact on tax payments of the utilities? On profits and cash flow? How do these impacts compare to past years? How do they change when the tax law changes? What are the factors which determine the nature and direction of these relationships? The explicit static relationships are also necessary for a direct analysis of the so-called "phantom tax" issue, because, as stated by its proponents, this issue concerns the taxes paid versus the customer charges for taxes **in a given year.**

The equations developed here should also facilitate applied research by enabling analysis of the effects of the tax benefits and their alternative regulatory treatments each year. For example, utility regulatory commissions and their staff may find the equations useful in estimating the economic impact of accelerated depreciation and the investment tax credit, combined with their alternative regulatory treatments, on the utilities under their jurisdiction, either historically or prospectively (for this use, particular attention must be paid to the assumptions involved in the equations). As an illustration of the use of the equations in historical analysis, the next section of the paper applies the relationships to historical data from the electric utility industry. It seems rather unusual that we have accumulated over 20 years of experience with accelerated depreciation and 15 years of experience with the investment tax credit without subjecting the results to careful review; past analysis of this issue is limited almost exclusively to hypothetical simulations.

The equations presented in this section are based on a model which implicitly incorporates several simplifying assumptions. First, the model necessarily portrays a highly abstracted view of the regulatory process. Whereas actual regulatory policy involves an intricate blending of economic, social, political, and environmental objectives through a variety of regulatory instruments, the model characterizes the process as largely mechanistic, involving the application of established rules to determine allowable utility rates. Since the debate over flow through versus

normalization treatment has focused almost exclusively on economic and financial implications, this approach would not seem to impose serious restrictions on the analysis.

The model assumes that the actual rate of return is always equal to the allowed rate of return; this is the strongest possible version of assuming no regulatory lag. The model also assumes that the overall allowed rate of return does not differ under the alternative regulatory treatments. This assumption has two important implications. The first is that the accumulation of deferred taxes and investment tax credits under normalization treatment does not alter the capitalization structure of the utility; this aspect of the invariant rate of return assumption is discussed further in section B, 2, where it first comes into play. The second implication of this assumption is that the regulatory commission does not adjust the rate of return on equity to compensate for any perceived differences in risk or financial strength attributable to the alternative regulatory treatments. This aspect of the assumption, and the implications of relaxing it, are examined in section VII, B.

In addition, the equations assume that all variables other than those specified remain unaffected (the standard ceteris paribus assumption) and that the results derived (e.g., a change in revenue requirements) will not be rendered impossible by market conditions. One aspect of the ceteris paribus assumption deserves amplification; the derivations assume that the availability of the tax benefits—accelerated depreciation and the investment tax credit—does **not** cause larger capital investment by the utilities. In other words, the derivations compare two utilities which are identical except for tax and ratemaking treatment; neither utility is induced into larger investment by the tax benefits or their ratemaking treatment. This approach, which is consistent with most of the prior work on this subject, simplifies the mathematics considerably and facilitates direct comparison of the alternative treatments. Whether the beneficial tax provisions do, in fact, stimulate higher capital investment in the utility industry has been the subject of considerable debate. The controversy, and its implications for the analytical results, are discussed further in section VII, C.

A. The General Model

The general utility regulatory formula used to determine allowed revenue, and the expressions for taxable income, income tax, cash flow, and book profits for a utility which uses straight line depreciation for both book and tax purposes and receives no investment tax credit can be written as follows:[1]

1 a) $$R_{1t} = r \cdot \left[V_t - \sum_{j=t-n}^{t} D^s_j \right] + D^s_t + C_t + T_{1t}$$

b) $$y_{1t} = R_{1t} - D^s_t - C_t - i_t$$

c) $$T_{1t} = z \cdot y_{1t}$$

d) $$F_{1t} = y_{1t} - T_{1t} + D^s_t$$

e) $$P_{1t} = y_{1t} - T_{1t}$$

f) $$i_t = u_t \cdot d_t \cdot \left[V_t - \sum_{j=t-n}^{t} D^s_j \right]$$

where: R_t = allowed or required revenue in year t

r = allowed rate of return

V_t = average gross value of assets in year t

D^s_t = total amount of straight line depreciation in year t

[1] The model used here is patterned after that presented in Pollock, Richard, The Effect of Alternative Regulatory Treatment of Tax Depreciation on Utility Tax Payments, National Tax Journal, Vol. XXVI, No. 1, March 1973. Pp. 43—57. However, Pollock misspecified the equations for book profits and failed to recognize the simultaneity of the overall allowed rate of return and debt replacement policy by the normalization utility.

$\sum_{j=t-n}^{t} D^s_j$ = total amount of straight line depreciation taken through year t on assets included in V_t (n = life of utility's assets)

C_t = operating costs (except interest and income taxes) in year t

y_t = taxable income in year t

i_t = interest expense in year t

T_t = Federal income tax in year t

z = Federal income tax rate (assumed to be a flat rate)

F_t = cash flow in year t

P_t = book profits in year t

u_t = interest rate paid on debt in year t

d_t = portion of assets financed by debt in year t

Thus, the allowed revenue, R_{1t}, is equal to: 1) the allowed rate of return, r,[1] multiplied by the rate base, $\left[V_t - \sum_{j=t-n}^{t} D^s_j\right]$, which equals the depreciated value of the utility's assets; plus 2) the cost of service, which equals depreciation, D^s_t, plus operating costs, C_t, plus income taxes T_{1t}. The equations for taxable income and income tax are standard and self explanatory. The equations for cash flow and book profits are, in fact, derived expressions. They are stated in terms of the tax variables, rather than in their more traditional format, because of the focus of this study on tax treatment. Thus, equation 1d is derived from the following expression:

$$F_{1t} = R_{1t} - C_t - i_t - T_{1t}$$

and equation 1e results from the following:

$$P_{1t} = R_{1t} - D^s_t - C_t - i_t - T_{1t}$$

This model, referred to as case 1, is used for comparative purposes throughout the analysis that follows. Because the derivations always refer to the situation in a given year, the t subscripts will be dropped for simplicity and merely understood to be present in the equations. In this shorthand, $\sum_{j=t-n}^{t} D^s_j$ will be expressed as $\sum_j D^s$.

B. Accelerated Depreciation

1) Flow through regulatory treatment

If a utility claims accelerated depreciation in computing its taxes and the resulting tax deduction is "flowed through" to ratepayers through lower revenue requirements, the equations above would be rewritten as follows:

2 a) $$R_2 = r\left[V - \sum_j D^s\right] + D^s + C + T_2$$

b) $$y_2 = R_2 - D^a - C - i$$

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[1] r is in fact a weighted average of the allowed rates of return on common equity, and on preferred equity, and the imbedded cost of long-term debt.

c) $T_2 = z \cdot y_2$

d) $F_2 = y_2 - T_2 + D^a$

e) $P_2 = y_2 - T_2 + (D^a - D^s)$

where: D^a = amount of accelerated depreciation in year t

Thus, a flow through utility uses accelerated depreciation in its tax calculations and straight line depreciation for book purposes; actual tax payments are taken into account in determining allowed revenue. The equations are straightforward[1] except for the expression for book profits, which is derived from the following equation:

$$P_2 = R_2 - D^s - C - i - z \cdot \left[R_2 - D^a - C - i \right]$$

Thus, book profits equal revenues minus book depreciation, operating costs, interest, and taxes. Taxes are calculated on the same basis as for ratemaking purposes, using accelerated depreciation.

The equations above may be used to derive the relationships between the variables in case 1 and in case 2. These relationships reveal the changes which would occur if a utility switched from straight line tax depreciation to accelerated depreciation with flow through regulatory treatment; alternatively, the relationships compare two otherwise identical utilities, one of which uses straight line tax depreciation, the other of which uses accelerated tax depreciation with flow through regulatory treatment. In the interest of brevity (and keeping tedium to a minimum), the derivations are omitted, and only the results are stated.

2 f) $$R_1 - R_2 = \frac{z \cdot (D^a - D^s)}{1 - z}$$

g) $$y_1 - y_2 = \frac{D^a - D^s}{1 - z}$$

h) $$T_1 - T_2 = \frac{z \cdot (D^a - D^s)}{1 - z}$$

i) $F_1 - F_2 = 0$

j) $P_1 - P_2 = 0$

The first three of these equations all have similar characteristics. Thus, in a year in which the aggregate amount of accelerated depreciation exceeds the amount of straight line depreciation (the interpretations of the derivations assume this condition to occur; it requires only that the amount of investment by the utility be growing in nominal terms), flow through treatment, combined with accelerated depreciation, will reduce the required revenue of the utility and its tax payments to the Federal Government. The amount of reduction in each quantity is determined by the excess of accelerated depreciation over straight line and by the tax rate. The reduction in revenue requirements, and thus the utility rates paid by customers, equals the decline in tax payments of the utility, and hence the tax receipts by the Government (thus the term "flow through"). The amount of tax payments and required revenues decline by more than $z \cdot (D^a - D^s)$ because taxes and revenues are simultaneously determined; a one dollar reduction in taxes leads to a one dollar reduction in required revenues which, in turn, leads to a further reduction in taxes, and so on. As an example of interpretation of the equations, if the tax rate is 48 percent, both required revenue and tax payments of

[1] The cash flow equation in this case, and in all the remaining cases, is derived as in case 1.

the utility will decline by approximately 192 percent of the reduction in taxes directly attributable to the excess of accelerated depreciation over straight line.

Under this treatment, the cash flow and book profits of the utility remain unchanged; all of the benefit of reduced taxes is passed on to the ratepayers. This fact, plus the potential financial liabilities to the utility from use of flow through (see discussion in section VII, B), no doubt explain the general preference of many utilities to use straight line depreciation for tax purposes if they know they will be subject to flow through regulatory treatment if they use accelerated depreciation.

2) Normalization with the deferred tax account excluded from the rate base

If a utility uses accelerated depreciation in computing its taxes and the resulting tax reduction is "normalized" for ratemaking purposes with the deferred tax account excluded from the rate base,[1] the utility equations would be rewritten as follows:

3 a) $$R_3 = r\cdot\left[V - \sum_j D^s - A\right] + D^s + C + T_3 + z\cdot(D^a - D^s)$$

b) $$y_3 = R_3 - D^a - C - i_n$$

c) $$T_3 = z\cdot y_3$$

d) $$F_3 = y_3 - T_3 + D^a$$

e) $$P_3 = y_3 - T_3 + (1 - z)\cdot(D^a - D^s)$$

f) $$i_n = u\cdot d\cdot\left[V - \sum_j D^s - A\right]$$

g) $$A = \sum_t z\cdot(D^a - D^s)$$

where: A = the deferred tax account
i_n = interest expense under normalization
e = portion of deferred tax account used for debt replacement

Thus, a normalization utility under this treatment uses accelerated depreciation in its tax calculations and straight line depreciation for book purposes; the taxes taken into account in determining the cost of service are the "normalized" taxes, i.e., actual taxes paid plus the difference in tax payments which results from accelerated depreciation. In addition, under this version of normalization, the deferred tax account, which represents the accumulation of tax reductions which have resulted from the excess of accelerated depreciation over straight line depreciation over the years, is subtracted from the rate base. The rationale for this treatment is that the deferred tax account represents capital contributed to the utility from sources other than the company's owners or creditors, and therefore, it is capital on which the utility need not and should not be permitted to earn a rate of return.

For normalization ratemaking treatment a different term for interest expense appears in the taxable income equation. This is because the amount of interest expense under normalization will most likely be less than in the absence of normalization. Under the assumption that accelerated depreciation does not lead to greater capital investment, the additional internally generated funds resulting from the retention of deferred taxes by the normalization utility will serve as a substitute for debt and/or equity financing which would be necessary without normalization. To the extent that deferred

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[1] This is the most common treatment by regulatory commissions; however, some regulatory agencies allow a full or reduced rate of return on the deferred tax account. See case 4 below and section III.

taxes replace debt financing, interest payments will be reduced; this affects taxable income and, thereby, the other variables of concern in this analysis.

An implication of the earlier stated assumption that the overall allowed rate of return, r, remains constant regardless of ratemaking treatment is that the use of deferred taxes as a financing source is assumed not to change the capitalization structure of the normalization utility; in other words, the model assumes that deferred taxes substitute proportionately for the utility's external capital sources (hence, the representation in equation 3f). This appears to be a reasonable assumption in the aggregate because the total capitalization structure of the utility industry has remained fairly stable over long time periods despite considerable growth of accumulated tax deferrals,[1] and because the capitalization structures of flow through and normalization utilities appear to be virtually indistinguishable.[2] A more general (and complicated) approach would be to allow for ratios of debt and equity replacement by the deferred taxes which differ from the ratios of debt and equity in the utility's capitalization structure. This more general development may be necessary to apply the model to some specific utilities. However, this approach would require the addition of another equation to the model to calculate the overall allowed rate of return for the normalization utility, r_3, as a weighted average of the interest rate and the allowed rate of return on equity weighted by the proportions of long-term debt and equity in the utility's capitalization structure.[3]

The book profits equation for this case differs from the previous two cases. The book profits expression for normalization is derived from the following equation:

$$P_3 = R_3 - D^s - C - i_n - z\cdot\left[R_3 - D^s - C - i_n\right]$$

This equation is parallel to the book profits equation under flow through treatment; all the terms are identical except that straight line depreciation is used to calculate book taxes. Thus, just as in the flow through case, taxes for the book profits calculation are computed on the same basis as for ratemaking purposes.

As in the previous example, the equations stated above may be used to derive the relationships between the variables in case 1 (the base case with no accelerated depreciation or investment tax credit) and the present case. These derived relationships are as follows:

3 h) $$R_1 - R_3 = \frac{(r - z\cdot u\cdot d)\cdot A}{1 - z}$$

i) $$y_1 - y_3 = (D^a - D^s) + \frac{(r - u\cdot d)\cdot A}{1 - z}$$

j) $$T_1 - T_3 = z\cdot\left[(D^a - D^s) + \frac{(r - u\cdot d)\cdot A}{1 - z}\right]$$

k) $$F_1 - F_3 = (r - u\cdot d)\cdot A - z\cdot(D^a - D^s)$$

l) $$P_1 - P_3 = (r - u\cdot d)\cdot A$$

Thus, accelerated depreciation combined with normalization treatment under which the deferred tax account is excluded from the rate base will reduce required revenues (utility rates) and

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[1] For data on electric utilities see Table 2, column 7, in section V, A.

[2] See: Hollister, Kenneth, and Mary Ellen Guzewicz, 100 Largest Utility Companies, Comparative Financial Data for the Years 1973—1977, Dean Witter Reynolds Inc., August 1978. P. 9.

[3] For an example of how this equation would be developed see: Thompson, Howard E., and Jerry J. Weygandt, The Ratemaking Treatment of the Investment Tax Credit for Public Utilities, The Journal of Business, October 1977. Pp. 508—519.

book profits so long as the deferred tax account is positive.[1] The reductions in required revenue and book profits result solely from exclusion of the deferred tax account from the rate base. No reduction in required revenues or increase in profits flows directly from the reduced tax liability resulting from accelerated depreciation because the "normalized" tax liability is used in computing both required revenues and book profits. It is useful here to recall that the book profits equation relates to the amount of book profits, not the rate of return. Accumulated deferred taxes are, in part, substituting as a source of financing for outside equity capital which would otherwise be required. The **amount** of allowed return is reduced to reflect that substitution; however, the **rate** of return on the equity financing is unchanged. The amount of reduction in required revenues depends on the allowed rate of return, the tax rate, the interest rate, and the portion of the deferred tax account which substitutes for debt. As a simple example, if r = .075, z = .48, u = .06, and d = .5, then the reduction in revenues will equal .1165A. Tax payments of the utility will also be lower under this treatment due to the excess of accelerated depreciation over straight line depreciation, and because of the reduction in equity profits resulting from exclusion of the deferred tax account from the rate base.

The effect of this normalization treatment on cash flow of the utility is interesting because it may eventually reverse direction even if accelerated depreciation remains larger than straight line. Initially, accelerated depreciation combined with this treatment will increase cash flow due to the tax savings from the higher depreciation deductions. However, as the deferred tax account grows, it may eventually reach a size such that the reduction in permitted revenues which results from its exclusion from the rate base exerts a larger negative effect on cash flow than the positive effect of the tax savings from accelerated depreciation. The point at which this reversal occurs is fairly sensitive to the value of d, the portion of deferred taxes used to replace debt.

In addition to comparing this normalization treatment with the base case, it is also interesting and important for policy purposes to compare this treatment to flow through. The definitional equations lend themselves readily to such a comparison, and the results are as follows:

3 m) $$R_3 - R_2 = \frac{z\cdot(D^a - D^s) - (r - z\cdot u\cdot d)\cdot A}{1 - z}$$

n) $$y_3 - y_2 = \frac{z\cdot(D^a - D^s) - (r - u\cdot d)\cdot A}{1 - z}$$

o) $$T_3 - T_2 = z\cdot\left[\frac{z\cdot(D^a - D^s) - (r - u\cdot d)\cdot A}{1 - z}\right]$$

p) $$F_3 - F_2 = z\cdot(D^a - D^s) - (r - u\cdot d)\cdot A$$

q) $$P_3 - P_2 = -(r - u\cdot d)\cdot A$$

The first four of these equations are similar in form and, with the exception of the revenue equation, they have a common element with equation 3k. Their interpretation is therefore similar. The revenue requirements, tax payments, and cash flow of the utility will initially be higher under normalization treatment with the deferred tax account excluded from the rate base than under flow through treatment. However, as the deferred tax account of the normalization utility grows, it may eventually reach a point such that these relationships reverse. This "reversal point" will be reached earlier for revenue requirements than for the other variables. Using the same example values as in

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[1] The term (r − u·d) will be positive because r>u since the return paid on equity will exceed the interest rate paid on debt.

the earlier example,[1] the "reversal point" for revenues of the utility will be reached when $\frac{A}{(D^a - D^s)} = 7.92$; in other words, for values of the ratio above this level, required revenues under this normalization treatment will be less than under flow through. The "reversal point" for tax payments and cash flow occurs at higher levels of the ratio $\frac{A}{(D^a - D^s)}$; for the example values the reversal point is reached when the ratio equals 10.67.

These relationships between flow through treatment and normalization with the deferred tax account excluded from the rate base may be summarized as follows. The relationships depend on the value of the ratio $\frac{A}{(D^a - D^s)}$. If this ratio is within the following "ideal range" of values,

$$\frac{z}{(r - z \cdot u \cdot d)} < \frac{A}{(D^a - D^s)} < \frac{z}{(r - u \cdot d)}$$

then this normalization treatment will yield lower required revenues, i.e., utility rates charged to customers, and will simultaneously provide higher tax payments by the utility, and higher cash flow for the utility. If the ratio is below the lower limit of this range, all of the variables, including required revenue, will be higher under the normalization treatment than under flow through. If the ratio is above the upper limit of the range, all the variables will be lower under normalization than flow through.

Book profits under this form of normalization will be lower than under flow through treatment so long as the deferred tax account is positive. Again, this results from the fact that the deferred taxes accumulated by the normalization utility serve as a source of financing and substitute, in part, for outside equity financing, thus reducing the amount (although not the rate) of equity profit.

3) Normalization with deferred tax account not excluded from the rate base

A second version of normalization treatment of accelerated depreciation is similar to the method described in the previous case with the exception that the deferred tax account is not excluded from the rate base. The utility equations for this case would be written as follows:

4 a) $$R_4 = r \cdot \left[V - \sum_j D^s \right] + D^s + C + T_4 + z \cdot (D^a - D^s)$$

b) $$y_4 = R_4 - D^a - C - i_n$$

c) $$T_4 = z \cdot y_4$$

d) $$F_4 = y_4 - T_4 + D^a$$

e) $$P_4 = y_4 - T_4 + (1 - z) \cdot (D^a - D^s)$$

Thus, a normalization utility under this treatment uses accelerated depreciation in its tax calculations and straight line depreciation for book purposes. The taxes taken into account in determining the cost of service are "normalized" taxes, i.e., the actual taxes paid plus the difference in tax payments which results from accelerated depreciation. In this version of normalization treatment, unlike the previous case, the deferred tax account is not subtracted from the rate base. However, like the previous case, a different term for interest expense appears in the taxable income equation to take into account debt replacement by the accumulated deferred taxes.

Using the above equations to derive the relationships between this case and case 1 (the base case with no accelerated depreciation or investment tax credit) yields the following results:

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[1] z = .48, r = .075, u = .06, and d = .5.

4 f) $$R_1 - R_4 = \frac{-z \cdot u \cdot d \cdot A}{1 - z}$$

g) $$y_1 - y_4 = (D^a - D^s) - \frac{u \cdot d \cdot A}{1 - z}$$

h) $$T_1 - T_4 = z \cdot \left[(D^a - D^s) - \frac{u \cdot d \cdot A}{1 - z} \right]$$

i) $$F_1 - F_4 = - u \cdot d \cdot A - z \cdot (D^a - D^s)$$

j) $$P_1 - P_4 = - u \cdot d \cdot A$$

Thus, revenue requirements and book profits under this treatment will both be **higher** than under the base case (this is the opposite result from the previous form of normalization) by amounts dependent on the extent to which the accumulated deferred taxes substitute for debt. The reason for this is somewhat complex and is best perceived by beginning with the book profits equation; recalling again that the equation refers to the amount of book profits, not the rate of return. This form of normalization allows the rate of return, r, to be earned on the deferred tax account, even though the deferred taxes serve as substitute financing for outside equity and debt capital. The rate of return, r, is a weighted average of the allowed rates of return on equity capital and the imbedded interest rate on debt. Thus, compared to the base case, the total amount of return on the rate base will be the same (as opposed to the previous version of normalization in which the amount of return is reduced by exclusion of the deferred tax account from the rate base); however, the interest expense will be less due to the partial substitution of the accumulated deferred taxes for debt. The amount of equity profit is thus increased by an amount equal to the interest savings due to debt replacement by the accumulated deferred taxes, as reflected in equation 4j. It should also be noted that in this case, as contrasted to the earlier cases, while the allowed rate of return is held constant, the actual realized rate of return on equity rises because a higher amount of profit accrues to a lower amount of outstanding equity capital.

The higher profit has an impact on tax payments by the utility. The tax payments will be reduced from the base case due to the excess of accelerated depreciation over straight line depreciation, but they will be increased by the increase in equity profits which results from the interest savings due to debt replacement by the accumulated deferred taxes. Normalization of the tax payments in determining required revenues prevents a reduction in revenues due to the effect of accelerated depreciation on taxes; however, any effect on taxes resulting from the interest savings due to debt replacement by the deferred taxes will affect required revenues, as is clear from equation 4f. Cash flow is always higher under this treatment than under the base case; it is higher by the amount of the direct tax savings due to accelerated depreciation plus the interest savings due to debt replacement by the accumulated deferred taxes.

The relationships between this treatment and flow through treatment can also be derived, and the results are as follows:

4 k) $$R_4 - R_2 = \frac{z \cdot (D^a - D^s) + z \cdot u \cdot d \cdot A}{1 - z}$$

l) $$y_4 - y_2 = \frac{z \cdot (D^a - D^s) + u \cdot d \cdot A}{1 - z}$$

m) $$T_4 - T_2 = z \cdot \left[\frac{z \cdot (D^a - D^s) + u \cdot d \cdot A}{1 - z} \right]$$

n) $$F_4 - F_2 = z \cdot (D^a - D^s) + u \cdot d \cdot A$$

o) $$P_4 - P_2 = u \cdot d \cdot A$$

Thus, required revenues, tax payments, cash flow, and book profits of the utility will all be higher under this version of normalization than under flow through treatment so long as accelerated depreciation exceeds straight line depreciation. Unlike the previous normalization treatment which excludes the deferred tax account from the rate base, under this type of normalization the buildup of the deferred tax account increases the excess of required revenues, tax payments, cash flow, and profits over the amounts which would occur under flow through treatment.

C. Investment Tax Credit

1) Flow through regulatory treatment

If a utility benefits from the investment tax credit (ITC) and the resulting tax reduction is "flowed through" to ratepayers through lower revenue requirements, the utility equations employed in the earlier analyses would appear as follows (the effects of accelerated depreciation are ignored during this analysis):

5 a) $$R_5 = r \cdot \left[V - \sum_j D^s \right] + D^s + C + T_5$$

b) $$y_5 = R_5 - D^s - C - i$$

c) $$T_5 = z \cdot y_5 - I^a$$

d) $$F_5 = y_5 - T_5 + D^s$$

e) $$P_5 = y_5 - T_5$$

where: I^a = actual amount of investment tax credit in year t

The equations above are very similar to those in case 1, except that the investment tax credit is, of course, subtracted from the tax computation. Under flow through treatment, the amount of actual taxes paid is included as a cost of service in the rate formula. The book profits equation is a derived expression which results from the following equation:

$$P_5 = R_5 - D^s - C - i - \left[z \cdot \left[R_5 - D^s - C - i \right] - I^a \right]$$

Thus, book profits equal revenues minus book depreciation, operating costs, interest, and book taxes. Book taxes are calculated by the same method used to compute taxes for ratemaking purposes, just as in the accelerated depreciation cases.

As in the accelerated depreciation cases, the above equations may be used to derive the relationships between the variables in this case, involving flow through of the investment tax credit, and case 1, which had no accelerated depreciation or investment tax credit. The results of such a derivation are as follows:

5 f) $$R_1 - R_5 = \frac{I^a}{1 - z}$$

g) $$y_1 - y_5 = \frac{I^a}{1 - z}$$

h) $$T_1 - T_5 = \frac{I^a}{1 - z}$$

i) $$F_1 - F_5 = 0$$

j) $$P_1 - P_5 = 0$$

Thus, with flow through regulatory treatment of the investment tax credit, required revenues (utility rates) and tax payments of the utility will be lower than the base case by equal amounts, just as in the case of flow through treatment of accelerated depreciation. The amount of the reduction in revenues and taxes is a multiple of the actual ITC for the year because tax payments and required revenues are simultaneously determined; if the tax rate is 48 percent the reduction will be approximately 1.92 times the amount of the ITC received by the utility. There is no change in cash flow or book profits of the utility under this treatment because all of the benefit of reduced taxes is passed on to customers through lower rates. The parallel between the above results and the comparable equations in case 2, the flow through of accelerated depreciation (equations 2f-2j), is noteworthy.

2) Rate base normalization (general method)

If the tax reduction which results from the investment tax credit is "normalized" by the general method (option 1) allowed by the tax law, which will be referred to here as the rate base method, the utility equations would appear as follows:

6 a) $$R_6 = r\cdot\left[V - \sum_j D^s - B\right] + D^s + C + T_6 + I^a$$

b) $$y_6 = R_6 - D^s - C - i_m$$

c) $$T_6 = z\cdot y_6 - I^a$$

d) $$F_6 = y_6 - T_6 + D^s$$

e) $$P_6 = y_6 - T_6 - I^a$$

f) $$i_m = u\cdot d\cdot\left[V - \sum_j D^s - B\right]$$

g) $$B = \sum_t (I^a - I^n)$$

where: B = accumulated deferred investment tax credits

i_m = interest expense under ITC normalization

I^n = normalized amount of investment tax credit in year t

I^n for a utility in year t is equal to the summation of normalized ITC amounts for all the utility's qualifying assets that year. For a particular qualifying asset in year t, I^n equals I^a divided by the asset's useful life for book purposes.

Under rate base normalization the utility makes adjustments to its rate base by subtracting the actual amount of the ITC from its rate base and then adding the normalized ITC amount back into the rate base over the life of the asset. This procedure amounts to subtracting the accumulated deferred investment tax credits from the rate base. It yields the same results, so far as the rate base is concerned, as if the original cost of the assets had been reduced by the amount of the ITC.[1] The taxes taken into account in determining the cost of service are the "normalized" taxes, i.e., actual taxes paid plus the amount of the ITC. A different interest term appears in the taxable income equation to allow for debt replacement by the accumulated deferred ITC (just as in the case of accumulated deferred taxes in case 3 above).

The book profits equation is derived from the following relationship:

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[1] Rate base normalization is not fully compatible with treating the assets as if their cost were reduced by the ITC, however, because the tax code disallows any adjustment to the cost of service depreciation charge to reflect the lower asset cost. See Treasury Regulations, sec. 1.46-5(b)(2)(i), and discussion in section VIII, A.

$$P_6 = R_6 - D^s - C - i_m - z\cdot\left[R_6 - D^s - C - i_m\right]$$

Again, the taxes taken into account in the profits calculation are computed in the same manner as for ratemaking purposes; the rate base normalization procedure ignores the investment tax credit in the calculation of book taxes.

If the above equations are used to derive the relationships between the variables under rate base normalization of the ITC and the base case, with no ITC, the results are as follows:

6 h) $$R_1 - R_6 = \frac{(r - z\cdot u\cdot d)\cdot B}{1 - z}$$

i) $$y_1 - y_6 = \frac{(r - u\cdot d)\cdot B}{1 - z}$$

j) $$T_1 - T_6 = I^a + \frac{z\cdot(r - u\cdot d)\cdot B}{1 - z}$$

k) $$F_1 - F_6 = (r - u\cdot d)\cdot B - I^a$$

l) $$P_1 - P_6 = (r - u\cdot d)\cdot B$$

Thus, under rate base normalization, required revenues (utility rates), tax payments by the utility, and book profits will be lower than under the base case, so long as the accumulated deferred ITC is positive. With the exception of the taxable income equation, the relationships above are exactly parallel to the relationships under normalization of accelerated depreciation with the deferred tax account excluded from the rate base (see equation 3h-31).

Thus, the reductions in required revenues, tax payments, and profits are similar to those described in the earlier case. Specifically, the reductions result solely from the exclusion of the accumulated deferred ITC from the rate base; no reductions result directly from the actual ITC each year because of its "normalization."

The cash flow effect of this normalization treatment is also parallel to that in case 3; cash flow will initially increase (compared to the base case) under rate base normalization; however, this situation will reverse if the accumulated deferred ITC grows large enough. This reversal occurs because at some point the effect of the rate base adjustment in reducing revenues may eventually exceed the tax savings from the ITC.

Rate base normalization of the ITC may also be compared to flow through of the ITC, and the results are as follows:

6 m) $$R_6 - R_5 = \frac{I^a - (r - z\cdot u\cdot d)\cdot B}{1 - z}$$

n) $$y_6 - y_5 = \frac{I^a - (r - u\cdot d)\cdot B}{1 - z}$$

o) $$T_6 - T_5 = z\cdot\left[\frac{I^a - (r - u\cdot d)\cdot B}{1 - z}\right]$$

p) $$F_6 - F_5 = I^a - (r - u\cdot d)\cdot B$$

q) $$P_6 - P_5 = - (r - u\cdot d)\cdot B$$

These equations are all exactly parallel to those which compare flow through of accelerated depreciation to normalization under which the deferred tax account is excluded from the rate base (equations 3m-3q), and therefore their interpretation is the same. Revenue requirements, tax payments, and cash flow of the utility will all initially be higher under rate base normalization of the

investment tax credit than under flow through. However, if the accumulated deferred ITC increases in size sufficiently, these relationships eventually will reverse. Just as in the previous case, the relationship will reverse for revenue requirements before it does for the other variables. The "ideal range" for the ITC is as follows:

$$\frac{1}{(r - z \cdot u \cdot d)} < \frac{B}{I^a} < \frac{1}{(r - u \cdot d)}$$

If the ratio $\frac{B}{I^a}$ is within this "ideal range," then rate base normalization simultaneously produces lower required revenues (utility rates) and higher tax payments and cash flow of the utility than flow through treatment. If the ratio is below the lower limit of the range, then all of the variables, including required revenues, will exceed the values under flow through. If the ratio is higher than the upper limit, then all the variables will be lower than the comparable values under flow through treatment.

Book profits under rate base normalization will be lower than under flow through treatment so long as the accumulated deferred ITC is positive, because the deferred tax credits serve as a source of financing for the normalization utility, thus reducing reliance on outside equity capital and the amount of equity profit.

3) Cost of service normalization (ratable flow through)

If the tax reduction which results from the investment tax credit is normalized by the ratable flow through method (option 2), which will be referred to here as the cost of service method, the utility equations would appear as follows:

7 a) $$R_7 = r \cdot \left[V - \sum_j D^s \right] + w \cdot B + D^s + C + T_7 + (I^a - I^n)$$

b) $$y_7 = R_7 - D^s - C - i_m$$

c) $$T_7 = z \cdot y_7 - I^a$$

d) $$F_7 = y_7 - T_7 + D^s$$

e) $$P_7 = y_7 - T_7 - (I^a - I^n)$$

f) $$w = r_e - r$$

where: r_e = rate of return on common equity

w = differential between rate of return on common equity and overall allowed rate of return

A new term, w·B, appears in the ratemaking equation in this case and is discussed below. The amount of taxes taken into account as a cost of service ignores the actual amount of ITC and is reduced by the normalized amount of the ITC. As in the previous case, a different interest term is included in the taxable income equation to allow for debt replacement by the accumulated deferred investment tax credits. The equation for book profits is derived from the following expression:

$$P_7 = R_7 - D^s - C - i - \left[z \cdot \left[R_7 - D^s - C - i \right] - I^n \right]$$

Thus, again taxes in the book profits expression are computed on the same basis as for ratemaking purposes; in this case ignoring the actual ITC and reducing taxes by the normalized ITC.

The term w·B appears in the ratemaking equation to reflect the fact that under this treatment, not only is the accumulated deferred investment tax credit not excluded from the rate base, but it is allowed to earn the rate of return on equity rather than the overall rate of return.[1] This treatment

[1] The introduction of the term w·B into the equation is solely to preserve comparability with the prior cases. An alternative treatment would have been to use a new r, r', as a new weighted average rate of return which includes allowing the equity rate of return on the accumulated deferred ITC.

follows from the paragraph in the reports of the Ways and Means and Finance Committees on the Revenue Act of 1971 which describes the operational meaning of the disallowance of any rate base adjustment under option 2 treatment of the investment tax credit. The paragraph is the following:

> In determining whether or to what extent a credit has been used to reduce the rate base, reference is to be made to any accounting treatment that can affect the company's permitted profit on investment by treating the credit in any way other than as though it had been contributed by the company's common shareholders. For example, if the "cost of capital" rate assigned to the credit is less than that assigned to common shareholders' investment, that would be treated as, in effect, a rate base adjustment.[1]

The applicability of this paragraph is made somewhat uncertain by the following paragraph which appears in the proposed Treasury regulations implementing this section of the 1971 Act:

> (3) **Rate base.** For purposes of this section, the term "rate base" means the base to which the taxpayer's rate of return for ratemaking purposes is applied (i.e., the monetary amount which is used as the divisor in calculating rate of return or the amount which is multiplied by the fair rate of return to determine the allowable return in the fixing of rate levels). In determining whether or to what extent a credit allowed under section 38 (determined without regard to section 46(e)) reduces the rate base, reference shall be made to any accounting treatment of such credit that can affect the taxpayer's permitted profit on investment. Thus, for example, assigning a "cost of capital" rate to the amount of such credit which is less than the permissible overall rate of return (determined without regard to the credit) would be treated as, in effect, a rate base adjustment. What is the overall rate of return depends upon the practice of the regulatory body. Thus, for example, an overall rate of return may be a rate determined on the basis of an average or weighted average of allowable rates of return on investments by common stockholders, preferred stockholders, and creditors.[2]

These regulations were proposed on February 17, 1972, but as of this writing have not yet been adopted by the Treasury! Thus, the Committee reports remain the higher authority in interpreting the statute, and so the equity rate of return appears to be allowable on the accumulated deferred investment tax credits.[3] If the proposed regulations prevailed, the term $w \cdot B$ would not appear in equation 7a above.

As in the previous cases, the definitional equations for cost of service normalization of the investment tax credit may be used to derive the relationships between this treatment and the base case (no accelerated depreciation and no ITC), and the results are as follows:

7 g) $$R_1 - R_7 = \frac{I^n - (w + z \cdot u \cdot d) \cdot B}{1 - z}$$

h) $$y_1 - y_7 = \frac{I^n - (w + u \cdot d) \cdot B}{1 - z}$$

i) $$T_1 - T_7 = I^a + \frac{z \cdot [I^n - (w + u \cdot d) \cdot B]}{1 - z}$$

j) $$F_1 - F_7 = I^n - I^a - (w + u \cdot d) \cdot B$$

k) $$P_1 - P_7 = - (w + u \cdot d) \cdot B$$

While not exactly analogous, there is an obvious similarity between the relationships above and those for the normalization treatment of accelerated depreciation which does not exclude the deferred tax account from the rate base (equations 4f to 4j), and the explanations are somewhat similar. Two factors affect the level of profits in this case compared to the base case. Just as in case 4, profits are higher in this case due to the interest savings resulting from debt replacement by the accumulated deferred investment tax credits (also, just as in case 4, while the allowed rate of return is held constant, the actual realized rate of return on equity is increased because of an increased amount of profit accruing to a reduced amount of equity capital). In this case, the amount

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[1] See page 41 for context of quotation and citations.

[2] Treasury Regulations, sec. 1.46-5(b)(3).

[3] There is some difference of opinion on this point; See Opinion No. 19, Carolina Power & Light Company, docket No. ER76-495 (Phase II), Federal Energy Regulatory Commission, issued August 2, 1978. This opinion reversed an earlier decision and refused to allow the equity rate of return on the accumulated deferred investment tax credits.

of profit is also higher because the equity rate of return, rather than the overall rate of return, is allowed on the accumulated deferred investment tax credits.

The two factors which operate to increase the profits of the firm also affect tax payments in a positive direction. Affecting tax payments in the opposite direction are the actual amount of investment tax credit, which directly reduces tax payments, and the normalized amount of the investment tax credit, which reduces tax payments indirectly through its effect in reducing revenues. Required revenues in this case are reduced by the amount of the normalized investment tax credit but affected in a positive direction by the effect of the reduced interest expense in increasing the tax liability and by the equity rate of return being allowed on the accumulated deferred investment tax credit. Cash flow is affected positively by the factors which increase profits and reduce taxes; it is affected negatively by the factor which reduces required revenues.

The relationships between cost of service normalization and flow through of the investment tax credit are as follows:

7 l) $$R_7 - R_5 = \frac{(I^a - I^n) + (w + z \cdot u \cdot d) \cdot B}{1 - z}$$

m) $$y_7 - y_5 = \frac{(I^a - I^n) + (w + u \cdot d) \cdot B}{1 - z}$$

n) $$T_7 - T_5 = z \cdot \left[\frac{(I^a - I^n) + (w + u \cdot d) \cdot B}{1 - z}\right]$$

o) $$F_7 - F_5 = (I^a - I^n) + (w + u \cdot d) \cdot B$$

p) $$P_7 - P_5 = (w + u \cdot d) \cdot B$$

These equations are all quite similar in form to those which compare flow through of accelerated depreciation to normalization treatment under which the deferred tax account is not excluded from the rate base (equations 4k to 4o) except for the appearance of the w term in the above equations. Thus, under cost of service normalization of the investment tax credit, required revenues, tax payments, and cash flow will all be higher than under flow through treatment so long as $I^a > I^n$, which requires only that investment by the utility be growing in nominal terms. Profits of the utility will always be higher under cost of service normalization than under flow through due to the interest savings attributable to debt replacement by, and the equity rate of return allowed on, the accumulated deferred investment tax credits. In this case, contrasted with the previous case of rate base normalization, the buildup of accumulated deferred investment tax credits widens the differences between the results under flow through and cost of service normalization.

Since it is the utility itself, rather than the regulatory commission, which has (or had) the option of choosing between cost of service normalization and rate base normalization of the investment tax credit, it is useful to make the relationship between the two normalization treatments explicit. The relationship is as follows:[1]

7 q) $$R_7 - R_6 = \frac{r_e \cdot B - I^n}{1 - z}$$

r) $$y_7 - y_6 = \frac{r_e \cdot B - I^n}{1 - z}$$

s) $$T_7 - T_6 = \frac{z \cdot \left[r_e \cdot B - I^n\right]}{1 - z}$$

t) $$F_7 - F_6 = r_e \cdot B - I^n$$

u) $$P_7 - P_6 = r_e \cdot B$$

[1] The utility does not have the option of choosing between the normalization treatments of accelerated depreciation; the type of normalization is imposed on the utility by the regulatory commission.

Therefore, required revenues, tax payments, cash flow, and profits will all be higher under cost of service normalization than under rate base normalization so long as $r_e \cdot B > I^n$, which will almost certainly be the case since the assets of utilities are relatively long lived.

D. A Note on Additivity

As a final observation in this section, it will be noted without proof that the results concerning treatment of accelerated depreciation and treatment of the investment tax credit are additive. Thus, for example, the relationship between R_8, the required revenues of a utility which flows through the benefits of both accelerated depreciation and the investment tax credit, and the required revenues for the base case, R_1, would be as follows:

$$R_1 - R_8 = \frac{z \cdot (D^a - D^s) + I^a}{1 - z}$$

V. Estimated Economic Effects of Alternative Regulatory Treatments in the Electric Utility Industry

This section applies the algebraic relationships presented in section IV to tax and financial data from the electric utility industry. In addition to illustrating use of the equations, this exercise demonstrates the relationships between the alternative regulatory treatments and provides insight into the economic effects of the tax provisions on the utility industry. The Class A and B privately owned electric utilities have been chosen for the analysis because of data availability. The Federal Energy Regulatory Commission (FERC; formerly the Federal Power Commission, FPC) annually publishes extensive compilations of financial and operating data on these utilities. Even so, some of the data required for the calculations are not available, or are unreliable and, therefore, must be estimated.

A. The Basic Data: Actual and Estimated

Table 2 presents data for the electric utilities regarding operating revenues, net income, Federal income tax, selected financial characteristics, and accelerated depreciation from 1954 to 1976. A comparison of columns 1, 2, and 3 of the table reveals the impact of accelerated depreciation, the investment tax credit, and other lesser tax benefits (such as the deductability of construction period interest and taxes and the Asset Depreciation Range) on the tax payments of the utilities. From 1954 to 1976 total operating revenues of the utilities increased approximately 664 percent, and net income increased nearly 400 percent; while at the same time Federal income tax payments by the utilities **decreased** by 31 percent. In 1954 Federal income taxes claimed 12.1 percent of electric utility operating revenues and 45 percent of net income. By 1976 Federal income taxes claimed only 1.1 percent of operating revenues and 6.1 percent of net income. The fact that income taxes have declined relative to operating revenues and net income should be no surprise; accelerated depreciation and the investment tax credit were intended to reduce the tax liabilities of capital intensive industries, and the electric utility industry is by far the most capital intensive in the economy. Nonetheless, the magnitude of the decline of income tax payments by the electric utilities is startling.

Columns 4, 5, and 6 reveal a gradual increase in overall rates of return earned and interest rates paid by the utilities over the past 16 years. They also disclose that the higher overall rates of return in the 1970's are due to higher interest costs rather than higher profit rates; rates of return on common equity during the 1970's have been lower than during the 1960's.

Columns 8, 9, and 10 of Table 2 report data on income tax deferrals. The deferred taxes result largely from accelerated depreciation, but a portion of the deferred taxes results from accelerated amortization, through the now expired emergency provisions of section 168, guideline lives, and the Asset Depreciation Range. Accelerated amortization is subject to the same ratemaking treatments (see Table 1) and has a similar effect on the utility as accelerated depreciation; therefore, the analysis in this section combines the two. The slow-down in the accumulation of deferred income taxes in the early 1960's reflects the decline in the rate of growth of electric utilities during this period and the maturation of the impact of accelerated depreciation on the utilities' tax payments

(i.e., even for a constant plant growth rate, deferred taxes from accelerated depreciation will grow rapidly at first, slowing down near half of the utility plant life cycle). The rapid growth in deferred taxes during the late 1960's and the 1970's results from the acceleration in the value of new construction, partly owing to the sizable inflation in construction costs, during the past decade.

TABLE 2

OPERATING REVENUES, NET INCOME, FEDERAL INCOME TAX, FINANCIAL DATA, AND DATA PERTAINING TO ACCELERATED DEPRECIATION FOR CLASS A AND B ELECTRIC UTILITIES, 1954—1976
(Millions of Dollars)

Year	Total Utility Operating Revenues (1)	Net Income before Taxes[1] (2)	Federal Income Tax (3)	Average Overall Rate of Return (4)	Average Rate of Return on Common Equity (5)	Average Interest Rate on Long-Term Debt (6)	Long-Term Debt as Fraction of Capitalization (7)	Provision for Deferred Income Taxes (8)	Income taxes Deferred in prior Years (9)	Accumulated Deferred Income Taxes (10)
1954	$ 7,587.6	$ 2,049.1	$ 915.0	NA	NA	.032	.507	---	---	$ 132.7
1955	8,360.4	2,308.1	1,064.0	NA	NA	.031	.511	[2]	---	261.1
1956	9,053.7	2,474.9	958.0	NA	NA	.031	.511	$ 184.7	---	482.8
1957	9,670.4	2,576.0	956.5	NA	NA	.033	.524	207.0	---	694.4
1958	10,194.8	2,710.6	969.6	NA	NA	.034	.528	227.7	$ 5.5	919.7
1959	11,129.0	2,988.1	1,118.8	NA	NA	.035	.528	227.7	14.2	1,157.7
1960	11,919.5	3,193.6	1,218.4	NA	NA	.036	.528	214.8	22.7	1,325.2
1961	12,604.1	3,343.5	1,305.7	.070	NA	.036	.528	191.9	28.9	1,495.9
1962	13,468.5	3,596.7	1,361.8	.071	NA	.037	.524	177.0	34.2	1,626.3
1963	14,180.1	3,754.2	1,412.1	.072	.117	.037	.521	152.8	41.0	1,737.3
1964	14,990.9	4,004.9	1,485.9	.073	.122	.037	.518	112.6	47.8	1,779.7
1965	15,820.1	4,180.7	1,488.7	.074	.125	.038	.515	100.9	50.0	1,828.6
1966	16,959.0	4,410.3	1,551.9	.074	.127	.039	.523	101.3	52.3	1,872.2
1967	17,935.3	4,552.0	1,510.6	.074	.127	.040	.530	111.5	55.9	1,929.1
1968	19,405.2	4,806.7	1,655.1	.073	.123	.043	.538	133.9	59.0	1,990.9
1969	21,085.5	4,941.5	1,584.5	.073	.122	.046	.546	156.0	62.0	2,087.5
1970	23,127.9	4,775.3	1,233.0	.073	.118	.051	.548	174.5	64.5	2,198.1
1971	26,027.2	5,189.0	1,051.4	.074	.114	.055	.542	264.9	68.8	2,424.3
1972	29,482.2	5,921.7	974.3	.076	.117	.057	.531	418.3	75.0	2,793.5
1973	33,313.9	6,582.0	884.1	.076	.115	.059	.523	598.0	97.3	3,347.1
1974	42,174.6	6,843.7	554.0	.076	.106	.063	.530	1,029.4	201.0	4,209.4
1975	50,744.1	8,580.2	810.1	.082	.111	.068	.523	1,299.5	293.7	5,367.8
1976	57,970.3	10,231.8	628.7	.086	.115	.070	.514	1,685.1	466.3	6,813.1

NA - Not Available.

[1] Estimated by adding net income after taxes, plus Federal income tax, plus provision for deferred income taxes, minus income taxes deferred in prior years, plus net investment tax credit adjustment. Ignores certain other minor adjustments.

[2] Included with "Federal income tax," column 3.

SOURCES: Federal Power Commission, Statistics of Privately Owned Electric Utilities, volumes for years 1964—1975, and U.S. Department of Energy, Statistics of Privately Owned Electric Utilities in the United States, 1976.
Data in column 5 from Standard & Poor's, Industry Surveys, Utilities-Electric, Basic Analysis, July 26, 1973, and February 23, 1978.

Table 3 displays estimated investment tax credit data for the electric utilities from 1962 to 1976. These data must be estimated because the actual data published by the FERC have significant inconsistencies and are not precisely the data required for consistent analysis. Each year the FERC publishes ITC data for the most recent two years and a cumulation of data from 1962 to the third most recent year. For several reasons some companies occasionally submit reports revising ITC data for previous years. These revisions are made by the FERC to their data base, but, except for revisions for the immediately preceding year, the revisions are not identified by year. The revisions merely affect the totals in the cumulative data for 1962 to the third most recent year for any of the annual data publications. Revised ITC data for each year back to 1962 are not available, thus making it impossible to obtain accurate historical ITC data on an annual basis. The procedure used to estimate the data in columns 1 through 7 of Table 3 was to aggregate the tax credits by type of treatment for the prior year (which is shown separately) in each annual data publication. This captures any data revisions which occur during the first year after original publication of the data but not those which occur later.

Additionally, the detailed ITC data published by FERC reflect only tax credits resulting from the electric utility portion of each company's business, rather than total ITC's for the companies, which would include ITC's related to gas utility operations and other operations. To obtain data consistent with those in Table 2, which refer to the total operations of the Class A and B electric utilities, the FERC data were "grossed up" to estimates of total utility ITC's using the ratio of the investment tax credit adjustment for the total utility operations to the ITC adjustment for electric utility operations. This ratio was derived from the composite income statement for the utilities each year. The gross up procedure required adjustments in the data ranging from 2 percent to 13 percent and averaging about 7 percent over the 15-year time period.

The estimated ITC data clearly show the impact of the repeal of the credit during 1969—1970, since the credit decreases somewhat in 1969 and by about one-third in 1970. The amount of investment tax credits generated increases substantially during the 1970's due to higher investments in new construction and the larger ITC, 4 percent beginning in 1971 and 10 percent in 1975. The effect of the statutory trend toward normalization treatment is obvious in column 3. In the early years of the investment credit, over 35 percent of the total amount of credits earned by electric utilities received flow through regulatory treatment. This percentage began declining in the late 1960's and by 1971 reached 20 percent. Apparently, the debate surrounding normalization versus flow through of accelerated depreciation and the rules adopted in the Tax Reform Act of 1969, also affected regulatory action regarding ITC's. The statutory requirements regarding treatment of ITC's were not adopted until 1971, but the decline in flow through treatment occurred during 1969—1971. A second substantial decline in the percent of ITC's receiving flow through treatment occurred in 1975—1976, apparently as a result of the new options for choosing regulatory treatment associated with the higher credit in the Tax Reduction Act of 1975. The FERC reports show 32 electric utilities flowing through ITC's in 1974 and only 26 doing so in 1976.[1]

During the 1960's, the difference between tax credits generated and credits utilized was minor, with only a few companies unable to use a relatively small amount of credits (columns 8 and 9).[2] However, in the 1970's the amount of investment tax credit which companies are unable to fully utilize has grown until in 1976 the utilities had a backlog of unused tax credits amounting to over half a billion dollars. Presumably, none of the utilities with excess credits in 1975 or 1976 paid any Federal income taxes those years since the Tax Reduction Act of 1975 allowed public utilities to offset 100 percent of their tax liability with ITC's in 1975 and 1976.[3]

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[1] There may be some miscounting in the FERC data on regulatory treatment; the report shows only two utilities in 1976 with a portion of their ITC flowed through and a portion normalized. However, apparently several flow through utilities chose to normalize the 6 percent ITC increase under the Tax Reduction Act of 1975. See, 1977 Survey of Financial Reporting and Accounting Developments in the Public Utility Industry, Price Waterhouse and Co., 1977. P. 25.

[2] The data in column 9 were "grossed up" by the same procedure previously described for columns 1 through 7. The data were estimated from the reported ITC's generated versus ITC's utilized each year, rather than using the FERC data on unused ITC's, because of inconsistencies in the latter series.

[3] The reported decrease in number of companies with unused ITC's in 1976 must be viewed with skepticism in light of the apparent increase in the amount of unused credits. The unused credit data in the 1976 report exhibit substantial inconsistencies with the 1975 report regarding both the aggregate amount of unused credits and the status of individual utilities.

TABLE 3

ESTIMATED INVESTMENT TAX CREDIT DATA FOR CLASS A AND B ELECTRIC UTILITIES, 1962—1976
(Millions of Dollars)

Year	INVESTMENT TAX CREDITS UTILIZED				INVESTMENT TAX CREDITS GENERATED			UNUSED INVESTMENT TAX CREDITS		Normalized	Investment Tax Credit	Accumulated Deferred Investment Tax Credits
	Total	Flow Through		Normalized	Total	Flow Through	Normalized	No. of Companies	Cumulated Amount	Investment Tax Credit	Adjustment	
	(1)	Amount (2)	Percent (3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1962	$ 65.1	$ 24.2	35.6%	$ 40.9	$ 63.6	$ 23.0	$ 40.6	NA	$ 1.6	$ 1.4	$ 38.6	$ 38.6
1963	96.9	38.1	38.1	58.8	93.2	36.4	56.8	NA	5.3	3.2	51.9	90.5
1964	106.4	41.1	38.3	65.3	105.0	40.6	64.4	8	7.4	5.4	60.8	147.1
1965	122.8	47.3	38.5	75.5	121.0	46.2	74.8	3	– 2.8	7.9	60.4	208.9
1966	115.8	40.0	34.5	75.8	117.2	39.6	77.6	6	7.2	10.5	60.3	267.7
1967	148.0	49.5	33.5	98.5	145.6	51.3	94.3	5	12.6	13.6	77.5	348.7
1968	178.8	61.3	34.3	117.5	171.2	58.4	112.9	4	21.5	17.4	81.2	429.6
1969	164.1	51.3	31.3	112.8	163.0	54.4	108.6	5	12.8	21.0	67.0	496.3
1970	106.9	25.6	23.9	81.3	105.8	30.4	75.4	7	12.8	23.5	24.8	522.9
1971	189.0	37.2	19.7	151.8	173.3	34.8	138.5	12	17.1	28.1	89.5	613.3
1972	329.7	74.3	22.1	255.4	276.9	51.2	225.7	17	69.8	35.6	184.6	796.3
1973	413.0	80.3	19.4	332.7	274.1	37.9	236.2	35	172.8	43.5	211.4	1,004.9
1974	470.4	87.1	18.0	383.3	214.2	31.1	183.1	53	370.0	49.6	163.8	1,160.8
1975	800.1	120.0	15.0	680.2	719.0	71.4	647.6	76	463.8	71.2	566.0	1,732.8
1976	1,302.8	134.9	10.3	1,168.0	1,196.6	108.9	1,087.7	40	564.3	107.5	1,190.1	2,831.4

NA - Not Available.

SOURCES: Author's estimates (except for column 8 and columns 11 and 12 for 1964 to 1976, which are actual data) as explained in text based on data in: Federal Power Commission, Statistics of Privately Owned Electric Utilities, volumes for years 1964—1975, and U.S. Department of Energy, Statistics of Privately Owned Electric Utilities in the United States, 1976.

The data in column 10, the amount of the normalized investment tax credit, I^n, were estimated using the data in column 7 and assuming a 30-year asset life. I^n must be estimated because the amount of the normalized ITC is not reported by the FERC. The accelerated depreciation data report for each year both the provision for deferred taxes and the credit for taxes deferred in prior years; for the ITC, however, only the net ITC adjustment is reported. Conceptually, it should be possible to derive I^n from the published data, specifically columns 7 and 11 of Table 3. However, a quick review discloses that no reasonable series of estimates for I^n could be consistent with these data (e.g., I^n must be constantly increasing over this time period). These inconsistencies are further evidence of the problems with the FERC investment tax credit data and serve as reminders of the necessary caution in their interpretation.[1]

The data in columns 11 and 12 are from the FERC composite balance sheet information for the electric utilities for each year. These figures once again reveal the impact of the slower investment growth in the early 1960's, the temporary repeal of the ITC during 1969—1970, and the sharp increase in the rate of the ITC applicable to utilities in 1975.

B. Accelerated Depreciation Impact Estimates

The data in Tables 2 and 3 have been combined with the relationships in section IV to produce estimates of the economic effects of the alternative regulatory treatments of accelerated depreciation and the investment tax credit in the electric utility industry.[2] Table 4 shows the results of such calculations regarding accelerated depreciation, and these results are graphed in Figures 1 through 5.[3] The estimates are based on the average value of the deferred tax account each year; the data in Tables 2 and 3 are for December 31 balances in these accounts. Additionally, the estimates incorporate the several changes in the corporate tax rate which occurred during this era.[4]

Columns 1 through 9 of Table 4 refer to utilities which normalize accelerated depreciation. For these utilities the full range of potential economic impacts of the alternative regulatory treatments can be estimated because of the availability of data regarding deferred taxes. The symbols in Table 4 are the same as used in section IV. Thus, column 1 provides estimates of $R_1 - R_2$, the difference between required revenues under the base case, which assumes no accelerated depreciation or investment tax credit, and under case 2, which assumes use of accelerated depreciation in computing taxes and flow through regulatory treatment. In other words, the figures in column 1 are estimates in response to the following question: Had the utilities which normalize accelerated depreciation instead been subject to flow through regulatory treatment, what would have been the impact on utility revenues compared to the base case (i.e., no accelerated depreciation)? Since under flow through treatment the impact on required revenues of the utility is the same as the impact on tax payments, column 1 also provides estimates of the decline in tax payments which would have resulted (compared to the base case) had these utilities flowed through the benefits of accelerated depreciation. Thus, the estimates imply that in 1976, if the normalization utilities had been subject to flow through regulatory treatment, their revenues and tax payments would have been $2.34 billion less than the base case. Figures 1 and 2 visually reveal the extent to which these magnitudes have increased during the 1970's.

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[1] An alternative estimation procedure would have been to estimate both I^a and I^n based on the data in column 11 and an assumed 30-year asset life. However, this procedure would have required essentially rejecting all of the FERC data on the ITC and fabricating a new data set based only on the information in column 11. In some years this procedure would also involve sizable differences (approximately 10 percent) from the FERC data. This appeared to be a less appropriate methodology. This alternative estimation procedure would have produced estimates of a somewhat different magnitude but the general pattern of the results would not change.

[2] All of the estimates, of course, implicitly incorporate the assumptions underlying the mathematical relationships (see section IV). They also involve averaging error since the estimates are based on aggregate industry data.

[3] The figures plot the nominal deviations from the base case amounts of required revenues, income taxes, cash flow, and book profits under the alternative regulatory treatments each year. The horizontal line in each graph represents the base case amount, or zero deviation.

[4] The corporate income tax rates used in the calculations were the following: 1954—1963, .52; 1964, .50; 1965—1967, .48; 1968—1969, .528; 1970, .492' 1971—1976, .48.

TABLE 4

ESTIMATES OF IMPACT ON REQUIRED REVENUES, FEDERAL INCOME TAXES, CASH FLOW, AND PROFITS FOR CLASS A AND B ELECTRIC UTILITIES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF ACCELERATED DEPRECIATION, 1954—1976
(Millions of Dollars)

	Normalization Utilities									Flow Through Utilities
						$F_1 - F_2 = 0$		$P_1 - P_2 = 0$		$F_1 - F_2 = 0$ $P_1 - P_2 = 0$
	$R_1 - R_2$									$R_1 - R_2$
Year	$T_1 - T_2$ (1)	$R_1 - R_3$ (2)	$R_1 - R_4$ (3)	$T_1 - T_3$ (4)	$T_1 - T_4$ (5)	$F_1 - F_3$ (6)	$F_1 - F_4$ (7)	$P_1 - P_3$ (8)	$P_1 - P_4$ (9)	$T_1 - T_2$ (10)
1954	NA	$ 8.5	-$ 1.2	NA	NA	NA	NA	$ 3.6	-$ 1.1	NA
1955	NA	25.3	- 3.4	NA	NA	NA	NA	10.7	- 3.1	NA
1956	$ 384.8	47.9	- 6.4	$ 206.5	$ 178.3	-$164.6	-$ 190.6	20.1	- 5.9	$212.7
1957	431.3	74.8	- 11.0	240.6	196.0	- 176.0	- 217.2	31.0	- 10.2	238.4
1958	462.9	102.0	- 15.7	267.7	206.5	- 180.2	- 236.7	42.0	- 14.5	255.9
1959	444.8	130.7	- 20.8	271.5	192.7	- 160.0	- 232.7	53.5	- 19.2	245.9
1960	400.2	155.5	- 25.6	260.7	166.5	- 128.8	- 215.7	63.3	- 23.6	221.2
1961	339.6	176.6	- 29.1	240.9	133.9	- 91.1	- 189.8	71.9	- 26.8	187.7
1962	297.5	198.1	- 32.8	230.1	110.0	- 62.2	- 173.1	80.6	- 30.3	164.4
1963	232.9	217.1	- 35.1	208.9	76.7	- 23.1	- 144.2	88.7	- 32.4	143.3
1964	129.6	223.0	- 33.7	159.5	31.1	29.9	- 98.5	94.7	- 33.7	80.5
1965	97.9	224.2	- 32.6	141.6	18.3	47.3	- 86.2	98.2	- 35.3	61.3
1966	94.2	228.5	- 34.8	140.6	14.2	50.2	- 86.7	99.2	- 37.7	49.6
1967	106.9	233.3	- 37.2	148.2	18.4	44.8	- 95.9	100.4	- 40.3	53.9
1968	158.6	252.4	- 50.7	184.2	24.2	22.8	- 120.2	97.7	- 45.3	82.8
1969	199.2	258.1	- 57.3	203.2	36.7	3.6	- 145.2	97.6	- 51.2	90.8
1970	216.5	249.9	- 58.0	203.5	52.0	- 13.5	- 169.9	96.5	- 59.9	68.0
1971	377.1	265.3	- 63.6	290.4	132.5	- 94.0	- 265.0	102.1	- 68.9	92.5
1972	660.2	308.4	- 72.9	453.4	270.4	- 224.0	- 422.3	119.3	- 79.0	187.3
1973	962.9	361.3	- 87.4	628.6	413.2	- 362.1	- 595.4	138.6	- 94.7	231.8
1974	1,593.1	435.7	- 116.5	977.0	711.9	- 667.4	- 954.6	161.0	- 126.2	349.7
1975	1,934.2	597.9	- 157.2	1,141.1	778.6	- 713.4	- 1,105.7	222.4	- 170.3	424.6
1976	2,343.8	805.0	- 202.3	1,500.0	1,016.5	- 914.2	- 1,438.0	304.6	- 219.1	514.5

NA - Not Available.

SOURCE: Author's estimates based on data in Table 2 and equations in section IV, B.

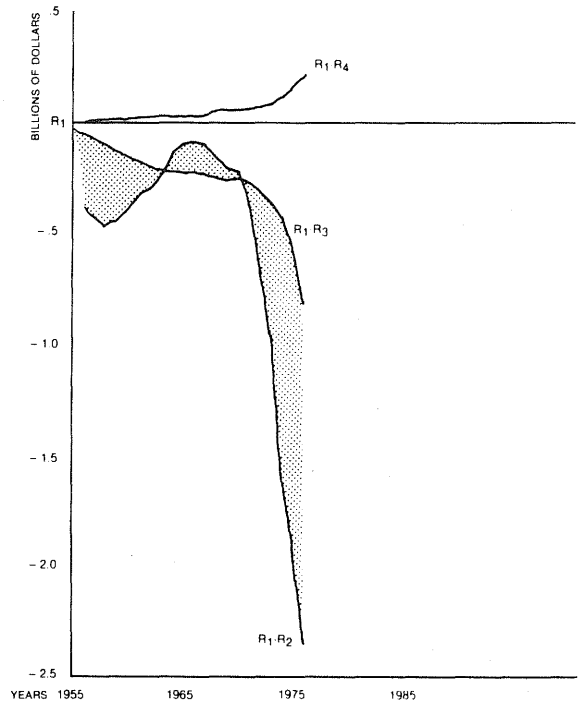

FIGURE 1

COMPARISON OF REQUIRED REVENUES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF ACCELERATED DEPRECIATION.

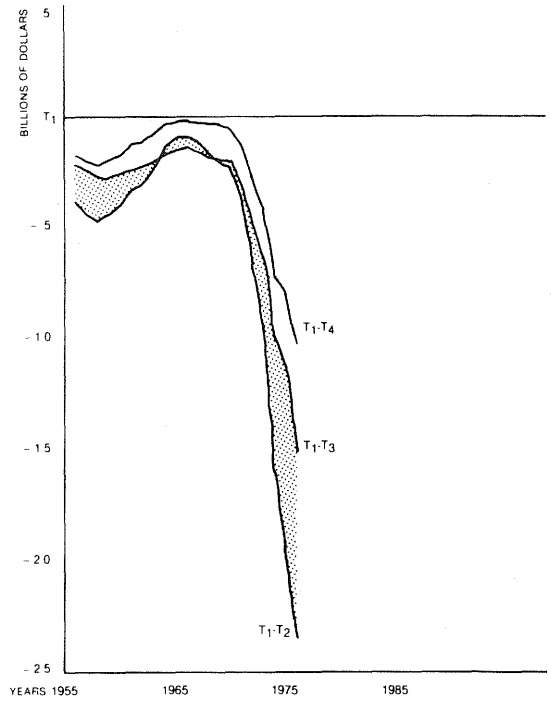

FIGURE 2

COMPARISON OF FEDERAL INCOME TAXES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF ACCELERATED DEPRECIATION.

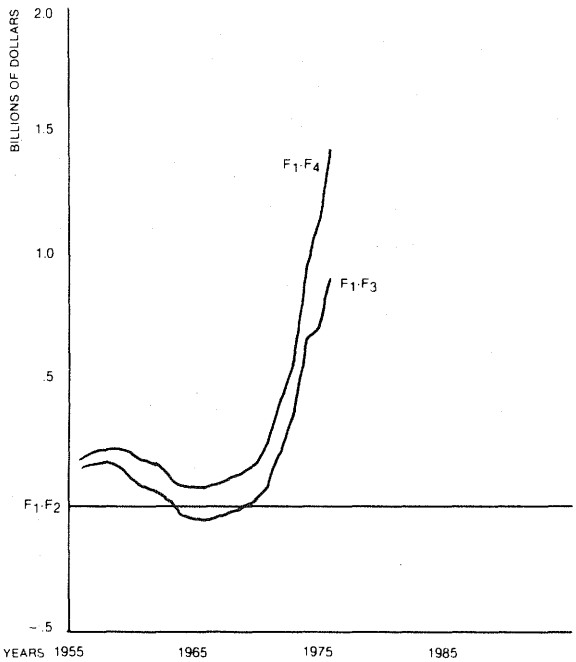

FIGURE 3

COMPARISON OF CASH FLOW UNDER ALTERNATIVE RATEMAKING TREATMENTS OF ACCELERATED DEPRECIATION.

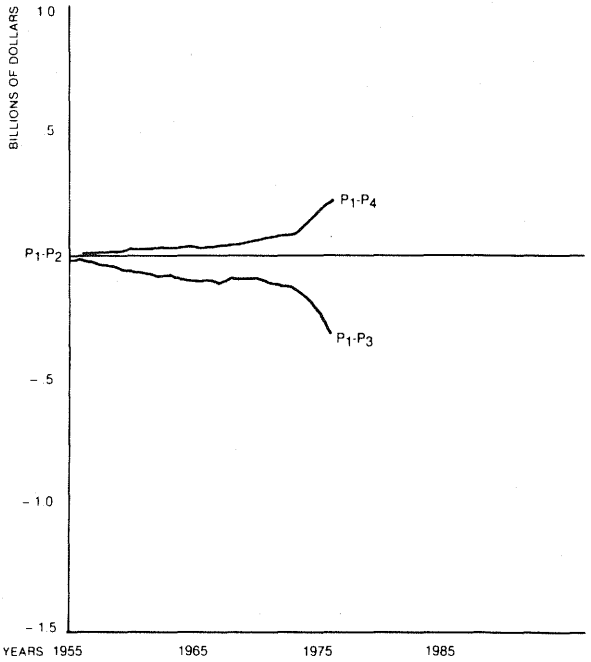

FIGURE 4

COMPARISON OF BOOK PROFITS UNDER ALTERNATIVE RATEMAKING TREATMENTS OF ACCELERATED DEPRECIATION.

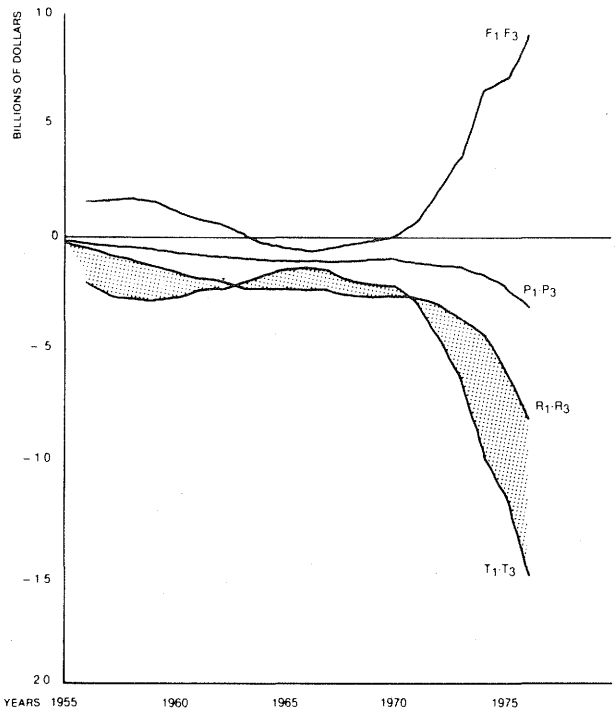

FIGURE 5

COMPARISON OF REQUIRED REVENUES, FEDERAL INCOME TAXES, CASH FLOW, AND BOOK PROFITS UNDER NORMALIZATION OF ACCELERATED DEPRECIATION WITH THE DEFERRED TAX ACCOUNT EXCLUDED FROM THE RATE BASE.

The estimates in column 2 compare revenues under case 3, normalization with the deferred tax account excluded from the rate base, with case 1. The estimates indicate that in 1976 under this normalization treatment, which is in fact the treatment applied to the vast majority of the normalization utilities (see Table 1), utility revenues were approximately $805 million less than they would have been under the base case. This estimate, combined with the one from column 1, implies that in 1976, had the electric utilities which normalize accelerated depreciation instead been required to flow through the tax benefits, their collective utility rates would have been approximately $1.54 billion, or about 3.2 percent, lower than they actually were. Column 3 shows estimates for the change in utility revenues from the base case if the normalization utilities would have all been accorded normalization treatment without excluding the deferred tax account from the rate base. Under this treatment utility rates would have been about $202 million **higher** than if no accelerated depreciation were allowed. If fully applied, therefore, this normalization treatment would have yielded utility revenues over $1.0 billion higher than the alternative normalization treatment in 1976.

The interpretation of the estimates in columns 4 through 9 of Table 4, regarding tax payments, cash flow, and profits, is similar to that above, except that cash flow and profits under the flow through case are always equal to the amounts under the base case (i.e., $F_1 - F_2 = 0$; $P_1 - P_2 = 0$).

Column 10 of Table 4 shows estimates of the reduction in revenue and tax payments resulting from accelerated depreciation in the utilities which use flow through treatment. These estimates cannot be derived from the data in Table 2. They were produced by assuming that the portion of total accelerated depreciation which is normalized each year is the same as the portion of investment tax credits which receive normalization treatment, except that the 18 percent figure in 1974 is assumed to remain constant in 1975 and 1976 (Table 3, column 3).[1] This procedure should yield conservative estimates of the impact of flow through of accelerated depreciation since normalization of the ITC has been more widespread than normalization of accelerated depreciation (Table 1). These estimates indicate that in 1976 the rates and tax payments of the flow through utilities were about $515 million lower than otherwise due to accelerated depreciation.

[1] There is no reason to assume that the reduction in flow through treatment of the ITC which resulted from the Tax Reduction Act of 1975 also affected the treatment of accelerated depreciation.

Combining the estimates in columns 2, 4, and 10 yields the approximations that accelerated depreciation reduced the aggregate rates of electric utilities by about $1.3 billion in 1976 and decreased their tax payments by about $2.0 billion. Thus, in 1976 in the absence of accelerated depreciation total electric utility revenue requirements would have been about 2.2 percent higher and total Federal income tax payments by these utilities would have been approximately 221 percent higher.

Figures 1 through 4 show respectively utility revenues, tax payments, cash flow, and book profits which would have been experienced by normalization utilities under the alternative regulatory treatments compared to the levels of these variables which would have occurred under the base case with no accelerated depreciation. The graphs clearly show that case 4, normalization with the deferred tax account not excluded from the rate base, is the worst regulatory treatment from the point of view of consumers because it yields the highest utility rates (in fact, higher than if there were no accelerated depreciation) and is the most favorable treatment from the perspective of the utility companies, yielding the highest cash flow and profit (remembering that the data refer to total profit; profit per share increases even more, as explained in section IV). The relationships between case 3 normalization and flow through treatment are complicated and are treated under two special topics.

C. Two Special Applications

1) The phantom tax issue

To illustrate the application of the derived results to specific issues, two special topics are analyzed here. The first is the so-called phantom tax issue. As stated by its proponents this argument merely calls attention to the fact that, under normalization treatment, the amount of taxes taken into account for ratemaking purposes exceeds the actual amount of taxes paid by the utility. The tax charge in excess of actual tax payments is referred to as a tax overcharge or "phantom tax."[1]

Thus, with regard to the year 1976, the phantom tax lobby would observe that Federal taxes paid by the utilities equalled $629 million whereas the total charge for Federal taxes in the ratemaking procedure amounted to $3.04 billion[2] and would draw the conclusion that utility customers had been overcharged, or paid phantom taxes, in the amount of $2.41 billion. Focusing the phantom tax analysis just on the effects of accelerated depreciation for purposes of illustration, the argument would maintain that customers were overcharged by $1.2 billion in 1976 due to normalization of accelerated depreciation since this was the net amount of the provision for deferred income taxes.

This argument requires further examination, however. While the comparison of taxes charged for ratemaking to taxes actually paid is correct, the implication that the difference represents an overcharge ignores the impact on utility rates of excluding deferred taxes from the rate base.[3] For example, assuming for the moment that accelerated depreciation is normalized only by the procedure which excludes the deferred tax account from the rate base (case 3), in 1976 the normalization of accelerated depreciation **did** result in tax charges for ratemaking which were $1.2 billion more than actual taxes paid; however, this ratemaking procedure, combined with accelerated depreciation, also reduced taxes by $1.5 billion (column 4) and reduced utility rates by $0.80 billion (column 2). Thus, the "overcharge" in 1976 resulting from normalization of accelerated depreciation does not amount to $1.2 billion, but rather $0.70 billion—the amount by which the reduction in taxes exceeds the reduction in rates (i.e., $1.50 billion minus $0.80 billion). These reductions occurred because of the direct impact of accelerated depreciation in reducing taxes, because of the effect of the exclusion of the deferred tax account from the rate base in reducing utility rates, and because of the simultaneity in the determination of utility rates and tax payments.

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[1] See, for example: Environmental Action Foundation, Phantom Taxes in Your Electric Bill, December 1976, especially pp. 3-7.

[2] The amount of Federal taxes paid plus the net provision for deferred income taxes, plus the net investment tax credit adjustment.

[3] This impact is sometimes acknowledged but is usually treated as a minor point in the phantom tax literature. See Environmental Action Foundation, op. cit. P. 9.

This relationship between tax reductions and rate reductions which flow from normalization changes with time, as shown in columns 2 and 4 of Table 4 and in Figure 5. The shaded area in Figure 5 shows the difference between the reduction in taxes, T_3, and the reduction in utility rates, R_3, resulting from normalization of accelerated depreciation from 1954 to 1976. Note that from 1963 through 1970 the reduction in utility rates actually exceeded the reduction in tax payments.[1] This was during the period of slower growth of electric utilities, and during a slow-growth period the impact on utility rates of excluding deferred taxes from the rate base can be greater than the direct impact of normalization (see section IV, B, 2).

For example, in 1966 the net provision for deferred income taxes was $49 million; the phantom tax theory would refer to this amount as a tax "overcharge" in ratemaking or as a "phantom tax." In fact, however, the tax payments of normalization utilities were $141 million lower than otherwise due to accelerated depreciation (column 4), and the utility rates were $229 million lower. In 1966, therefore, based solely on a consideration of tax payments and utility rates that year (which is the basis of the phantom tax argument), utility customers were **undercharged,** or received **phantom tax benefits,** amounting to $88 million.

Another possible way to view the phantom tax argument is to compare utility rates under normalization to those which would exist under flow through treatment. The phantom tax advocates favor flow through treatment to normalization because it avoids the tax "overcharge" and thereby should yield lower utility rates. However, this argument, too, is oversimplified. It was shown in section IV, B, 2 (equations 3m to 3q) that the relationship between flow through and normalization (with the deferred tax account excluded from the rate base) is uncertain and depends on the size of the deferred tax account compared to the excess of accelerated depreciation over straight line for the particular year. The applied significance of this relationship is shown in Figure 1 and in the comparison of columns 1 and 2 in Table 4. The shaded area in Figure 1 shows the difference each year in utility rates under normalization treatment R_3, and flow through treatment, R_2, of accelerated depreciation. In 1976 the tax "overcharge," according to the phantom tax theory, was $1.2 billion; however, had the normalization utilities been required instead to flow through the tax benefits of accelerated depreciation, the utility rates of these companies would have been $1.54 billion lower. On the other hand, in 1966 when the tax "overcharge" resulting from normalization was $49 million, the utility rates would have been $134 million **higher** under flow through treatment. This latter relationship is, once again, due to the slower growth rates of electric utilities during the 1960's. During such a period the effect of excluding the deferred tax account from the rate base under normalization yields lower utility rates than would be produced by flow through treatment.

Obviously, the relationships between utility rates and tax payments under the alternative regulatory treatments of accelerated depreciation are complex. The phantom tax argument draws attention to an important issue, but it is oversimplified to the extent of being misleading and fallacious. To fully understand the impact of the alternative regulatory treatments on utility rates requires attention to the impact of the various treatments on the entire ratemaking formula, not merely to the direct impact of normalization on the amount of taxes charged. With this wider focus, the relationships between tax benefits and utility rates, and between normalization and flow through regulatory treatments, can be in either direction, depending on a number of variables, an important one of which is the growth rate of the utilities. Further analysis of these complex relationships is presented in sections VI and VIII.

2) The rationale of the 1969 restrictions on the regulatory treatment of accelerated depreciation

The Tax Reform Act of 1969 enacted what amounted to a "freeze" on any further movement by Public Utility Commissions toward flow through treatment of accelerated depreciation and thereby statutorily embodied a preference for normalization treatment (see section II, E). The reasons for this policy were stated in the report of the Ways and Means Committee as follows:

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[1] As a result of this relationship, during this time period the impact of normalization on cash flow of the utilities was negative; see Table 4, column 6, and Figure 3, F_3.

In general, flowing through the tax deferral to the customers of a utility that is already earning its maximum permissible profit on its investment, results in doubling of the Government's loss of revenue from the use of accelerated methods of depreciation for tax purposes. This is because the current tax reduction reduces the rates charged to customers, which in turn reduces the utility's taxable income and therefore reduces its income tax. This second level of tax reduction is passed on to the utility's customers, with the same effect.

Assuming no other factors become involved, the total loss of taxes may be computed as the initial loss divided by the excess of 100 over the utility's marginal tax rate. At the present surcharge rates, the total tax loss is 212 percent of the initial loss; without the surcharge, the total loss is 192 percent of the initial loss.

Your committee has been advised that, if those trends were to continue, there could very shortly be a revenue loss of approximately $1.5 billion; some estimates indicate that the loss might be considerably closer to $2 billion per year. Your committee has determined that the likely revenue loss from wholesale shifts to accelerated depreciation and flow through is unacceptable at this time.[1]

The statement that "flowing through the tax deferral to the customers of a utility . . . results in a doubling of the Government's loss of revenue from the use of accelerated methods of depreciation for tax purposes" and the statements in the remainder of the first paragraph above obviously refer to the comparison of flow through treatment to a situation in which accelerated depreciation is not allowed (see equation 2h, section IV). However, the relevant consideration was the tax loss under flow through treatment versus the tax loss under normalization treatment since this was the policy choice being exercised. Equation 3o in section IV makes clear that flow through treatment will "double the Government's loss of tax revenue" compared to the most prevalent form of normalization only if the deferred tax account is equal to zero. If this is not the case, as the analysis in section IV, B, 2 indicates, the relationship between flow through and normalization of accelerated depreciation depends on the magnitude of the deferred tax account compared to the excess of accelerated depreciation over straight line depreciation. Depending on this relationship, flow through can produce lower tax payments by the utilities to the Government or higher tax payments than normalization.

The second paragraph quoted above from the Ways and Means Committee report provides revenue loss estimates for the continuation of the trend toward flow through treatment of accelerated depreciation. Again, these loss estimates are apparently in comparison to a situation with no accelerated depreciation, rather than a comparison of revenue loss under flow through versus revenue loss under normalization. Estimates for the latter comparison for electric utilities are provided in Table 4, columns 1 and 4, and are graphed in Figure 2. The shaded area in Figure 2 shows the difference between the tax revenue loss under flow through treatment of accelerated depreciation, T_2, and the revenue loss under normalization with the deferred tax account excluded from the rate base, T_3. These results indicate that from 1964 to 1970 normalization of accelerated depreciation by the electric utilities yielded lower tax payments than flow through treatment would have. This occurred because, during these years, the total amount of accumulated deferred income taxes excluded from the utility rate base was very large compared to the excess of accelerated depreciation over straight line depreciation charges each year. Thus, ironically, it appears that the 1969 restrictions on use of flow through treatment of accelerated depreciation, which were adopted to avoid the alleged higher revenue loss under flow through, were in fact enacted during an era when, at least in the electric utility industry, flow through treatment entailed a smaller revenue loss than normalization. Of course, with the increased inflation and construction in the 1970's these conditions quickly reversed, and flow through treatment by these utilities presently would result in considerable additional Treasury revenue loss.

D. Investment Tax Credit Impact Estimates

Table 5 displays estimates of the economic impacts of the alternative regulatory treatments of the investment tax credit. The estimates are based on the relationships exhibited in section IV, C and the data in Tables 2 and 3. The format of Table 5 is similar to that of Table 4; thus, columns 1 through 9 refer to electric utilities which normalize the investment tax credit, column 10 refers to flow through utilities, and the symbols are the same as used in section IV. The results in Table 5 are graphed in Figures 6 through 9.

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[1] Tax Reform Act of 1969, Report of the Committee on Ways and Means to accompany H.R. 13270, 91st Congress, 1st Session, August 2, 1969. Pp. 132—133.

TABLE 5

ESTIMATES OF IMPACT ON REQUIRED REVENUES, FEDERAL INCOME TAXES, CASH FLOW, AND PROFITS FOR CLASS A AND B ELECTRIC UTILITIES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF THE INVESTMENT TAX CREDIT, 1962—1976
(Millions of Dollars)

	Normalization Utilities									Flow Through Utilities
						$F_1 - F_5 = 0$		$P_1 - P_5 = 0$		$F_1 - F_5 = 0$ $P_1 - P_5 = 0$
Year	$\frac{R_1 - R_5}{T_1 - T_5}$ (1)	$R_1 - R_6$ (2)	$R_1 - R_7$ (3)	$T_1 - T_6$ (4)	$T_1 - T_7$ (5)	$F_1 - F_6$ (6)	$F_1 - F_7$ (7)	$P_1 - P_6$ (8)	$P_1 - P_7$ (9)	$\frac{R_1 - R_5}{T_1 - T_5}$ (10)
1962	$ 84.6	$ 2.4	$ 0.7	$ 41.7	$ 40.8	−$ 39.6	−$ 40.4	$ 1.0	−$ 1.2	$ 47.9
1963	118.3	8.3	− 0.7	60.5	55.8	− 53.4	− 57.8	3.4	− 4.2	75.8
1964	128.8	15.1	− 3.1	70.8	61.7	− 58.0	− 67.1	6.4	− 8.1	81.2
1965	143.8	22.1	− 5.5	83.7	70.5	− 65.1	− 79.5	9.7	− 12.6	88.8
1966	149.2	29.4	− 8.6	89.4	71.1	− 64.8	− 84.6	12.8	− 17.5	76.2
1967	181.3	37.8	− 11.3	109.3	85.7	− 78.0	− 103.6	16.3	− 22.9	98.7
1968	239.2	50.1	− 14.4	134.6	100.5	− 93.5	− 124.0	19.4	− 28.5	123.7
1969	230.0	58.6	− 16.6	133.4	93.7	− 86.4	− 121.9	22.2	− 34.3	115.2
1970	148.4	59.4	− 12.7	97.6	62.2	− 52.4	− 89.1	23.0	− 37.2	59.9
1971	266.3	65.2	− 5.3	161.7	127.8	− 113.4	− 150.1	25.1	− 39.7	66.2
1972	434.0	83.3	− 6.8	255.5	212.2	− 193.5	− 240.3	32.2	− 50.2	98.5
1973	454.2	106.0	− 9.5	273.7	218.3	− 195.5	− 255.6	40.7	− 62.9	72.9
1974	352.1	124.9	− 0.5	225.7	165.5	− 137.0	− 202.1	46.1	− 68.6	137.3
1975	1,245.4	180.7	8.7	709.6	627.1	− 580.4	− 669.8	67.2	− 93.4	137.3
1976	2,091.7	301.6	3.7	1,193.1	1,050.0	− 973.5	− 1,128.5	114.2	− 148.3	209.4

SOURCE: Author's estimates based on data in Tables 2 and 3 and equations in section IV, C.

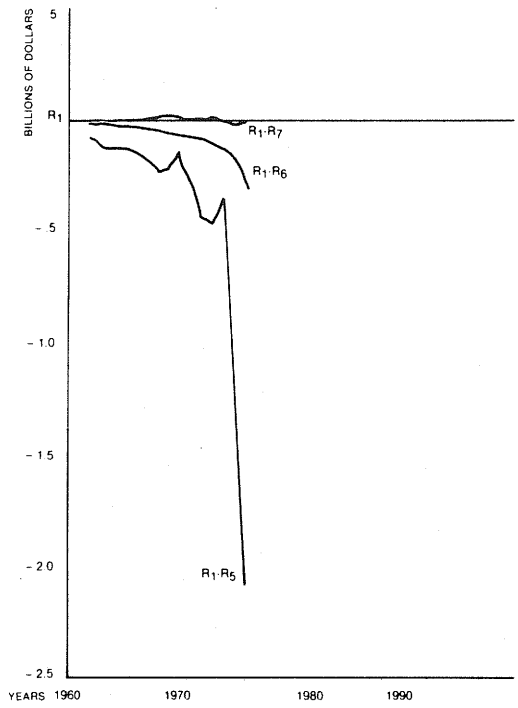

FIGURE 6

COMPARISON OF REQUIRED REVENUES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF THE INVESTMENT TAX CREDIT.

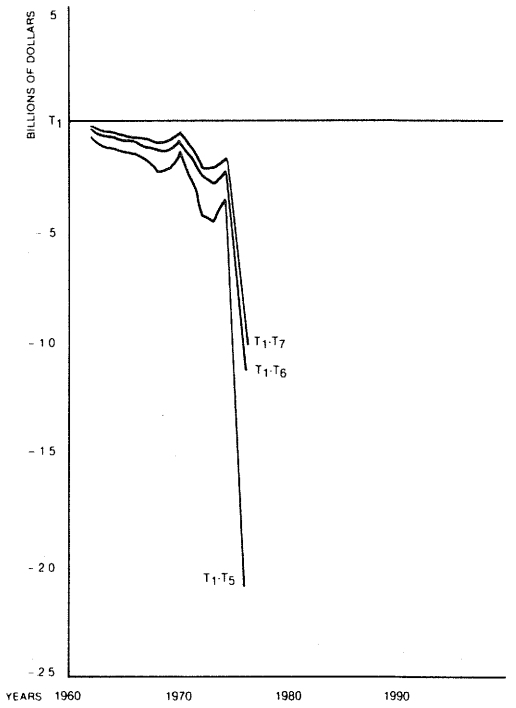

FIGURE 7

COMPARISON OF FEDERAL INCOME TAXES UNDER ALTERNATIVE RATEMAKING TREATMENTS OF THE INVESTMENT TAX CREDIT.

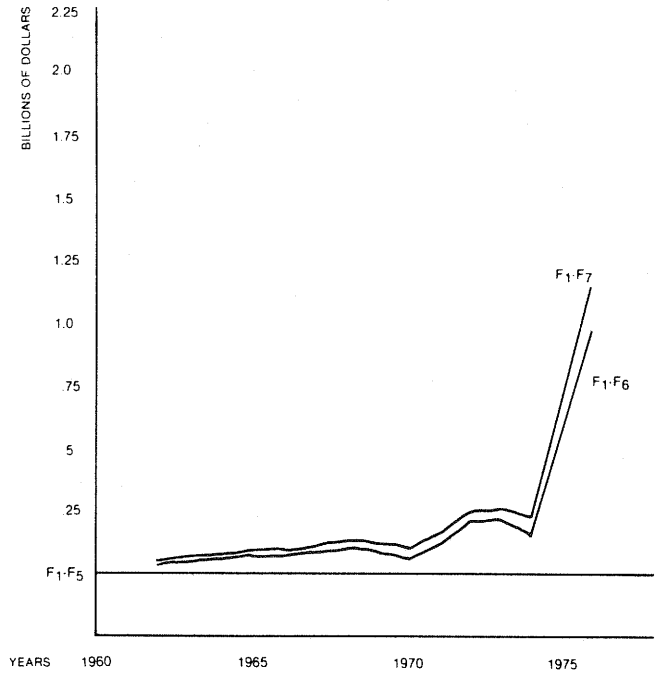

FIGURE 8

COMPARISON OF CASH FLOW UNDER ALTERNATIVE RATEMAKING TREATMENTS OF THE INVESTMENT TAX CREDIT.

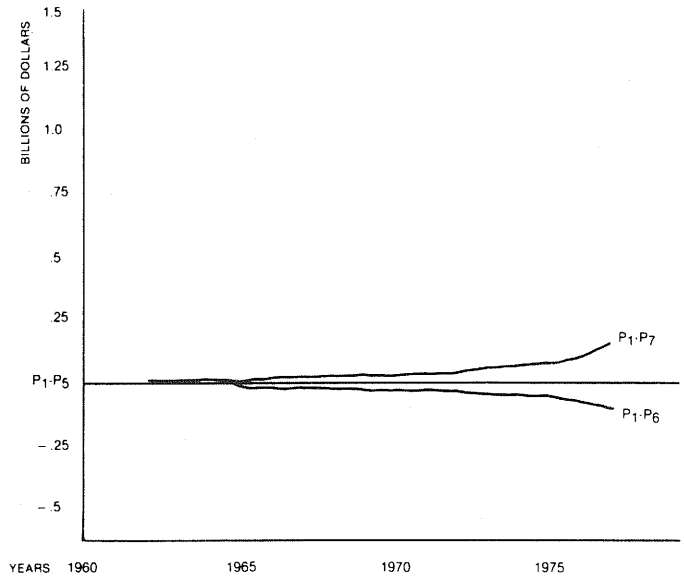

FIGURE 9

COMPARISON OF BOOK PROFITS UNDER ALTERNATIVE RATEMAKING TREATMENTS OF THE INVESTMENT TAX CREDIT.

Columns 1, 2 and 3 of Table 5 show estimates of the utility revenues under the three alternative regulatory treatments of the ITC, compared to the base case with no accelerated depreciation or ITC, and these results are graphed in Figure 6. Cost of service normalization, which apparently is by far the most prevalent form of ITC normalization, appears to have produced utility rates R_7, which during most of the time period were even higher than if the ITC did not exist, although not by a large amount. This result occurs because of the impact of accumulated deferred investment tax credits in reducing interest expenses and the allowance of the equity rate of return on deferred ITC's under this treatment (see section IV, C, 3). If the normalization utilities used rate base normalization of the ITC, the impact on utility rates, R_6, would have steadily grown to a reduction of $302 million in 1976, compared to the base case. Flow through treatment, on the other hand, would have produced a somewhat erratic[1] but substantially larger reduction in utility rates, R_5, growing to $2.1 billion in 1976. Unlike accelerated depreciation, there is no era during which normalization of the ITC yielded lower utility rates than flow through treatment would have.

The differences between tax payments by the utilities under the alternative treatments of the ITC and tax payments under the base case (columns 1, 4, and 5 of Table 5 and Figure 7), all exhibit the same pattern but have different magnitudes. Cost of service normalization produces the largest tax payments by the utilities, i.e., the smallest reduction from the base case. Rate base normalization would yield somewhat larger tax reductions, and flow through treatment of the ITC would generate substantially larger tax decreases. Compared to the base case the three treatments of the ITC would have reduced tax payments by the normalization utilities in 1976 by $1.1 billion, $1.2 billion, and $2.1 billion, respectively. The pattern of the tax reductions under all three alternative treatments clearly reveals the impact of the repeal of the tax credit during 1969—1970, and the decrease in investment tax credits utilized in 1974 due to a profit squeeze on some, though not all, of the electric utilities (see Table 3, columns 5, 8, and 9, and Table 2, column 2).

Columns 6 through 9 in the table and Figures 8 and 9 reveal that cost of service normalization is the most beneficial to the utility companies in terms of cash flow and profits. Rate base normalization is beneficial in cash flow and yields lower book profits than the base case; however, P_6 refers to the **amount** of profit, not the rate of profit. Under rate base normalization the rate of profit remains the same, but the amount declines because the deferred ITC partially substitutes for equity financing. Cost of service normalization, on the other hand, increases both the amount of profit and the realized rate of return, although not the allowed rate of return in the ratemaking formula. (See the discussion in section IV, C.)

Column 10 of Table 4 provides estimates of the reduction in revenues and tax payments experienced by the electric utilities which flow through the benefits of the investment tax credit. The trend of the data reflects the same pattern as the normalization utilities plus the movement away from flow through treatment during the 1969—1971 period and the 1975—1976 period.

E. Aggregate Impact Estimates

The estimates in Tables 4 and 5 can be combined to provide approximations of the aggregate impacts of accelerated depreciation and the investment tax credit on the electric utility industry. It is important to remember in considering such estimates that they embody all of the assumptions and approximations previously detailed. Assuming that the vast majority of electric utilities exclude the deferred tax account from the rate base in the process of normalizing accelerated depreciation, and use cost of service normalization for the investment tax credit, the estimates can be assembled by adding the data for case 3 and case 7 for normalization utilities to the estimates for the flow through companies. For example, such estimates would imply that in 1976 the two tax benefits were responsible for an aggregate reduction in electric utility rates of approximately $1.5 billion, and a decrease in Federal tax payments by the utilities of about $3.3 billion. Additionally, the electric utilities which normalize the benefits of these tax provisions experienced an increase in cash flow in excess of $2.0 billion and a slight reduction in book profits compared to the levels which would have occurred in the absence of the tax provisions.

[1] To avoid the fluctuations associated with immediate-year flow through treatment of the ITC, many flow through commissions adopted a three-year or five-year average flow through treatment. The estimates in Table 5 are calculated on an immediate-year flow through basis.

VI. The Economic Effects of Alternative Regulatory Treatments: Dynamic Analysis

The previous two sections of this paper develop and apply techniques for assessing the economic impact of accelerated depreciation and the investment tax credit and their alternative regulatory treatments in the public utility industry during a specific year. The procedures are essentially "static" in nature, i.e., given the status of the utility at a specific point in time the relationships between the various outcomes of alternative tax and regulatory policies may be determined.

This section summarizes and interprets the results of several studies which have analyzed the dynamic nature of the alternative tax and regulatory policies by using computer models to simulate the financial development of a public utility over an extended time period, and one study which analyzes these dynamic characteristics mathematically. The simulation studies compute the amount of assets and depreciation of the utility each year, and by making assumptions regarding the growth rate of the utility, the debt/equity structure, the allowed rate of return, the average life of assets, etc.,[1] trace the time paths of the utility's required revenues, tax payments, cash flow, and profits. By altering the type of depreciation or the regulatory policy, or by changing the assumed growth rate or life of assets, the impact of these variables on the outcome can be determined.

The simulation studies to date have been limited to the effects of the alternative regulatory treatments of accelerated depreciation.[2] Brigham,[3] Brigham and Pappas,[4] and Linhart[5] provide graphs showing the time paths of required revenues for otherwise identical utilities which use straight line depreciation, accelerated depreciation with flow through treatment, and accelerated depreciation with normalization treatment with the deferred tax account excluded from the rate base[6] (Brigham, and Brigham and Pappas, also show results for a utility which uses accelerated depreciation for both tax and book purposes, but no utilities are known to use this treatment). The graphs ignore the effects of inflation. Operating costs are excluded from the analysis because they are assumed to be the same in all cases. Rate adjustments are assumed to occur instantaneously,

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[1] With the exceptions noted, the studies also incorporate the assumptions embodied in the static analysis detailed in section IV, e.g., no regulatory lag and the certeris paribus assumption.

[2] Some of the studies claim that since the effects on the utility of accelerated depreciation and the ITC and their alternative regulatory treatments are similar, it is necessary to simulate only one of the tax variables. However, as observed in section IV, the regulatory treatments are not precisely parallel in all cases. Additionally, the two tax provisions do not have precisely the same financial effects on a firm. Some separate simulation analysis may therefore be justified.

[3] Brigham, Eugene F., The Effects of Alternative Tax Depreciation Policies on Public Utility Rate Structures, National Tax Journal, Vol. XX, No. 2, June 1967. Pp. 204—208.

[4] Brigham, Eugene F., and James L. Pappas, Liberalized Depreciation and the Cost of Capital, 1970 MSU Public Utilities Studies, Institute of Public Utilities, Michigan State University, East Lansing, 1970.

[5] Linhart, Peter B., Some Analytical Results on Tax Depreciation, The Bell Journal of Economics and Management Science, Vol. 1, No. 1, Spring 1970. Pp. 97—103.

[6] A similar analysis without graphs was presented to the Ways and Means Committee during consideration of the Tax Reform Act of 1969. See Statement of Robert R. Nathan, Hearings before the Committee on Ways and Means, Tax Reform, 1969, 91st Congress, 1st Session, Part 10, March 24 and 25, 1969. Pp. 3656—3699, especially Annex C.

and the utility growth rates are assumed to be constant throughout the time period (in one variant Brigham, and Brigham and Pappas, explore the results of variable growth rates). The authors divide total required revenues by total assets of the utility each year and refer to the resulting quotient as the utility rate; this device standardizes the results and facilitates comparisons through time. All variables other than those being studied—e.g., the rate of return and average asset life—are held constant throughout the simulations.

Figures 10, 11, and 12 display the principal results of these studies. The graphs assume that accelerated depreciation first becomes available in the first year; thus the results of the alternative policies begin from the same utility rates in year zero. The utility using straight line depreciation for both book and tax purposes will have constant utility rates throughout the time period; the amounts of depreciation and taxes (as proportions of total assets) do not vary for the firm, and that constancy is reflected in required revenues. The rates of the flow through utility will initially decline rather rapidly; this decline continues for a period of time equal to approximately one-half the average life of the utility's assets (life of assets is assumed to be 30 years in Figures 10—12). Beyond that point the lower tax depreciation allowances on the earlier vintage assets begin raising the tax payments and required revenues of the utility. After a period of time equal to the average asset life, the flow through utility's rates will reach a constant level and, so long as the growth rate of the utility is positive, the stabilized utility rates of the flow through utility will be lower than the rates of the straight line utility.

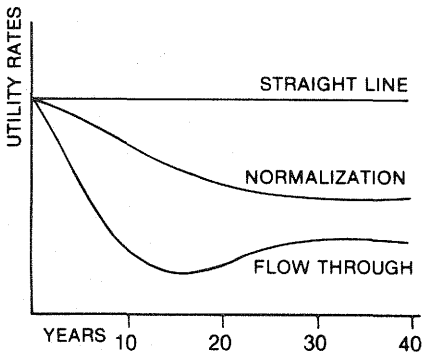

FIGURE 10

UTILITY RATES FOR HIGH CONSTANT GROWTH RATE.

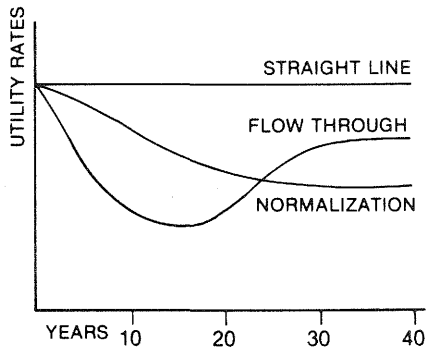

FIGURE 11

UTILITY RATES FOR LOW CONSTANT GROWTH RATE

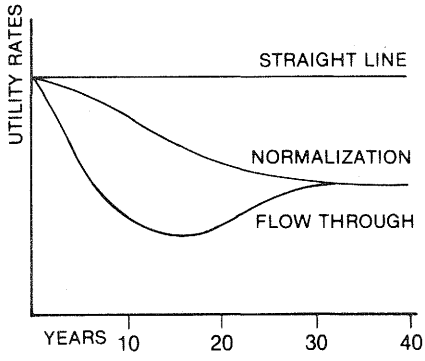

FIGURE 12

UTILITY RATES FOR CONSTANT GROWTH. RATE = (r − zud)

The required revenues of the utility that normalizes the benefits of accelerated depreciation will constantly decline during the time period equal to the utility's average asset life. During this time the deferred tax account is constantly growing, and its exclusion from the rate base lowers revenues. The utility rates for the normalization utility will also stabilize after the time period equal to the utility's average asset life, and the stabilized revenue requirements will always be lower than those of the straight line utility, regardless of the growth rate. The initial utility rates under normalization treatment will be higher than under flow through, but the stabilized rates can be either higher or lower, depending on the growth rate of the utility. Figure 10 shows the utility rates for a "high growth" utility; flow through will produce lower utility rates indefinitely (assuming all factors, including tax law, remain unchanged). Figure 11 shows the time path of utility rates for a "slow growth" utility; some time in the second half of the asset life period, flow through treatment will begin producing higher revenue requirements than normalization. There is a utility growth rate which will produce equal stabilized revenue requirements (after the average asset life) under the two alternative regulatory treatments of accelerated depreciation; Linhart mathematically proves

that rate to be equal to (r − zud).[1] Using the example values of these variables from section IV,[2] this "crossover" annual growth rate would be 6.06 percent.

Brigham and Nantell[3] repeat the above analysis and expand it somewhat by examining a case involving regulatory lag. Their lag model hypothesizes a range of realized rates of return 10 percent above and 5 percent below the target allowed rate, and a 6-month regulatory lag for implementation of a new utility rate, once the limits of the range have been exceeded. Their results are basically consistent with the earlier studies; however, they show that utility rates under flow through treatment are likely to be lower than the earlier studies revealed, due to regulatory lag. This results from the need of the flow through utility to increase its utility rates after one-half of its average asset life to maintain its allowed rate of return. However, in the regulatory lag model, there is a bias against this rate increase, resulting in lower utility rates and lower cash flow and profits for the utility than in the simulations which assume instantaneous rate adjustment. Both Brigham and Pappas, and Brigham and Nantell, draw attention to this need of flow through utilities eventually to raise their utility rates, and the potential need to raise rates even higher if growth rates slow or the tax laws change adversely, as sources of higher risk associated with flow through treatment. This is suggested as part of the explanation of the aversion to flow through treatment among utility companies and investors.

The above results indicate that, depending on the utility growth rate, one regulatory treatment of the tax benefits may yield lower utility rates during some years, while the alternative treatment produces lower rates in other years. Evaluation of such "overlapping" time streams may be enhanced by present value analysis. This technique compares different time streams of amounts of money by discounting the dollar figure in each future year by an interest rate, or "discount rate," to convert the future amounts into equivalent "present values." For example, if the interest rate is 8 percent, the present value of $100 to be received each of the next three years is $257.70 because that amount with an 8 percent return will yield the three $100 amounts ($92.59 × 1.08 + $85.73 × $(1.08)^2$ + $79.38 × $(1.08)^3$ = $100 + $100 + $100). Similarly, the present value of $90 to be received in one year, $100 in two years, and $110 in three years is $256.38, at an 8 percent discount rate. Thus, despite the equal sums of these two dollar streams, the first is worth more in present value terms because of the earlier receipt of a portion of the funds.

Present value analysis is used to compare the time paths of utility rates produced by flow through and normalization of accelerated depreciation by Pollock.[4] This study found that normalization with the deferred tax account excluded from the rate base produced the time path of utility rates with the lowest present value for most of the assumed parameter values examined (i.e., growth rates, asset lives, rates of return, debt/equity ratios, discount rates, etc.). Thus, the study implies that, despite the higher utility rates yielded by normalization treatment (compared to flow through) in the early years, the lower rates under normalization in the later years more than make up for the difference under most assumed parameter values. However, the study does not fully explore the extent to which these results depend on the relatively low discount rates used in the present value analysis (see the discussion below). Additionally, the effects of changes in the parameter values on the relative levels of the present values of utility rates under the two treatments can be ascertained from the Pollock study. For example, a higher allowed rate of return for the utility makes the utility rates under normalization relatively lower in a present value sense, as does a longer time period for the present value analysis. On the other hand, a higher growth rate and higher discount rate make the present value of utility rates relatively lower under flow through treatment.

Pollock's paper, in addition to evaluating utility rates under the two treatments, also examines the present values of the time streams of tax payments and cash flows under the alternative

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[1] Linhart, op. cit. P. 103.

[2] z = .48, r = .075, u = .06, and d = .5.

[3] Brigham, Eugene F., and Timothy J. Nantell, Normalization Versus Flow Through for Utility Companies Using Liberalized Tax Depreciation, The Accounting Review, July 1974. Pp. 436—447.

[4] Pollock, Richard, The Effect of Alternative Regulatory Treatment of Tax Depreciation on Utility Tax Payments, National Tax Journal, Vol. XXVI, No. 1, March 1973. Pp. 43—57.

treatments and shows results for normalization treatment with the deferred tax account not excluded from the rate base. Generally, Pollock finds the present values of tax payments and cash flow to be higher under flow through treatment for utilities with slow growth rates, and higher under normalization (with the deferred tax account excluded from the rate base) for higher growth rate utilities. (Again, the importance of the discount rate in determining these results is unexplored.) Consistent with the results in section IV is Pollock's analysis of the type of normalization treatment which does not exclude the deferred tax account from the rate base; he finds that in all cases this treatment yields considerably higher utility rates, tax payments, and cash flow than the alternative treatments, again in present value terms.

The present value analysis by Pollock compares utility rates for a firm under the alternative regulatory treatments over long time periods (30 years and 100 years). An alternative approach used by some analysts to examine the effects of flow through and normalization treatments is to stimulate the financial results over the life of a particular **asset** rather than over a period of years for a **firm.** In this way the entire life cycle of the financial effects of the alternative regulatory treatments of the tax benefits can be explored. However, this procedure occasionally has led to erroneous conclusions regarding the impact of the tax benefits and regulatory treatments on utility companies because of the problem of aggregating the results. In other words, at any point in time a company will have different numbers and values of assets of a variety of vintages, and drawing conclusions about impacts on the company as a whole from information about impacts on individual assets must be done very carefully.

This study will use a different analytical framework to accomplish the same purpose but focus on the entire company rather than a particular asset. The procedure is to consider the relationships over a "full cycle" of the impact of the tax policies on a utility company—i.e., from adoption, through termination of the tax benefit, and the gradual amortization of the deferred tax account built up under normalization treatment. Obviously, such a scenario is hypothetical—it is intended only as an analytic device—but its economic characteristics are instructive in fully understanding the dynamic effects of the alternative regulatory treatments.

Such a "full cycle" present value analysis of utility rates can be facilitated by employing the equations developed in section IV. Equation 3m stated the relationship between utility rates under normalization with the deferred tax account excluded from the rate base and flow through of accelerated depreciation as follows:

$$3\ \text{m)} \qquad R_3 - R_2 = \frac{z \cdot (D^a - D^s) \ - \ (r - z \cdot u \cdot d) \cdot A}{1 \ - \ z}$$

The present values of utility rates under normalization and flow through will be equal if the present value of this equation is equal to zero over whatever time period is being studied. In general, mathematically determining the conditions under which this will occur would be very complicated.[1] However, if the "full cycle" of the tax policy effect is being studied, the conditions can be determined readily by examining equation 3m conceptually and thinking somewhat analogically about the nature of the economic effects. Accelerated depreciation amounts to an interest-free loan from the U.S. Treasury to the utility company;[2] the principal of the "loan" is given to the utility in the early years of the lives of each of the utility's assets, and the "loan" must be repaid as these assets approach retirement. The alternative regulatory treatments of accelerated depreciation amount to different treatments of the interest-free loan the utility has received from the Treasury. Under flow through treatment the utility is required to pass the principal amount of the loan directly on to its

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[1] The present value (P.V.) of amounts of money a_t, $t = 1, 2, \ldots n$, received over n years and evaluated at a discount rate of r is given by the following expression:

$$\text{P.V.} = \sum_{t=1}^{n} \frac{a_t}{(1+r)^t}$$

[2] Many public utility analysts view the interest-free loan as coming from the utility's **customers** under normalization treatment. However, this view confuses the **source** of the benefit with an interpretation of the **effect** of one of the alternative regulatory treatments. The tax expenditure view of the benefit expressed above would seem to lead to a clearer understanding of the issues and avoid preordaining a conclusion regarding appropriate regulatory treatment.

customers through reduced utility rates. Since the utility must eventually repay the loan to the Treasury (assuming a "full cycle" of the tax policy), at some point in the future the amount of the loan eventually must be paid back to the utility by its customers. The value of this procedure to the customers, then, is the value of holding the principal of the interest-free "loan" for its duration, i.e., it is the interest which customers can receive while holding the loan from the Treasury. The utility itself obviously derives no benefit from this procedure; it merely serves as a conduit for funds from the Treasury to its customers.[1]

Under normalization treatment with the deferred tax account excluded from the rate base, the utility is not required to pass on to its customers the principal of the interest-free loan from the Treasury. Rather, the utility keeps the principal of the loan and, prior to repayment to the Treasury, may use it as a source of funding for its capital investment program. However, during this time, the utility is required to pay interest to its customers on the amount of the Treasury loans it holds; the interest rate equals the utility's allowed rate of return, and the interest is received by customers through lower utility rates.

For the "full cycle" of the tax policy, the customers' point of indifference between flow through treatment and normalization treatment (with the deferred tax account excluded from the rate base) therefore becomes clear: customers will prefer flow through treatment if their discount rate (the interest rate they can earn) is higher than the effective rate of return they will receive from the utility under normalization; they will prefer normalization if the opposite is true, and they will be **indifferent** if their discount rate **equals** their effective rate of return under normalization.[2]

Thus, the interpretation of equation 3m above is clear. The left side of the numerator[3] of the equation is equal to the amount of the interest-free loan the customers would receive each year under flow through treatment. The right side is equal to the effective rate of return the customers receive on the deferred tax account (r – zud) multiplied by the amount of the deferred taxes. The effective rate of return received by customers on the deferred taxes equals (r – zud), rather than r, because a portion of the deferred taxes is used to finance investments which otherwise would have been financed by debt. Since interest on debt is tax deductible, the loss of the reduction in tax payments, which would have resulted from the higher interest payments, decreases the net rate of return to customers. Therefore, (r – zud) is the "full cycle" indifference discount rate for customers; if their discount rate is above this rate, they will benefit from flow through treatment; if their discount rate is below this level, they will benefit from normalization treatment, considered from the perspective of present value analysis over the "full cycle" of the tax policy.[4]

This result is independent of the growth rate of the utility, the average asset life, or the time period for the present value analysis (so long as the "full cycle" of the tax policy impact can be experienced). This contrasts with the results of the present value study by Pollock which found that the relationship between the present value of utility rates under flow through treatment and under normalization does depend on these variables. The reason for these contrasting results is the different analytical frameworks; Pollock does not analyze the effect of the tax and regulatory policies over a "full cycle" of the tax benefit. In the Pollock study the present value analysis is truncated at 30 years or 100 years with the tax policy still fully in effect and the deferred tax account still growing; in the terminology of the analogical discussion above, the interest-free "loans" from the

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[1] In fact, the utility suffers some disadvantage; see sections VII and VIII.

[2] For the moment this statement ignores the possibility that the utility's customers may consist of different individuals at different points of time. See discussion at end of this section.

[3] This discussion ignores the denominator of the equation (1 – z) which reflects the fact that revenues and tax payments are simultaneously determined. The discussion remains accurate, except that all the amounts involved are actually larger by a factor of $\frac{1}{(1-z)}$

[4] This point has been made somewhat less explicitly in McConnell, Mark S., and John Salmansevitz, Phantom Taxes: The Real Effects, Unpublished Mimeo, September 26, 1977; and in Lancaster, Angela A., Tax Normalization for Public Utilities, Office of Regulatory Analysis, Federal Energy Regulatory Commission, Memorandum, February 1978. It was also made in Brigham and Nantell, op. cit. P. 439. However, its fullest development, including detailed mathematical proof, is to be found in Linhart, op. cit. Pp. 90—93.

Treasury have not yet been repaid. In this situation the value of the benefits under the alternative regulatory treatments includes not only the "interest" received on the interest-free "loans" from the Treasury, but also the value of the principal of the "loans" which is still held by customers, under flow through treatment, or by the utilities, under normalization. Obviously, the present value results in this case **will** depend on the time period studied and the growth rate of the utility[1] (which determines the growth in deferred taxes).

The study by Pollock examines time periods over which utility rates behave like those in Figures 10, 11, and 12. It is instructive to consider the impact on utility rates under the alternative regulatory treatments if accelerated depreciation were to be repealed at the end of the time period displayed in these graphs. If accelerated depreciation were repealed, utility rates under flow through treatment would quickly rise to a level higher than rates for the straight line utility as depreciation on assets under accelerated depreciation sank to below straight line levels in the latter part of the assets' lives. These higher utility rates under flow through treatment would be necessary to enable the utility to repay the "loans" to the Treasury since the flow through utility has no deferred tax account for that purpose. On the other hand, if accelerated depreciation were repealed, utility rates for the normalization utility would not rise quickly; they would rise gradually as the deferred tax account diminished and would reach the level of the straight line utility's rates (never exceeding it) only after the deferred tax account had been fully depleted, a length of time equal to the life of the utility's assets.[2] During this time period, after repeal of the tax benefit, utility rates under flow through treatment would considerably exceed rates under normalization treatment; it is this factor which is included in the "full cycle" present value analysis (through the time value of the deferred tax account) that enables the present value of the normalization rates to be equal to the present value of the flow through rates at the discount rate of $(r - zud)$, regardless of the utility growth rate. The equalizing discount rate will be lower than $(r - zud)$ for cases which do not include the "full cycle" of the tax benefit.

The similarity between equation 3m and equation 6m, which describes the relationship between flow through treatment of the investment tax credit and rate base normalization of the ITC, permits the immediate conclusion that the above analysis also applies to this relationship.[3] Additionally, a quick examination of equations 4k and 7l reveals that no positive discount rate can make consumers indifferent between flow through treatment of accelerated depreciation and normalization with the deferred tax account not excluded from the rate base, and between flow through treatment of the investment tax credit and cost of service normalization. This is because the deferred tax accounts in these relationships increase, rather than reduce, the differences between utility rates under flow through and under these versions of normalization.

It is intriguing, but somewhat problematic, to explore the policy implications which may derive from the present value analysis developed above. The issues surrounding the phantom tax argument take on a somewhat different hue in light of the dynamic analysis of utility rates. As indicated in the previous section, the phantom tax argument, as usually stated by its proponents, ignores or deemphasizes the impact of excluding the deferred tax account from the rate base under normalization. The argument also ignores the dynamic and present value implications of the alternative treatments. Thus, even though in any given year utility customers may be paying "phantom taxes" under normalization treatment and may also be paying higher utility rates than they would be under flow through treatment, it still could be the case that the present value of the future stream of utility rates under normalization is lower than the present value of future utility rates if flow through treatment were imposed.

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[1] An optional procedure is to evaluate the alternative policies over an infinite time period extending into the future. This is the approach used by Linhart to derive the same present value results as yielded by the "full cycle" analysis above. However, a potential limitation of the Linhart approach is that, for infinite time periods, the present value of utility rates is undefined if the utility growth rate exceeds the discount rate. This is potentially a serious limitation since it is the nominal growth rate which is controlling.

[2] Graphs for a similar example are presented in Linhart, op. cit. P. 104.

[3] However, the "loan" from the Treasury becomes a "grant" which is either passed on to customers immediately, under flow through, or retained by the utility with customers earning "interest" on the amount, under normalization.

However, having drawn attention to this possibility and spent considerable space discussing the present value analysis, it must also be observed that the extent to which present value analysis provides information which is directly useful and meaningful for policy decisions regarding the impact of normalization versus flow through treatment on consumers is unclear. This reservation is advanced for four reasons: 1) the difficulty of determining the appropriate consumer discount rate, 2) the possibility that the requirement of a rate of return differential between normalization and flow through utilities will alter the present value relationships between the alternative treatments, 3) the uncertainty regarding the appropriate analytical framework for present value analysis of this issue, and 4) the extremely long time periods necessarily involved in the analysis.

As indicated earlier, the relationship between the consumer discount rate and some other rate—(r – zud) in the "full cycle" analysis, or a lower rate otherwise—is the controlling factor in determining the regulatory treatment which will yield the lowest utility rates in present value terms. But what is the appropriate consumer discount rate to use in such an evaluation? One suggestion might be the interest rate which consumers would typically be expected to earn on savings. This would be a relatively low interest rate and in many cases would lead to the conclusion that normalization treatment yields the stream of utility rates with the lowest present value. On the other hand, since most consumers would be expected to be net debtors, an average interest rate on consumer borrowing may be a more appropriate discount rate. This would be a relatively high interest rate and would most often produce the result that flow through treatment yields lower utility rates in present value terms. Since a single discount rate is required for the analysis, the rate would have to be an average which reflects the varying circumstances of members of the consumer population. The appropriate consumer discount rate may also be affected by the lengthy time periods over which the present value analysis of this issue must necessarily be conducted, about which more is said later. Thus, the first problem with present value analysis of the relationship between utility rates under normalization and flow through is that the evaluation depends heavily on the consumer discount rate, but the appropriate rate to use in such an analysis is to some extent judgmental.

A second potential problem with the present value analysis as developed above is that one of the important premises of the analysis may be inaccurate. This is the assumption that the rate of return of the utilities is the same under normalization and under flow through regulatory treatments. If this is not the case, and there appears to be evidence that it is not, then the present value relationships between normalization and flow through will be altered, perhaps substantially. This issue is explored more fully in section VII, B.

The third difficulty with present value analysis of the relationship between normalization and flow through is the ambiguity regarding the appropriate analytical framework. If the analytical framework is to involve a "full cycle" analysis of the tax policy, then, as detailed above, the relation of the consumer discount rate to (r – zud) will determine the outcome. However, such an analysis involves the implicit assumption that the tax benefit will eventually be repealed, which may be improbable. On the other hand, to perform the present value analysis without this assumption requires making several other assumptions regarding tax policy, the growth of the utility, and its financial development over a lengthy time period into the future, and therefore runs a high risk of error. Importantly, it also necessitates choice of an appropriate time period for the present value analysis, and the results will differ depending on the time period chosen.

The lengthy time period necessarily involved in this analysis is the fourth factor which undermines its relevance for policy decisions. When alternative time streams of charges or benefits to a group of customers (who are not the whole population) span a short time period, say 5 to 10 years, present value analysis offers a useful means of evaluating the alternatives. However, the relevant time span for evaluating the relationship between normalization and flow through regulatory treatments is ambiguous, but it is of necessity very long. At a minimum it is about 30 years, an approximation of the average asset life for utilities, and present value analyses of this issue spanning 50 to 100 years have also been performed. Such time periods stretch beyond the lifetimes of many present utility customers and are certainly long enough for substantial numbers of the original group of customers to have moved to other areas served by other utilities. Thus, it is entirely possible, indeed probable, that the original group of customers will not fully benefit from the time value

of the deferred tax account which accumulates under normalization treatment or share the higher future utility rates under flow through treatment. If one of the purposes of utility regulation is to avoid subsidizing one group of customers at the expense of another, this factor diminishes the usefulness of present value analysis for this policy choice and emphasizes the importance of appropriate treatment on a year-by-year basis.

It might seem more appropriate to apply present value analysis to the stream of tax payments received by the Treasury in determining the revenue collectors' most preferred regulatory treatment, since the Treasury presumably may be regarded as the same institution over an indefinite time period and therefore has a permanence that a group of customers of a particular utility does not.

A quick examination of equation 3o reveals that the tax collector's "full cycle" indifference discount rate is (r – ud); for discount rates above this level the present value of future tax payments will be maximized by normalization, and flow through would maximize for lower discount rates. However, the first two problems identified above for present value analysis for consumers also affect the analysis for the Treasury. There is considerable dispute over the appropriate discount rate to use for public endeavors, and a differential rate of return between flow through and normalization utilities would also alter this relationship.

It is not clear whether the Treasury does, in fact, consider the time value of money, or merely estimates of short-term tax receipts, in determining policy positions. It is only recently that Congress has looked at five-year projections of receipts and expenditures in making budget decisions. Additionally, enhancing the intended effect of a tax provision may outweigh revenue considerations in the Treasury's priorities. After all, the tax benefits involved were enacted with the intention of giving up tax revenue in an attempt to accomplish some social purpose. Thus, with regard to alternative regulatory treatments of accelerated depreciation and the ITC, the Treasury may prefer the treatment which is perceived to have an impact on utilities most similar to the effect of these tax policies on non-utilities, or it may prefer the treatment perceived to have the largest effect on investment and the financial health of the utility industry, rather than the treatment which will maximize the present value of tax receipts.

It is for the utilities themselves that present value analysis of this issue is potentially the most relevant; there is less ambiguity about the companies' discount rate; the companies can be regarded as the same institutions indefinitely, and the policy preferences of the utilities are presumably guided by a desire to maximize the present value of the companies.

From equation 3p it can be readily determined that to maximize the present value of future cash flows, a utility company's "full cycle" indifference rate is (r – ud). However, since (r – ud) = r_e (1 – d), this is the company's discount rate for evaluating the equity return of future projects. Thus, other things being equal, the utility companies should be indifferent between normalization (with the deferred tax account excluded from the rate base) and flow through treatment of accelerated depreciation over the "full cycle" of the tax benefits. However, if the present value analysis of cash flows is performed over any finite time period which does not include a "full cycle" of the tax benefits (the more usual practice), the companies will always prefer normalization. Normalization without excluding the deferred tax account from the rate base and cost of service normalization of the ITC are always preferred even over the "full cycle" of the tax benefits. Additionally, other aspects of the alternative regulatory treatments considered in section VII, B further tilt the preferences of the utility companies toward normalization.

VII. Other Important Factors: Changes in Tax Policy, the Rate of Return, and the Growth Rate

The analysis in sections IV through VI of this paper has employed a model of public utilities operating under alternative tax policies and regulatory treatments developed in section IV. As specified in the beginning of that section, several simplifying assumptions are incorporated in the model, most importantly the certeris paribus assumption. In this section, the implications for the earlier results of changes in three other factors, tax policy, the allowed rate of return, and the utility growth rate are explored.

A. Changes in Tax Policy

Changes in tax policy obviously affect the results derived in the analytical model in section IV. Certain tax policy changes (the tax rate changes in 1964, 1965, and 1968—1970, and changes in the investment tax credit) affect the results displayed in section V; however, the changes were merely incorporated in the calculations and were not analyzed separately. In this subsection the impact of tax policy changes on the earlier analytical results is made explicit. The approach in this section, however, is to show example results and suggest overall conclusions, rather than provide an exhaustive treatment of all cases as in sections IV and V. Two tax policy changes are examined: a change in the tax rate, and a change in the amount of the investment tax credit. A change in accelerated depreciation would have a similar, though not identical, effect to changes in the ITC.

The effect of a change in the tax rate on the relationships in section IV can be found by taking simple partial derivatives. Partial derivatives with respect to the tax rate, z, of the definitional equations for case 1 (the base case with no accelerated depreciation or investment tax credit) yield the following results (as in section IV the derivations are omitted):

8 a) $$\frac{\delta R_1}{\delta z} = \frac{r \cdot \left[V - \sum_j D^s\right] - i}{(1 - z)^2}$$

b) $$\frac{\delta T_1}{\delta z} = \frac{r \cdot \left[V - \sum_j D^s\right] - i}{(1 - z)^2}$$

c) $$\frac{\delta F_1}{\delta z} = 0$$

d) $$\frac{\delta P_1}{\delta z} = 0$$

These results are less intuitive than those obtained in section IV, so no interpretive explanation will be attempted. The important aspects of the results are the sign (positive or negative) and the magnitudes of the partial derivatives. The expressions in equations 8a and b are positive and equal,

implying that a reduction in the tax rate will reduce required revenues and tax payments of the utility by equal amounts. As a result, cash flow and profits of the utility remain unchanged; all of the benefits of a tax rate reduction accrue immediately to ratepayers. While the precise mathematical expressions differ,[1] these general results also apply for all of the cases involving the investment tax credit (cases 5, 6, and 7).[2] Thus, in general, a reduction in the tax rate will lower the utility rates paid by utility customers as the tax decrease is passed on through lower required revenues, and the tax reduction provides no direct benefit to the utility itself (or its stockholders).[3]

This is in contrast to the results if the investment tax credit (or another tax benefit, e.g., accelerated depreciation) is increased rather than reducing the tax rate. In this circumstance the utility does benefit if it receives normalization regulatory treatment. Partial derivatives with respect to I^a for the flow through case (case 5) are shown below:

9 a) $$\frac{\delta R_5}{\delta I^a} = \frac{-1}{1-z}$$

b) $$\frac{\delta T_5}{\delta I^a} = \frac{-1}{1-z}$$

c) $$\frac{\delta F_5}{\delta I^a} = 0$$

d) $$\frac{\delta P_5}{\delta I^a} = 0$$

As expected, the results are similar to equations 8 above; an increase in the investment tax credit will reduce both revenue and taxes by an equal amount for the flow through utility and will have no effect on cash flow or profits. However, under both rate base normalization (case 6) and cost of service normalization (case 7) the results are quite different, as shown below:

10 a) $$\frac{\delta R_6}{\delta I^a} = \frac{-(r - z \cdot u \cdot d) \cdot (1 - \alpha^{-1})}{1 - z}$$

b) $$\frac{\delta T_6}{\delta I^a} = \frac{-z \cdot (r - u \cdot d) \cdot (1 - \alpha^{-1})}{1 - z} - 1$$

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[1] The expressions for the investment tax credit cases are as follows:

$$\frac{\delta R_5}{\delta z} = \frac{\delta T_5}{\delta z} = \frac{r \cdot \left[V - \sum_j D^S\right] - i - I^a}{(1-z)^2}$$

$$\frac{\delta R_6}{\delta z} = \frac{\delta T_6}{\delta z} = \frac{R \cdot \left[V - \sum_j D^S\right] - B - i_m}{(1-z)^2}$$

$$\frac{\delta R_7}{\delta z} = \frac{\delta T_7}{\delta z} = \frac{r \cdot \left[V - \sum_j D^S\right] + w \cdot B - i_m - I^n}{(1-z)^2}$$

$$\frac{\delta F_5}{\delta z} = \frac{\delta F_6}{\delta z} = \frac{\delta F_7}{\delta z} = \frac{\delta P_5}{\delta z} = \frac{\delta P_6}{\delta z} = \frac{\delta P_7}{\delta z} = 0$$

[2] These general results (with different particulars) also apply for flow through treatment of accelerated depreciation (case 2). However, for the two cases involving normalization of accelerated depreciation (cases 3 and 4), the results are somewhat different because the amount of the tax benefit from accelerated depreciation, and therefore the effects of normalization, depend on the tax rate. In these cases, for example, a reduction in the tax rate causes a change in cash flow.

[3] This statement obviously requires modification to the extent that regulatory lag occurs.

c) $\frac{\delta F_6}{\delta I^a} = 1 - (r - u \cdot d) \cdot (1 - \alpha^{-1})$

d) $\frac{\delta P_6}{\delta I^a} = -(r - u \cdot d) \cdot (1 - \alpha^{-1})$

e) $\frac{\delta R_7}{\delta I^a} = \frac{(w + z \cdot u \cdot d) \cdot (1 - \alpha^{-1}) - \alpha^{-1}}{1 - z}$

f) $\frac{\delta T_7}{\delta I^a} = \frac{z \cdot (w + u \cdot d) \cdot (1 - \alpha^{-1}) - z \cdot \alpha^{-1}}{1 - z} - 1$

g) $\frac{\delta F_7}{\delta I^a} = (1 - \alpha^{-1}) + (w + u \cdot d) \cdot (1 - \alpha^{-1})$

h) $\frac{\delta P_7}{\delta I^a} = (w + u \cdot d) \cdot (1 - \alpha^{-1})$

where $\alpha =$ asset life[1]

These results are consistent with those in section IV. The equations imply that an increase in the investment tax credit will reduce utility rates under rate base normalization (due to exclusion of the deferred ITC from the rate base) and will increase utility rates under cost of service normalization (due to the allowance of the equity rate of return on the deferred ITC). Taxes will decrease under both regulatory treatments but will decrease by a larger amount under rate base normalization. Cash flow to the utility increases in response to a higher ITC under both versions of normalization. The increase in cash flow is smaller than the increase in ITC under rate base normalization; larger under cost of service normalization. Book profits decline under rate base normalization (but the rate of return remains constant); profits increase under cost of service normalization.

These results have important implications for tax policy with regard to regulated industries: a reduction in the tax rate will not directly benefit a regulated company;[2] an increase in a tax benefit (e.g., investment tax credit, accelerated depreciation, accelerated amortization) will benefit a regulated company through higher cash flow if the tax benefit receives normalization regulatory treatment.[3] This is the reason that the regulated industries strongly support increased investment tax credits (or other tax benefits) with normalization treatment, but offer only minimal support, if that, for reduction of the corporate tax rate. For example, in its statement before the Ways and Means Committee on the President's 1978 tax cut proposals, the Edison Electric Institute made the following points:

A stated objective of the Administration's proposal is to stimulate the economy and expand production facilities. In view of this, the most important single provision of the Tax Reduction and Reform Bill is that the investment tax credit (ITC) be made permanent at the 10 percent level and that the 90 percent limitation be restored.

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[1] Since for a given year: $I^n = \frac{I^a}{\alpha}$, $\frac{\delta I^n}{\delta I^a} = \alpha^{-1}$, and $\frac{\delta B}{\delta I^a} = (1 - \alpha^{-1})$

[2] In fact, a reduction in the tax rate could reduce the cash flow of a utility which normalizes the investment tax credit if the reduced tax rate caused the utility to have unusable ITC's (or a higher level of unusable ITC's). It has been suggested that a decreased tax rate may lead to regulatory commission decisions to increase the allowed return to compensate for the reduction of cash flow and accumulated reserves. See Batinovich, Robert, and Vernon L. Sturgeon, Federal Taxes and Regulated Utilities: A Solution to the Dilemma, Mimeo, January 12, 1978. Pp. 14—15.

[3] This statement and the analysis herein implicitly accept the notion that the income tax on regulated industries operates to a large extent like an excise tax. Thus, if the capital market transfers the burden of the corporate income tax on to capital invested in regulated industries, the above results are weakened. However, assessing this possibility would require a general equilibrium analysis which is beyond the scope of this study.

ITC is an effective means of promoting business capital investment. The Administration's proposals regarding ITC are strongly favored by the investor-owned electric utility industry, because their implementation will provide a significant portion of the internal cash generation needed to help finance our continuing construction programs.

It is also important that Congress, in acting on these investment credit changes, continue the related ratemaking provisions that are reflected in existing law. Without such provisions, the benefits of ITC might well be dissipated in temporarily increased dividends to stockholders or temporarily reduced rates for electricity.

We endorse the President's proposal to reduce the corporate tax rate in order to support the needed expansion of the economy as a whole. It should be pointed out, however, that the highly capital-intensive regulated utilities will only retain the results of a tax rate reduction until their next rate proceeding, because all such reductions of corporate taxes are treated as cost reductions and reflected in reduced revenue requirements.[1]

The impacts of changes in the tax rate or the investment tax credit on the relationships between flow through regulatory treatment and normalization treatment are implicit in the above results and may also be derived explicitly, using the calculus employed in this subsection. The results of such an analysis are as one would expect: a reduction in the tax rate will narrow the differences between flow through versus normalization treatments regarding required revenues and tax payments (leaving the differences regarding cash flow and profits unchanged), whereas an increase in the investment tax credit will widen the differences between flow through treatment and normalization (including the differences regarding cash flow and profits). For the interested reader the mathematical results verifying these conclusions are displayed in Table 6.

[1] Statement of Gordon R. Corey on Behalf of Edison Electric Institute, in Hearings before the Committee on Ways and Means, The President's 1978 Tax Reduction and Reform Proposals, House of Representatives, 95th Congress, 2d Session, Part 4 of 9, March 8 and 9, 1978. Pp. 2177—2187.

TABLE 6

THE IMPACTS OF CHANGES IN THE TAX RATE AND THE INVESTMENT TAX CREDIT ON THE RELATIONSHIPS BETWEEN FLOW THROUGH REGULATORY TREATMENT AND NORMALIZATION TREATMENT

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a) $$\frac{\delta (R_6 - R_5)}{\delta z} = \frac{I^a - (r - u \cdot d) \cdot B}{(1 - z)^2}$$

b) $$\frac{\delta (T_6 - T_5)}{\delta z} = \frac{I^a - (r - u \cdot d) \cdot B}{(1 - z)^2}$$

c) $$\frac{\delta (F_6 - F_5)}{\delta z} = 0$$

d) $$\frac{\delta (P_6 - P_5)}{\delta z} = 0$$

e) $$\frac{\delta (R_6 - R_5)}{\delta I^a} = \frac{1 - (r - z \cdot u \cdot d) \cdot (1 - \alpha^{-1})}{1 - z}$$

f) $$\frac{\delta (T_6 - T_5)}{\delta I^a} = \frac{z \cdot [1 - (r - u \cdot d) \cdot (1 - \alpha^{-1})]}{1 - z}$$

g) $$\frac{\delta (F_6 - F_5)}{\delta I^a} = 1 - (r - u \cdot d) \cdot (1 - \alpha^{-1})$$

h) $$\frac{\delta (P_6 - P_5)}{\delta I^a} = -(r - u \cdot d) \cdot (1 - \alpha^{-1})$$

i) $$\frac{\delta (R_7 - R_5)}{\delta z} = \frac{(I^a - I^n) + (w + u \cdot d) \cdot B}{(1 - z)^2}$$

j) $$\frac{\delta (T_7 - T_5)}{\delta z} = \frac{(I^a - I^n) + (w + u \cdot d) \cdot B}{(1 - z)^2}$$

k) $$\frac{\delta (F_7 - F_5)}{\delta z} = 0$$

l) $$\frac{\delta (P_7 - P_5)}{\delta z} = 0$$

m) $$\frac{\delta (R_7 - R_5)}{\delta z} = \frac{(1 - \alpha^{-1}) + (w + z \cdot u \cdot d) \cdot (1 - \alpha^{-1})}{1 - z}$$

n) $$\frac{\delta (T_7 - T_5)}{\delta z} = \frac{z \cdot [(1 - \alpha^{-1}) + (w + u \cdot d) \cdot (1 - \alpha^{-1})]}{1 - z}$$

o) $$\frac{\delta (F_7 - F_5)}{\delta z} = (1 - \alpha^{-1}) + (w + u \cdot d) \cdot (1 - \alpha^{-1})$$

p) $$\frac{\delta (P_7 - P_5)}{\delta z} = (w + u \cdot d) \cdot (1 - \alpha^{-1})$$

B. Differential Rates of Return

As indicated in the analysis in sections IV, V, and VI, normalization treatment of tax benefits has a more favorable financial effect on regulated utilities than does flow through treatment. This more favorable financial effect manifests itself in several ways. The cash flow of the normalization utility is higher than that of the flow through utility. The accumulation of this higher cash flow enables the normalization utility to finance a higher proportion of its capital investments from internally generated sources, thus relying less heavily on the capital markets. This combination yields more favorable financial ratios, such as the debt coverage ratio,[1] used by the financial community to gauge economic health. The financial and accounting communities generally regard the earnings of normalization utilities as of "higher quality" than those of flow through utilities because the former companies have made adequate provision for future tax liabilities and have not inflated present earnings by tax deferrals. The analysis in section VI revealed that a flow through utility is more likely to require rate increases in the future. This, combined with regulatory lag and an aversion to rate increases among regulatory commissions, increases the risks associated with the future earnings of flow through utilities.

All of these arguments have been used by the utilities and financial and accounting groups to argue against flow through treatment and in favor of normalization. However, these factors, in and of themselves, do not reject either regulatory treatment; they merely imply that flow through utilities should require higher rates of return than normalization utilities to be competitive in the capital markets. With a sufficient differential between rates of return for flow through and for normalization utilities, investors and creditors should be indifferent between the two.[2] In this case the financial differences enumerated above recede, and the issue becomes how the rate of return differential affects the relationships between normalization and flow through regulatory treatments analyzed in sections IV through VI (the earlier analysis assumed equal rates of return).

The regulated industry model developed in section IV assumes the overall allowed rate of return remains constant regardless of the regulatory treatment of the tax benefits. However, the model is easily amended to provide for different rates of return in the various cases. The equations comparing the results under flow through treatment of the investment tax credit (case 5), rate base normalization of the investment tax credit (case 6), and cost of service normalization of the ITC (case 7), take the following forms if different rates of return are allowed under each treatment:

12 a) $$R_6 - R_5 = \frac{I^a - (r_6 - z \cdot u \cdot d) \cdot B + (r_6 - r_5) \cdot \left[V - \sum_j D^s \right]}{1 - z}$$

b) $$T_6 - T_5 = z \cdot \left[\frac{I^a - (r_6 - u \cdot d) \cdot B + (r_6 - r_5) \cdot \left[V - \sum_j D^s \right]}{1 - z} \right]$$

c) $$F_6 - F_5 = I^a - (r_6 - u \cdot d) \cdot B + (r_6 - r_5) \cdot \left[V - \sum_j D^s \right]$$

d) $$P_6 - P_5 = -(r_6 - u \cdot d) \cdot B + (r_6 - r_5) \cdot \left[V - \sum_j D^s \right]$$

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[1] Examples showing the debt coverage effect of normalization versus flow through are provided in Brigham, Eugene F., and James L. Pappas, Liberalized Depreciation and the Cost of Capital, 1970 MSU Public Policy Studies, Institute of Public Utilities, Michigan State University, East Lansing, 1970. Pp. 18—20; and in Linhart, Peter B., Some Analytical Results on Tax Depreciation, The Bell Journal of Economics and Management Science, Vol. 1, No. 1, Spring 1970. Pp. 105—107.

[2] Some commissions explicitly recognize this differential in rate setting. See, for example, Lancaster, Angela A., Tax Normalization for Public Utilities, Office of Regulatory Analysis, Federal Energy Regulatory Commission, Memorandum, February 1978. P. 25; and statements of Charles J. Cicchetti, Chairman of Wisconsin Public Service Commission and Vernon L. Sturgeon, Public Utilities Commission of the State of California, in Hearings before the Committee on Ways and Means, The President's 1978 Tax Reduction and Reform Proposals, House of Representatives, 95th Congress, 2d Session, Part 4 of 9, March 8 and 9, 1978. Pp. 1888—1892.

e) $$R_7 - R_5 = \frac{(I^a - I^n) + (w + z \cdot u \cdot d) \cdot B + (r_7 - r_5) \cdot \left[V - \sum_j D^s\right]}{1 - z}$$

f) $$T_7 - T_5 = z \cdot \left[\frac{(I^a - I^n) + (w + u \cdot d) \cdot B + (r_7 - r_5) \cdot \left[V - \sum_j D^s\right]}{1 - z}\right]$$

g) $$F_7 - F_5 = (I^a - I^n) + (w + u \cdot d) \cdot B + (r_7 - r_5) \cdot \left[V - \sum_j D^s\right]$$

h) $$P_7 - P_5 = (w + u \cdot d) \cdot B + (r_7 - r_5) \cdot \left[V - \sum_j D^s\right]$$

where: r_i = allowed rate of return in case i.

The forms of these equations are exactly the same as those of the earlier relationships (see equations 6m - 6q and 7l - 7p) except for the addition to each expression of the rate of return differential multiplied by the rate base.

Relatively few studies have analyzed capital market differentiation among utilities on the basis of the ratemaking treatment of tax benefits. Some studies have examined price/earnings ratios of utility stocks and the debt coverage ratios of the utilities (assuming different debt coverage ratios lead to different bond ratings which, in turn, lead to different borrowing costs). O'Donnell[1] performs such an analysis and reports that the price earnings ratios for utilities which flow through accelerated depreciation averaged only 95 percent of the P/E ratios of normalization utilities from 1954 through 1966; for the five years prior to 1954 (the year of adoption of accelerated depreciation) the P/E ratios of the flow through utilities had averaged 8 percent **higher** than the ratios of the normalization utilities. O'Donnell does not attempt to translate these P/E ratio observations into estimates of the differential cost of capital to flow through versus normalization utilities. He also reports that during the 1961 to 1966 era the debt coverage ratios of flow through utilities were consistently lower than those of normalization utilities; however, no impact on bond prices could be discerned.

A similar study by Duff and Phelps, Inc., examines P/E ratios from 1960 to 1975 and debt coverage ratios in 1975 for normalization versus flow through utilities.[2] This study also confirms higher P/E ratios and higher debt coverage ratios for normalization utilities. The study ventures the conclusion that a flow through utility would experience an overall cost of capital which is .25 to .50 percentage points higher than that for a normalization utility ("the larger figure would represent those situations where a flow through company has a large percentage of reported earnings from flow through accounting"). This numerical conclusion is merely stated in the report; there is no explicit algorithm for translating the observed P/E ratio and debt coverage ratio differentials into cost of capital differences, nor is there any well developed attempt to control for other factors which may affect the evaluation of the utilities in the capital markets, or to perform the analysis within the context of a market valuation model. In addition, the stated cost of capital differential is based on an assumed overall rate of return which is nearly one-sixth higher than the average rate of return for electric utilities in 1975.

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[1] O'Donnell, John L., Relationships between Reported Earnings and Stock Prices in the Electric Utility Industry, The Accounting Review, January 1965. Pp. 135—143; and O'Donnell, John L., Further Observations on Reported Earnings and Stock Prices, The Accounting Review, July 1968. Pp. 549—553.

[2] Duff and Phelps, Inc., An Investment Evaluation of Normalized Accounting and Construction Work in Progress, March 25, 1977. The study was prepared for the Federal Energy Administration.

At least two studies have employed regression analysis within a cost of capital framework in an attempt to isolate the effect of the regulatory treatment of tax benefits. Brigham and Pappas[1] confirmed that the financial markets require a higher rate of return to compensate for the greater risk and less favorable financial characteristics associated with flow through utilities; however, the numerical results of the study are ambiguous, yielding no firm estimate of the magnitude of the cost of capital differential resulting from the different regulatory treatments. The analysis produced estimates which suggested a "learning curve" effect among equity investors with regard to regulatory treatment of accelerated depreciation. The regression results showed little cost of capital effect in the early years of the tax benefit, suggesting a lack of awareness among investors; thereafter the cost of capital differential seemed to grow steadily, peaking in 1964, and then decline substantially (their analysis ended with 1966 data), suggesting a growing investor awareness of the issue, a temporary overreaction, and then a correcting decrease in the cost of capital differential.

The results of an analysis by Robichek, Higgins, and Kinsman,[2] who used data from the years 1962 to 1970, are even more ambiguous. They derive cost of equity capital estimates within the context of four alternative models, an infinite growth model with and without transaction costs, and a finite horizon model with 5- and 10-year horizons. All of the models produce estimates which imply that the cost of equity capital is lower for flow through utilities than for normalization utilities. The authors remark that, "the economic interpretation of this finding is far from clear." They suggest their results may imply a fundamental difference in risk between flow through and normalization utilities, a misperception on the part of investors, or misspecification in their analytical model.

Brigham and Pappas also study the effect of regulatory treatment on the cost of utility borrowing. They speculate that debt costs may also be higher for the flow through firm, but from their data and analysis they are unable to reject the hypothesis that the risk differential associated with flow through treatment is fully absorbed by equity investors, thus leaving creditors of flow through versus normalization utilities on approximately equal grounds. The authors offer a conceptual model, and refer to the earlier work of O'Donnell regarding debt coverage ratios, to suggest that future studies may reveal an effect on the cost of debt from the alternative regulatory treatments which is masked in their analysis.

Thus, the few studies available on the subject argue that the financial markets differentiate among utilities on the basis of ratemaking treatment of the tax benefits, but have not been successful in precisely defining and measuring the differentiation, particularly in terms of the cost of capital to utilities. Nonetheless, because of the importance of this issue a sensitivity analysis was performed on the applied results in section V using assumed rate of return differentials. The approach is to assume a higher capital cost for flow through utilities of 0.1 percent from 1962 through 1966 (based roughly on the Brigham and Pappas results) which grows uniformly to 0.25 percent in 1976 (based on the Duff and Phelps estimate). Table 7 shows adjustments to the results in section V based on these assumptions.

The results in the table are for normalization electric utilities, and they reflect normalization of both accelerated depreciation and the investment tax credit.[3] The "unadjusted" columns report the estimates from section V of the differences in each item between normalization versus flow through utilities for the two most prevalent forms of normalization: normalization of accelerated depreciation with the deferred tax account excluded from the rate base (case 3) and cost of service normalization of the investment tax credit (case 7). For example, column 1 of Table 7 is the sum of the estimates in column 1 minus column 2 of Table 4, plus column 1 minus column 3 of Table 5. The

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[1] Brigham, Eugene F., and James L. Pappas, Liberalized Depreciation and the Cost of Capital, 1970 MSU Public Utilities Series, Institute of Public Utilities, Michigan State University, East Lansing, 1970. Chapter 5.

[2] Robichek, Alexander A., Robert C. Higgins, and Michael Kinsman, The Effect of Leverage on the Cost of Equity Capital of Electric Utility Firms, The Journal of Finance, May 1973. Pp. 363—364.

[3] All the studies referenced earlier in this subsection refer only to normalization of accelerated depreciation; however, since they do not control for normalization of the ITC, their results regarding the differential cost of capital presumably reflect the normalization of both tax benefits in those cases in which both are normalized.

estimates in section V were based on a model which assumed the rate of return to be the same for normalization and flow through utilities.

The "adjusted" columns of Table 7 show the correlated estimates adjusted to incorporate the assumed cost of capital differentials stated above. The adjustment involves factors accounting for the different rate of return applied to both the rate base and the excluded deferred tax and ITC accounts (see equations 12 above). The rate base is approximated by excluding construction work in progress and accumulated depreciation from total utility plant each year.

TABLE 7

ADJUSTMENT FOR COST OF CAPITAL EFFECT OF ESTIMATES OF IMPACT ON REQUIRED REVENUES, FEDERAL INCOME TAXES, CASH FLOW, AND PROFITS FOR CLASS A AND B ELECTRIC UTILITIES UNDER NORMALIZATION VERSUS FLOW THROUGH TREATMENT, NORMALIZING UTILITIES: 1962—1976
(Millions of Dollars)

Amount by Which Each Item Exceeds Level Which Would Occur under Flow Through Treatment

	Required Revenues		Federal Income Taxes		Cash Flow		Profits	
Year	Unadjusted	Adjusted for Cost of Capital Effect	Unadjusted	Adjusted for Cost of Capital Effect	Unadjusted	Adjusted for Cost of Capital Effect	Unadjusted	Adjusted for Cost of Capital Effect
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1962	$ 183.3	$ 128.7	$ 111.2	$ 82.8	$ 102.6	$ 76.4	$ – 79.4	$ – 105.6
1963	134.8	80.0	81.6	53.1	80.9	54.6	– 84.5	– 110.8
1964	38.5	– 16.2	37.2	9.8	37.2	9.8	– 86.6	– 114.0
1965	23.0	– 31.9	29.6	3.3	32.2	3.7	– 85.6	– 114.1
1966	23.5	– 38.1	29.9	0.3	34.4	2.4	– 81.7	– 113.7
1967	66.2	– 9.9	54.3	17.8	58.8	19.3	– 77.7	– 117.1
1968	159.8	59.9	113.1	60.3	101.2	54.0	– 69.2	– 116.4
1969	187.7	61.8	132.3	65.9	118.3	58.9	– 63.3	– 122.7
1970	127.7	– 28.5	99.2	22.3	102.6	23.3	– 59.3	– 138.7
1971	383.4	190.5	225.2	132.8	244.1	143.8	– 62.4	– 162.7
1972	793.0	570.6	428.6	321.8	464.3	348.6	– 69.1	– 184.8
1973	1,065.3	791.4	570.2	438.7	617.7	475.3	– 75.7	– 218.1
1974	1,510.0	1,177.7	802.7	643.2	869.5	696.7	– 92.4	– 265.2
1975	2,573.6	2,184.3	1,411.4	1,224.5	1,383.2	1,180.7	– 129.0	– 331.5
1976	3,626.8	3,181.1	1,885.5	1,671.6	2,042.7	1,810.9	– 156.3	– 388.1

As expected, the cost of capital adjustment narrows the differences between normalization and flow through treatments, except for profits. With regard to required revenues, the unadjusted data show higher utility rates each year under normalization than under flow through; the difference is slight in the mid-1960's, when normalization of accelerated depreciation yielded lower utility rates (see analysis in section V), and grows substantial in the 1970's, when the utility growth rate accelerated. The estimates adjusted for the assumed cost of capital effect narrow these differences and actually reverse their direction during five years. If the cost of capital assumptions reflected in these calculations are reasonably accurate, normalization of the tax benefits yielded lower electric

utility rates than would have flow through treatment during five of the years between 1964 and 1970. These lower utility rates resulted from the combination of the exclusion of the deferred tax account from the rate base and the lower cost of capital (and allowed rate of return) under normalization. However, even the adjusted estimates of the difference in required revenues between normalization and flow through companies grow rapidly to exceed $3 billion in the 1970's.

The adjusted estimates for the difference in Federal income taxes under the alternative regulatory treatments reveal a similar pattern. In the mid-1960's the estimates indicate normalization and flow through treatments would have produced nearly equal tax payments. In the 1970's, on the other hand, normalization treatment yields substantially higher tax payments. The adjusted cash flow estimates reflect these trends in revenues and tax payments; the estimates imply that when the cost of capital effect is incorporated in the analysis, normalization provided little cash flow benefit to the utilities in the mid-1960's, but the benefit has grown significantly as growth of the utilities has accelerated in the 1970's. In the case of book profits, the cost of capital effect widens the difference between normalization and flow through utilities. Profits are less in the normalization utilities because of the lower reliance on equity capital (because of the higher internal cash flow); the allowance of a higher rate of return for flow through utilities further widens this profit differential. The lower profit attributable to less reliance on equity capital does not decrease the rate of return on equity in the normalization utility; the cost of capital effect obviously does.

These results have important implications. They reveal that if flow through utilities are allowed higher rates of return to compensate for their lower cash flow and higher risk, normalization treatment becomes relatively more attractive to consumers, flow through entails less of a revenue loss for the Treasury, and flow through becomes relatively more attractive to the utilities (the purpose of the rate of return differential). These shifts do not change the basic pattern of the relationships between flow through and normalization—i.e., flow through still yields lower utility rates, tax payments, and cash flow during early years of the tax benefit and during rapid growth years—but may alter the relative advantages of the alternative regulatory treatments over the long term.

This possibility is explored by Zeisel[1] in a series of 100-year simulations examining the sensitivity of the relationships between the present values of utility rates under normalization (with the deferred tax account excluded from the rate base) and flow through treatment of accelerated depreciation to the allowance of a higher rate of return under flow through treatment. Zeisel's simulations assume consumer discount rates higher than the allowed rate of return so that, in the absence of a rate of return differential, flow through treatment will yield utility rates with the lower present value (see development in section VI). He then determines how large a rate of return differential is necessary to equalize the present values of utility rates under the alternative regulatory treatments. The results indicate that relatively small rate of return differentials negate the effect of flow through treatment in yielding utility rates with a lower present value. For example, assuming a 5 percent growth rate, a 40 percent tax rate, 40-year asset life, an 8 percent rate of return for the normalization utility, and a 10 percent consumer discount rate, a .09 percent higher rate of return for the flow through utility will equalize the present values of utility rates under the two regulatory treatments. Higher discount rates and higher utility growth rates increase the rate of return differential required to equalize the utility rate present values. For example, with the same assumptions but a 14 percent discount rate, a .27 percent higher rate of return for the flow through utility is required to equalize the present values of utility rates under the two regulatory treatments. For a 10 percent growth rate, the equalizing rate of return differentials for the discount rates cited above are .15 percent and .28 percent, respectively. The equalizing rate of return differential diminishes with higher allowed rates of return for the normalization utility.

Thus, the differential in allowed rates of return between normalization and flow through utilities is an important determinant of the overall relationships between the alternative regulatory treatments. Unfortunately, at this time it is also an element of the relationship which is insufficiently understood.

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[1] Zeisel, Gerald, The Effects on Utility Rates of Alternative Income Tax Accounting Methods, Massachusetts Accountants for Public Issues, Inc., forthcoming.

C. Differential Growth Rates

The analytical model used in this study compares the financial characteristics of two otherwise identical utilities—i.e., utilities with the same size of plant, levels of investment, and operating costs—under the alternative tax and regulatory policies. As stated at the beginning of section IV, this framework simplifies the analysis considerably, but it also involves the assumption that the tax policies have failed one of their primary legislative functions, at least in the regulated utility industry: to stimulate capital investment. Whether the tax benefits do, in fact, stimulate investment in the public utilities has been the subject of some controversy.

There have been essentially three views expressed regarding the impact of the tax benefits on investment in the regulated industries. One view maintains that accelerated depreciation and the investment tax credit do not stimulate higher levels of investment in the regulated public utilities because the regulatory commissions assure that the investment necessary to provide a high quality of service sufficient to meet the public demand will occur. This view holds that the tax benefits reduce the tax liabilities of the utilities and provide other benefits (depending on the regulatory treatment, either higher cash flow or lower utility rates) but do not stimulate higher levels of capital investment.[1] This position was expressed in a recent article on the investment tax credit as follows:

> Regulated public utilities, on the other hand, will not necessarily increase their investment in assets because of an investment tax credit. By law they are required to provide assets sufficient to provide service for those who demand it and this amount is independent of whether or not the utility can take advantage of the investment tax credit. Thus the provisions in the tax law which insure that the investment tax credit will not be directly passed on to the ratepayers will have no effect on the volume of investment undertaken by utilities, given that additional investment decisions will have to be approved by the regulatory commission which will base its findings on the needs of the ratepayers.[2]

A second viewpoint is that the tax benefits combined with normalization treatment do stimulate capital investment due to the resulting increased cash flow. Industry sources argue that the cash flow resulting from normalization of the tax benefits helps finance a necessary level of capital investment which might otherwise be jeopardized by regulatory lag and a reticence among regulators to allow a sufficient rate of return. Others argue that the cash flow effects of normalizing the tax benefits stimulate investment but believe that this is a disadvantage because investment in the utility industry is already too high. There is a substantial body of literature which suggests that a regulated industry will tend to expand investment beyond the level at which the social benefits from the marginal investment project equal or exceed the societal cost of the project.[3] Some have suggested that the accumulation of deferred taxes under normalization of accelerated depreciation and the investment tax credit exacerbates this problem by stimulating capital investment even further.[4]

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[1] This appears to be the predominant view among State utility commissions; see Gravelle, Jane G., and Douglas N. Jones, Some State Regulatory Commission Views on Increasing the Investment Tax Credit for Utilities: Report and Commentary, in: Current Issues in Electric Utility Rate Setting, National Association of Regulatory Utility Commissioners, April 13, 1976. Pp. 102—112.

[2] Thompson, Howard E., and Jerry J. Weggandt, The Rate-Making Treatment of the Investment Tax Credit for Public Utilities, The Journal of Business, October 1977. Pp. 508—509.

[3] See, for example: Averch, Harvey, and Leland Johnson, Behavior of the Firm under Regulatory Constraint, The American Economic Review, Vol. LII, No. 5, December 1962. Pp. 1052—1069; Wellisz, Stanislaw H., Regulation of Natural Gas Pipeline Companies: An Economic Analysis, Journal of Political Economics, Vol. LXXXI, February 1963. Pp. 30—43; Takayama, Akira, Behavior of the Firm under Regulatory Constraint, The American Economic Review, Vol. LIX, No. 3, June 1969. Pp. 255—260; Spann, Robert M., Rate of Return Regulation and Efficiency in Production: An Empirical Test of the Averch-Johnson Thesis, The Bell Journal of Economics and Management Science, Vol. 5, No. 1, Spring 1974. Pp. 38—52; Courville, Leon, Regulation and Efficiency in the Electric Utility Industry, The Bell Journal of Economics and Management Science, Vol. 5, No. 1, Spring 1974. Pp. 53—74; Boyes, William J., An Empirical Examination of the Averch-Johnson Effect, Economic Inquiry, Vol. XIV, No. 1, March 1976. Pp. 25—35; and the overview and analysis of the issue in Kahn, Alfred E., The Economics of Regulation: Principles and Institutions, Vol. 2, John Wiley & Sons, Inc., New York, 1971. Pp. 49—59, and Pp. 106—112.

[4] See, for example: Batinovich, Robert, A Sensible Substitute for the Federal Income Tax on Utilities, Public Utilities Fortnightly, July 21, 1977. Pp. 3—7.

It should be noted that if normalization does not stimulate capital investment, normalization utilities will not necessarily have larger generating capacities than otherwise. The investment effect could result in more capital intensive technologies being used for the same generating capacity, for example, more base load versus peaking equipment or a preference for nuclear versus fossil fueled plants. This effect, of course, would be very difficult to detect. It would require comparing a utility's capital investment projects to an independently determined "optimum" investment mix for that utility ignoring the effects of normalization.

The third view regarding the impact of the tax benefits on capital investment in the regulated utilities is that higher investment will be stimulated by higher demand for the utility's services if the tax benefits are flowed through via reduced utility rates. This view was expressed early in the discussions of the investment tax credit[1] but seems to have lost favor in more recent years.

The careful research which would be necessary to determine which of these viewpoints is correct has not been performed.[2] However, there is some evidence that whichever view is correct, any differential growth rates induced by the tax benefits and regulatory policies are not likely to significantly affect the relationships between normalization and flow through treatments. One of the dynamic simulation studies discussed in section VI examined the impact of the third view expressed above on the relationship between normalization and flow through treatment. In one simulation Brigham and Nantell assumed that assets of each utility grow in proportion to the demand for the utility's services, and that demands for services from the normalization and flow through utilities grow at rates related to the percentage differences between the firms' utility rates and that for a company which uses straight line depreciation.[3] Therefore, in this simulation the flow through utility grew more rapidly than the normalization company because it had lower utility rates. The authors' conclusion regarding adding price elasticity to the analysis, and the resulting different investment paths, levels of depreciation, operating costs, taxes, etc., "is that, for the amount of price elasticity faced by most utility companies, this factor does not materially affect the choice between normalization and flow through." It is not implausible that this conclusion may also apply to the second view expressed above, the case in which investment is stimulated by the cash flow effects of the tax benefits combined with normalization.

These results are important because virtually all of the studies which have analyzed the impact of the alternative regulatory treatments, including this study, have assumed, explicitly or implicitly, that the tax benefits did not stimulate higher investment in public utilities, or if they did, the effect was inconsequential and could be ignored. If this assumption is inaccurate, then the analytical technique employed clearly requires modification to compare utilities which grow at different rates under the alternative policies. Such analysis would be very complicated using the techniques employed in this study and, therefore, would best be reserved for the dynamic simulation techniques of the studies summarized in section VI.

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[1] See the statement of Philip Sporn, quoted in section II, C.

[2] This is not to say, however, that the effects of tax benefits on investment in general have not been analyzed. See, for example, Hall, Robert E., and Dale Jorgenson, Tax Policy and Investment Behavior, American Economic Review, June 1967. Pp. 391—414; Fromm, Gary, Ed., Tax Incentives and Capital Spending, Brookings Institution, 1971; Aaron, Henry, Frank E. Russek, and Neil M. Singer, Tax Changes and the Composition of Fixed Investment: An Aggregative Simulation, Review of Economics and Statistics, November 1972. Pp. 343—356; Eisner, Robert, Tax Incentives for Investment, National Tax Journal, September 1973, Pp. 397—401; and Brimmer, Andrew, and Allen Sinai, The Effects of Tax Policy on Capital Formation, Corporate Liquidity and the Availability of Investible Funds: A Simulation Study, Journal of Finance, May 1976. Pp. 288—308.

[3] Brigham, Eugene F., and Timothy J. Nantell, Normalization Versus Flow Through for Utility Companies Using Liberalized Tax Depreciation, The Accounting Review, July 1974. Pp. 476—447.

VIII. An Evaluation

Sections II through VII of this paper have traced the legislative development of accelerated depreciation and the investment tax credit and their ratemaking treatment in the regulated utility industries and have assessed their economic effects on consumers, the utilities, and on Treasury tax collections. This section offers an evaluation of the alternative ratemaking treatments of the tax benefits from an economic perspective.[1] However, prior to the evaluation it is necessary to discuss the appropriate forms of normalization.

A. Economic Normalization

As noted throughout the presentation in the previous six sections, there are two forms of normalization of both accelerated depreciation and the investment tax credit, and the two normalization forms yield different economic effects. The question arises as to which form of normalization, if either, is the appropriate way to normalize the tax benefits.

One of the purposes of regulation is to force the regulated industries, to the extent possible given the peculiarities of public utility economics, to emulate the economic results of a competitive industry. To this extent it is relevant to consider the economic effects of accelerated depreciation and the investment tax credit on unregulated industries. Accelerated depreciation amounts to an interest-free loan from the Treasury to the benefitting company; the principal of the loan is received in installments during the early years of the useful life of the company's assets as accelerated depreciation exceeds straight line depreciation and is paid back in the later years when accelerated depreciation is less than straight line. The value of this interest-free loan to the company is the imputed "interest" on the outstanding principal of the "loan" over the life of the related assets. The receipt of this interest-free loan reduces the cost of owning the company's capital assets by the amount of the imputed interest. In a competitive industry, competition will force the company to pass this capital cost reduction on to customers in lower prices. This then is the result which normalization of accelerated depreciation should achieve in the regulated industries.

Normalization of accelerated depreciation with the deferred tax account excluded from the rate base (case 3) does achieve this result. The exclusion of the deferred tax account from the rate base accomplishes the objective of passing on to customers the imputed interest on the interest-free

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[1] The evaluation does not incorporate other policy implications of the issue, for example energy policy aspects or the concern over Federal intervention into State utility regulation. Also not examined is whether utilities should be excluded from receiving the tax benefits. Providing the tax benefits to utilities probably dilutes their effectiveness as investment stimulants (see the discussion in section VII, C). However, denying the tax benefits to utilities would require the decision that the effect of the tax provisions in helping to finance capital investment (through tax savings) is unimportant. It would also require a lack of concern about tax-induced changes in relative prices between utility services and other goods and services in the economy. Finally, to be consistent, denying the tax benefits to utilities may also require disallowance for other industries where tax-induced investment is unlikely (e.g., declining industries).

Treasury loan through lower utility rates.[1] This result is clearly not achieved by the form of normalizing accelerated depreciation which does not exclude the deferred tax account from the rate base (case 4). Under this form of normalizing accelerated depreciation, utility rates are actually higher than if accelerated depreciation did not exist,[2] surely a perverse result by any standard, and an outcome inconsistent with the effects under competitive market conditions. For these reasons, normalization of accelerated depreciation with the deferred tax account excluded from the rate base will be regarded as the appropriate form and will hereafter be referred to as "economic normalization" of accelerated depreciation.

Unlike accelerated depreciation, the investment tax credit does not represent an interest-free loan to the receiving company but is instead a grant. The grant is received when new capital investment is made and, in effect, reduces the cost of the investment to the company. Thus, the ITC has the same impact on the company (ignoring carryovers) as if it had received a price reduction on the capital assets it purchases. A price reduction on capital assets will have two effects on a firm: it decreases the amount of investment capital required by the firm and thereby decreases the necessary amount of return to capital, and also reduces the subsequent amount of annual depreciation. In a competitive market these influences will be reflected in lower prices for the firm's output, and this is the result which should be emulated in the regulated industries.

However, this result is not permitted by the methods of normalizing the investment tax credit which are presently allowed by the tax code. Present law permits the recognition of one or the other of the effects of the investment tax credit on a regulated company, but not both of the effects. Rate base normalization (case 6) recognizes the lower amount of invested capital and required return to capital through the mechanism of exclusion of the deferred ITC's from the rate base but disallows a reduction of annual depreciation charges to reflect the lower cost capital assets.[3] Cost of service normalization (case 7) allows an annual reduction in cost of service charges (the reduction is in the form of a ratable flow through of the reduced tax charge but accomplishes the same thing as if depreciation charges were reduced to reflect the lower cost assets) but forbids any reduction in the rate base to recognize the lower amount of invested capital and required return to capital. In fact, under cost of service normalization not only is a reduction in the rate base forbidden, but the equity rate of return, rather than the overall rate of return, must be allowed on the accumulated deferred investment tax credits.[4] Therefore, neither allowed form of normalization of the investment tax credit in the regulated industries is appropriate from an economic perspective. "Economic normalization" of the ITC would require both exclusion of the accumulated deferred ITC's from the rate base and adjustment of annual depreciation charges to reflect the lower cost assets. Such a form of normalization of the ITC can be represented by the utility equation system developed in section IV as follows:

13 a) $$R_{13} = r\cdot\left[V - \sum_j D^s\right] - B + \left[D^s - I^n\right] + C + T_{13} + I^a$$

b) $$y_{13} = R_{13} - D^s - C - i_m$$

c) $$T_{13} = z\cdot y_{13} - I^a$$

d) $$F_{13} = y_{13} - T_{13} + D^s$$

e) $$P_{13} = y_{13} - T_{13} - (I^a - I^n)$$

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[1] See the more complete discussion of this effect in section VI.

[2] See sections IV and V.

[3] The outcome achieved by rate base normalization of the ITC is exactly parallel to that obtained by normalization of accelerated depreciation with the deferred tax account excluded from the rate base (see equations 3h-3l, 6h-6l). However, the results should not be parallel; accelerated depreciation is an interest-free loan whereas the investment tax credit is a grant.

[4] Cost of service normalization often yields the same perverse results as normalization of accelerated depreciation without excluding the deferred tax account from the rate base: utility rates are higher with the tax benefit than without.

This system of equations is the same as for rate base normalization (see equations 6a-6e) except for the I^n term subtracted from the depreciation charge in the equation for required revenues, and the I^n term which appears in the equation for book profits as a result (the profits equation is the same as for cost of service normalization—see equation 7e—because of the similarities of the adjustments to the cost of service accounts to reflect the ITC). Just as for the cases in section IV, the utility equations above may be used to derive the relationships between the financial variables for economic normalization of the ITC and case 1, the case of a utility which does not receive either accelerated depreciation or the investment tax credit. Such a derivation yields the following results:

13 f) $$R_1 - R_{13} = \frac{I^n + (r - z \cdot u \cdot d) \cdot B}{1 - z}$$

g) $$y_1 - y_{13} = \frac{I^n + (r - u \cdot d) \cdot B}{1 - z}$$

h) $$T_1 - T_{13} = I^a + \frac{z \cdot [I^n + (r - u \cdot d) \cdot B]}{1 - z}$$

i) $$F_1 - F_{13} = (r - u \cdot d) \cdot B - (I^a - I^n)$$

j) $$P_1 - P_{13} = (r - u \cdot d) \cdot B$$

These results are obviously very similar to those for rate base normalization (see equations 6h to 6l) except for the addition of the I^n term to each of the relationships but the profit equation. Thus, economic normalization of the ITC would yield utility rates, tax payments, and cash flow of the utilities all somewhat lower than produced by rate base normalization, and profits equal to that under rate base normalization. The relationships between economic normalization of the ITC, flow through treatment, and cost of service normalization can be derived using the above equations but will be omitted because the relationships are obvious from the similarities of economic normalization to rate base normalization.[1]

Thus, from an economic perspective the appropriate methods of normalization are: for accelerated depreciation, the form which involves excluding the deferred tax account from the rate base; and for the investment tax credit, a method which essentially involves combining the two presently allowed forms of normalization.

B. The Evaluation

Given all of the accumulated evidence, which ratemaking treatment of the tax benefits is the most appropriate from an economic perspective, normalization or flow through? Depending on the criteria used for judgment and the circumstances under which the regulation will occur, a case can be made for both regulatory procedures (as should be expected since the debate has lasted so long). However, based on the analysis in the preceding six sections, the case for flow through treatment appears to be the more limited and risky, and therefore weaker. Because the argument for flow through is more limited, it will be stated briefly at the outset, and then discussed more extensively. The argument can be made in a stronger version or a weaker version as follows:

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[1] The equations are the same as those for the relationships involving rate base normalization except for the addition of the I^n term to the numerator of all but the profits equations.

Flow through argument: stronger version

1. The basic argument for flow through is premised on the belief that the appropriate criterion for choosing between flow through and normalization is the minimization of utility rates. This criterion must be believed to be paramount to treating the tax benefits in a manner consistent with the intent of Congress in enacting the benefits, to accurately portraying the impact of the tax benefits on the financial conditions of the utilities, and to emulating the effects of the tax benefits in competitive markets.

2. The stronger argument for flow through treatment is premised on the belief that the nominal growth rate of the utility will exceed (r – zud) indefinitely.

3. The argument presumes that the tax benefits which are to be flowed through will not be repealed or reduced in the future.

4. The argument assumes that if it is necessary to allow a higher rate of return under flow through treatment this will not fully negate the effect of flow through in yielding lower utility rates.

Flow through argument: weaker version

The weaker version of the argument for flow through treatment comes into play if one is unwilling to assume either point 2 or point 3 (or both) in the stronger version of the argument. In that case the following points are added to points 1 and 4 above:

5. The consumer discount rate must be thought to exceed (r – zud).[1]

6. The avoidance of subsidizing one group of utility customers (the present population) at the expense of another group (the future population of utility customers) must be regarded as a relatively unimportant goal in ratemaking.

If one is unwilling to embrace all of the premises of either the stronger case or the weaker case for flow through, then based on the criteria of this evaluation, normalization is the appropriate regulatory treatment.

The commitment to utility rate minimization as the predominant regulatory goal is essential to the case for flow through because the other potential criteria employed in this study for judging the alternative treatments favor normalization. The contention that normalization accurately portrays the impact of the tax benefits on the utility and achieves the economic effects which would be expected in competitive markets is explained above in the subsection on "economic normalization." Normalization treatment is also required for consistency with the intent of Congress in adopting the tax benefits.[2] The detailed legislative history in section II reveals that the tax benefits were not developed with a single theme, and there has been some Congressional vacillation regarding their purpose and intended application. It is therefore possible to locate isolated passages in the legislative record which seem to support opposite conclusions. However, it is impossible to review the legislative history in its entirety without drawing the conclusion that Congress intended the tax benefits to reduce the after-tax costs associated with the acquisition of capital assets, and that the resulting tax savings should be available for financing further capital investment. Flow through treatment of the tax benefits is inconsistent with this goal. To argue that flow through treatment is not inconsistent with Congressional intent in adopting the tax provisions requires maintaining that Congress did not understand the distinction between passing an overall tax rate reduction and adopting tax expenditures designed specifically to subsidize the acquisition of capital assets, despite considerable evidence to the contrary.

It should also be observed that price minimization is not the standard criterion for judging appropriate accounting or ratemaking treatment. If it were, several other financial transactions and business activities would be accounted for quite differently. For example, taking all depreciation

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[1] Actually, the discount rate can be slightly less than (r – zud) if premise 2 is not assumed but premise 3 is.

[2] It is almost tautological to say that normalization treatment is consistent with **present** Congressional intent since normalization is **required** by present law except in those cases where flow through treatment was in effect in 1969.

charges only when a capital asset is actually removed from service would have a similar effect on utility rates as flow through treatment of the tax benefits (and could be justified by a similar logic). It would also distort the financial condition of the utilities and result in a mismatching of income and the expenses associated with producing it and is therefore inappropriate treatment.

The stronger argument for flow through treatment is also premised on the assumptions that the utility growth rate will exceed (r – zud) indefinitely, and that the tax benefits will remain in effect indefinitely. Obviously there is some risk associated with these assumptions; indefinitely is a long time. While the immediate outlook may be for rapid growth of most utilities (since it is the nominal growth rate which determines these relationships, inflation will nearly insure sufficient growth in the near term) the outlook 25 to 50 years or more into the future must be less certain. It also appears that current trends are toward increasing the tax benefits. However, the investment tax credit has been suspended once and repealed once in its 16-year history, and the Ways and Means Committee voted in 1969 to disallow accelerated depreciation on utility property. Current trends can reverse. Nevertheless, if these assumptions regarding the utility growth rate and tax policy hold true, flow through treatment will yield lower utility rates than normalization every year indefinitely into the future. This result will obtain so long as the lower utility rates under flow through treatment are not offset by a higher rate of return for the flow through utility, which is the fourth premise of the stronger argument for flow through treatment. Thus, the stronger argument for flow through treatment essentially involves establishing the conditions under which flow through will always yield lower utility rates than normalization, and arguing that minimizing utility rates is the appropriate criterion for judging between the alternative regulatory treatments.

The weaker case for flow through treatment does not make the assumptions which guarantee that flow through will always yield lower utility rates than normalization. Rather, it relies on the argument that so long as the consumer discount rate is higher than (r – zud), then the present value of future utility rates will be lower under flow through treatment. In the absence of this assumption, advocacy of flow through becomes purely a pleading for low present utility rates at the expense of high future rates which may more than offset the current benefits even in a present value sense, which is surely untenable. The weaker case for flow through treatment must also be premised on the belief that avoiding intergenerational transfers is a relatively unimportant goal in utility ratemaking, because even if the present value of utility rates is lower under these assumptions, present utility customers will be subsidized at the expense of future customers.

The argument for normalization treatment is essentially the obverse of what has been said above. Normalization is consistent with Congressional intent in enacting the tax benefits, it accurately portrays the impact of the tax benefits on the financial condition of the utilities, and it achieves the same economic results as would be achieved in a competitive market. The argument for normalization involves deemphasizing the effect on utility rates of the alternative ratemaking treatments in favor of the aforementioned objectives.[1] The argument does not depend on assumptions regarding the utility growth rate, the continuance of tax policies, or relative unconcern about intergenerational subsidies, because normalization—economic normalization, that is—represents appropriate treatment of the tax benefits on a year-by-year basis, providing utility customers with reduced utility rates which accurately reflect the decreased costs of owning the utility company's capital assets. Finally, the argument for normalization treatment does not require knowledge of the consumer discount rate or about the rate of return differential between normalization and flow through utilities.

As a final note, there is one other argument that is frequently used to justify flow through ratemaking treatment which does not fit neatly into the above framework. This is the argument that accelerated depreciation really amounts to a permanent forgiveness of tax, not a tax deferral, and since there is no deferred tax liability there is no justification for a deferred tax account. This argument is based on the observation that if the firm does not decrease in size, its deferred tax account will grow to a certain size and never diminish; and if the firm grows continuously, its deferred tax

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[1] However, unless at least conditions 4 and 5 in the argument for flow through are met, normalization will also yield lower utility rates, in present value terms.

account will do likewise. The conclusion is drawn that the deferred taxes are never, in fact, paid, and so there is no need to provide for them in a deferred tax account.

This argument is largely one of semantics. Taxes deferred because of accelerated depreciation are, of course, eventually paid. However, in a growing firm, when the previously deferred taxes come due new larger tax deferrals are being received; thus, the deferred tax account grows rather than shrinks. This may create the casual impression that the taxes are deferred forever and never paid. If this were really the case, however, the deferred tax account would grow even more rapidly, its growth being undiminished by the repayment of previously deferred taxes. The deferred tax account continues to grow despite repayments just as any account of items which continuously roll over—accounts payable, accounts receivable, outstanding loan balances, etc.—will grow in a growing firm.

Of course, with the investment tax credit there is no deferred tax liability, and it is in this case that the defects in the "continuous deferral" argument are the most visible. The purpose of accounting procedures and of utility ratemaking procedures is to accurately reflect the impact of transactions on the financial condition of the utility. The investment tax credit does not represent a tax deferral, but it is a tax benefit intrinsically associated with the acquisition of capital assets and designed to reduce the capital costs of owning those assets. The question then is whether the tax benefit should be treated in the accounting system as if it were a one-year reduction in the tax rate, or a reduction in the effective cost of a capital asset which should be amortized over the life of the asset. Clearly for accurate reporting and ratemaking it should be reported as the latter, tax deferral or no. Seen in this light, the accumulated deferred investment tax credit and the deferred tax account are mechanisms for accurately reflecting the economic impact of these tax benefits on the utility companies, regardless of the existence or non-existence of deferred taxes.

The "continuous deferral" argument is sometimes advanced in such a way as to imply that so long as the tax payments "continue to be deferred," utility rates will be higher under normalization than they would be under flow through. However, there is no necessary relationship between the "continuous deferral" of taxes and utility rates. The conditions under which utility rates will be lower under flow through treatment are specified above under the stronger and weaker versions of the supporting case for flow through treatment. These conditions are not equivalent to the conditions under which taxes will be "continuously deferred."

A Glossary of Terms and Symbols

Subscripts refer to the following cases:

1. No accelerated depreciation or investment tax credit.
2. Accelerated depreciation; flow through treatment.
3. Accelerated depreciation; normalization; A excluded from rate base.
4. Accelerated depreciation; normalization; A not excluded from rate base.
5. Investment tax credit; flow through treatment.
6. Investment tax credit; rate base normalization (option 1).
7. Investment tax credit; cost of service normalization (option 2).
13. Investment tax credit; "economic normalization."

Symbols are as follows:

A = the deferred tax account
α = asset life
B = accumulated deferred investment tax credits
C = operating costs (except interest and income taxes)
D^a = amount of accelerated depreciation
D^s = amount of straight line depreciation
d = portion of assets financed by debt
F = cash flow
I^a = actual amount of investment tax credit
I^n = normalized amount of investment tax credit
i = interest expense
i_m = interest expense under normalization of investment tax credit
i_n = interest expense under normalization of accelerated depreciation
P = book profits
R = allowed or required revenue of utility
r = allowed rate of return
r_e = rate of return on common equity
T = Federal income tax
u = interest rate paid on debt
V = average gross value of assets
w = differential between rate of return on common equity and overall rate of return
y = taxable income
z = Federal income tax rate (assumed to be flat rate)