ANALYSIS OF LONG-TERM REVENUE IMPACTS OF CORPORATE AND GENERAL BUSINESS PROVISIONS IN THE HOUSE AND SENATE FINANCE COMMITTEE TAX REFORM BILLS

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INTRODUCTION AND SUMMARY

A major issue in the discussion of tax reform proposals is whether they are "revenue neutral." Revenue neutrality is generally defined to mean that a proposed tax system is expected to produce the same total federal revenue as the present one during the first five years it is in effect. Over a longer period, however, the results may be different.

Last year a Congressional Budget Office staff working paper showed that for a major change in the treatment of depreciation, particularly one which would combine longer tax lives with inflation indexing of deductions, the long-term revenue effects could be quite different from those shown for the first five years.1/ Fifteen-year revenue estimates were provided for the four major corporate provisions in the President's tax reform proposals of May 1985: the depreciation changes, repeal of the investment tax credit (ITC), the corporate rate reduction, and the partial dividends-paid deduction. The net effect of the four provisions would have been a long-run reduction in annual corporate tax receipts equal to about 0.2 percent of GNP, even though the reduction averaged less than 0.1 percent of GNP during the first five years and was approximately zero in the fifth year. The long-term revenue loss was caused primarily by the indexation of depreciation interacting with longer tax lives for equipment and (especially) structures. There was no indication that other provisions of the President's proposals would offset enough of the long-term revenue loss from the depreciation provisions to make the total proposal revenue neutral.

Similar concerns have been expressed about the Tax Reform Bill passed by the House of Representatives on December 17, 1985 (H.R. 3838), and the alternative provisions reported by the Senate Committee on Finance on May 6, 1986. These also contain depreciation provisions for which the long term revenue effects might be expected to differ from the effects in the first five years. For these depreciation proposals the twenty-year revenue gain is expected to be greater than in the first five years (both absolutely and relative to GNP), because the lengthening of tax lives

1. Analysis of Long-term Revenue Impacts of the President's Tax Reform Plan, June 1985.

for structures, which would dominate revenue effects after the first five years, would not be offset by indexing.2/

Section One of this paper estimates the combined twenty-year revenue effect of the three general corporate provisions.3/ These would result in a long-term corporate revenue increase under the House bill, and a smaller long-term increase under the Senate bill. For both proposals, the long term revenue effect of the three general corporate provisions would be greater than the average over the first five years. With a long-term revenue increase from the general corporate provisions, neither proposal would be expected to lose revenue in the long-term, unless the other base-broadening and industry-specific corporate proposals raised a significantly smaller share of GNP in the long term than in the first five years. This possibility is discussed in Section Two, which concludes that such long-term losses are unlikely.

Section Three examines the economic assumptions underlying the revenue estimates. It tests the effects of assuming higher or lower rates of economic growth over the 20-year period and concludes that under reasonable economic assumptions the long-term revenue effects of the three general corporate provisions of both tax proposals would still be positive.

SECTION ONE: REVENUE EFFECTS OF THREE GENERAL CORPORATE TAX PROVISIONS

This section provides CBO's estimates of the pattern of revenue effects over the first 20 years for the general corporate provisions of the House tax reform bill and the Senate Finance Committee proposal. The methodology and economic assumptions used to produce these estimates are described in the appendix.

Description of the Provisions

Because the purpose of these estimates is to focus on the long-term revenue implications of major changes in corporate taxes, the depreciation systems assumed for these revenue projections are

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2. Beginning in the third year, the House bill would index depreciation deductions, but only when inflation exceeded 5 percent, and then only for [redacted] half of the inflation over 5 percent.

3. The ITC repeal, corporate tax rate reduction, and depreciation changes. The proposed deduction for dividends paid no longer exists in the Senate Finance Committee Bill, and is no longer a major provision of the House Bill. (It was reduced to a 10% deduction, phased in over 10 years.)

based on the House and Senate Finance Committee plans, but do not include all the details, or the precise timing, of the actual legislative proposals. As currently drafted, the depreciation system in the House proposal would apply to investments made beginning January 1, 1986, while that in the Senate proposal would not begin until 1987. For this analysis they are both assumed to begin January 1, 1987. Both present law and the proposed depreciation systems allow taxpayers to choose nonincentive alternatives to the incentive depreciation systems. While these alternatives are extremely important to many individual taxpayers, assumptions about the extent to which they may be used are not crucial to the long-term pattern of revenue effects, and no attempt has been made to include them in the estimates presented here.

These estimates also do not include the effects of the various special provisions included in the general category of transition rules. Transition rules that are intended to ease the transition to a new system by phasing in some of its provisions, or by grandfathering specific activities for which commitments were made before passage of the new system, would generally reduce the revenues collected under the new system during the early years. They should not have a significant long-run effect. Industry-specific "transition rules" that might have long-run revenue impacts should be considered separately, along with the other industry-specific corporate provisions in these proposals.

The general corporate provisions on which the long run revenue estimates in this paper are based are described below:

Present Law. The maximum corporate income tax rate is 46 percent. Under the Accelerated Cost Recovery System (ACRS), depreciable capital investment is grouped into six broad classes. Equipment is classified as 3-,5-,10-,or 15-year recovery property, depreciated at 150 percent declining balance switching to straight-line, and eligible for a credit against taxes of 10 percent for 5-,10-, or 15-year equipment, or 6 percent for 3-year equipment. The depreciable basis of equipment is reduced by one-half of the credit for which it is eligible (the half-basis adjustment). Most real property is depreciated over 19 years, either at 175 percent declining balance or straight-line (which avoids recapture when the property is sold). Low-income residential property is depreciated at 200 percent declining balance over 15 years.

H.R. 3838 as Passed by the House. The House tax reform bill would repeal the present Investment Tax Credit (ITC), reduce the maximum corporate income tax rate to 36 percent, and replace ACRS with an Incentive Depreciation System (IDS). IDS would group all depreciable property in 10 depreciation classes, primarily according to

their ADR midpoint lives.4/ The first nine classes (equipment, utility investment, and low income housing) would be depreciated using 200 percent declining balance switching to straight-line, over lives that approximate the midpoint lives of the shortest-lived assets in each class, and would generally be longer than the three equipment classes in present law. Cars and light trucks would be placed in the 5-year class, despite their shorter ADR midpoint life. The tenth class, for real property and very long-lived utility investments, would use straight-line over 30 years.

Senate Finance Committee Substitute. The Senate Finance proposal would repeal the ITC, lower the maximum corporate income tax rate to 33 percent, and modify ACRS. Depreciation would generally be made more favorable for equipment, and less for structures. Depreciation for equipment in the 5- and 10-year classes would be accelerated to 200 percent declining balance. Depreciation for cars, light trucks, and semiconductor manufacturing equipment in the 3-year class would be slowed to straight-line. Some relatively long-lived property would be moved from the 5- to the 10-year class, and some from the 10- to the 15-year class. For all classes the half-year convention would be applied at the end of the depreciable life as well as the beginning, lengthening each class by one-half year. Residential real property would use straight-line over 27 1/2 years. Nonresidential real property would use straight-line over 31 1/2 years. Research and experimentation investment would be placed in the 5-year class through 1989, and in the 3-year class (with 150 percent declining balance) thereafter.

Changes in Annual Depreciation Deductions Resulting from Proposals

Estimates of changes in annual depreciation deductions under both bills are discussed in Table 1. The numbers are for deductions from taxable income, so that a negative number means a positive change in the corporate tax base. An increase in the corporate tax base will increase corporate tax revenues by a lesser amount, depending on the corporate tax rate. Under the House bill annual depreciation deductions would be reduced in every year, with the reductions reaching a peak share of GNP in 1991, declining slightly, and then rising. Under the Senate Finance bill annual depreciation deductions would be increased through 1989, and reduced in subsequent years.

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4. The Asset Depreciation Range (ADR) system in effect before 1981 specified midpoint tax lives for narrowly defined classes of equipment, based on estimates of their useful lives.

TABLE 1. CHANGES IN DEPRECIATION DEDUCTIONS RESULTING FROM PROPOSED DEPRECIATION SYSTEMS (By calendar year, in billions of dollars)*

	House Bill				Senate Finance Committee Bill			
	Equipment	Structures	Total	Total As Percent of GNP	Equipment	Structures	Total	Total As Percent of GNP
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	-1.3	-9.1	-10.4	-0.2	8.7	-8.6	0.2	0.0
1988	5.1	-20.7	-15.6	-0.3	32.6	-19.1	13.5	0.3
1989	-16.8	-25.7	-42.5	-0.8	30.7	-23.1	7.7	0.1
1990	-28.3	-30.5	-58.8	-1.0	24.3	-26.8	-2.5	-0.0
1991	-42.1	-35.4	-77.4	-1.3	10.3	-30.7	-20.4	-0.3
1992	-34.7	-40.0	-74.8	-1.1	25.1	-34.8	-9.7	-0.1
1993	-26.8	-45.2	-72.0	-1.0	26.2	-39.6	-13.4	-0.2
1994	-21.2	-49.6	-70.8	-0.9	25.1	-43.4	-18.3	-0.2
1995	-14.7	-54.6	-69.3	-0.9	25.4	-47.8	-22.4	-0.3
1996	-7.2	-60.8	-68.0	-0.8	27.3	-53.1	-25.8	-0.3
1997	-5.0	-67.0	-72.1	-0.8	29.6	-58.2	-28.6	-0.3
1998	-3.0	-73.8	-76.8	-0.8	31.6	-63.7	-32.1	-0.3
1999	-1.1	-81.3	-82.3	-0.8	33.8	-69.6	-35.8	-0.3
2000	-0.4	-89.3	-89.7	-0.8	36.1	-76.0	-39.9	-0.4
2001	0.2	-98.6	-98.4	-0.8	38.6	-83.5	-44.9	-0.4
2002	0.8	-107.8	-107.0	-0.8	41.2	-92.8	-51.6	-0.4
2003	0.9	-122.6	-121.7	-0.9	44.0	-108.0	-63.9	-0.5
2004	0.9	-138.5	-137.6	-0.9	47.1	-124.2	-77.2	-0.5
2005	1.0	-157.7	-156.7	-1.0	50.3	-143.8	-93.5	-0.6

SOURCE: Congressional Budget Office.

* A reduction (-) in depreciation deductions increases income subject to tax.

Without indexing, total depreciation deductions on any investment cannot exceed 100 percent of the initial cost of the investment good. For a particular good, therefore, differences in annual depreciation deductions are due entirely to timing, or, with an ITC basis adjustment, to the size of the ITC 5/. When aggregate investment grows with the rest of the economy, however, these timing differences for particular goods are combined with growth in the nominal value of investment for which depreciation is claimed, leading to the results in Table 1. Because equipment is always depreciated faster than structures, changes in equipment depreciation conventions generally outweigh changes in structures depreciation for the first few years after any change. Thereafter, however, the level of aggregate depreciation is increasingly determined by the treatment of structures, because the number of vintages of structures being depreciated continues to grow, long after the number of vintages of equipment still being depreciated has stabilized. Once the number of vintages of structures also stabilizes, depreciation deductions grow at the same rate as investment, unless the mix of investment changes significantly.

The small number of asset classes under ACRS, and the preponderance of 5-year equipment (more than 80 percent of total equipment), create a very distinctive pattern of depreciation deductions. For investments made after 1986, current law ACRS deductions will peak as a share of GNP in 1991, because that is the first year that five vintages of post-1986 5-year equipment will be depreciated. The pattern of changes in depreciation deductions resulting from a change from current law to another system is the result of the interaction of the pattern of deductions under the new system with this distinctive ACRS pattern.

Table 1 shows the changes from present law in annual corporate depreciation deductions that would result from the House Bill's IDS or the Senate Finance Committee's proposed modifications to ACRS, assuming that each change was instituted for investments made after January 1, 1987, with no transition rules.

The combination of 200 percent declining balance and no basis adjustment would make IDS deductions for equipment slightly larger than ACRS deductions the second year. The longer average tax lives of IDS would cause deductions to build more slowly between 1989 and 1991 than under ACRS. In subsequent years, however, IDS deductions for equipment would continue to increase until by 2001 equipment

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5. With the half-basis adjustment for the ITC under present law, depreciation deductions actually total 95 percent of initial cost, so total depreciation under a system with no ITC will eventually exceed present law depreciation even without indexing. In the estimates presented here, the change in depreciable basis caused by ITC repeal is included in the estimates of depreciation changes.

deductions would be slightly larger than under ACRS (because of the absence of a basis adjustment). Depreciation deductions for structures would be smaller under IDS than under ACRS in each year. As a result of these different patterns for equipment and structures, IDS would reduce total depreciation deductions by increasing amounts (and shares of GNP) through the first five years, by declining amounts for about the next five years, and after that by gradually increasing amounts.6/

Under the revisions to ACRS proposed by the Senate Finance Committee, the additional equipment deductions would peak in the second year because of the change to 200 percent declining balance for most equipment, and the absence of the basis adjustment. The additional depreciation deductions for equipment would outweigh the reductions in depreciation for structures in the years 1988 and 1989, and would approximately balance in 1990. Under the Senate Finance bill the ACRS five-year peak would move to the sixth year (because the five-year class would be stretched out to 5 1/2 years). As a result, in 1991 the reduced deductions for structures would significantly outweigh the additional deductions for equipment. Subsequently, the increasing reduction in depreciation for structures would reduce total depreciation deductions by growing amounts (both in level and in share of GNP). Depreciation deductions for structures would not be reduced as much by the Senate Finance proposal as by the House bill, because tax lives for residential real property and utility structures treated as equipment by the tax system would not be lengthened as much.

Revenue Effects of the Depreciation Changes. Table 2 shows the effects on federal unified budget revenues of the depreciation changes shown in Table 1. These revenue effects are calculated using the effective rate on depreciation deductions at present law statutory tax rates, and under the rates proposed by the House bill and the Finance Committee bill. They include the revenue effect of the removal of the ITC basis adjustment (as a result of the repeal of the ITC), but do not include the direct revenue effects of ITC repeal. Either before or after rate reductions, the revenue effects follow the depreciation changes, allowing for normal lags from corporate profits to unified budget corporate tax receipts.

Revenue Effects of the Three General Corporate Provisions. Table 3 shows the combined revenue effects of the three general corporate provisions in the House bill and the Finance Committee bill -- the depreciation changes, the rate changes, and ITC repeal. These estimates are only illustrative. They are similar, but are not

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6. For investments made after 1986, the year 2005 would be the peak year for ACRS depreciation of 19-year structures, so for subsequent years the pattern of depreciation changes for structures would look like a stretched out version of the 1992 forward pattern for equipment.

TABLE 2. CORPORATE REVENUE EFFECT OF PROPOSED DEPRECIATION SYSTEMS *
(By fiscal year, in billions of dollars)

	House Bill				Senate Finance Committee Bill			
	Before Rate Reduction		After Rate Reduction		Before Rate Reduction		After Rate Reduction	
	Change	Percent of GNP	Change	Percent of GNP	Change	Percent of GNP	Change	Percent of GNP
1986	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987	2.3	0.1	1.8	0.0	-0.0	-0.0	-0.0	-0.0
1988	5.3	0.1	4.2	0.1	-3.0	-0.1	-2.2	-0.0
1989	12.3	0.2	9.6	0.2	-4.1	-0.1	-3.0	-0.1
1990	20.7	0.4	16.2	0.3	-0.8	-0.0	-0.6	-0.0
1991	27.8	0.5	21.8	0.4	5.0	0.1	3.6	0.1
1992	30.6	0.5	24.0	0.4	5.9	0.1	4.2	0.1
1993	29.6	0.4	23.1	0.3	4.7	0.1	3.4	0.0
1994	28.8	0.4	22.5	0.3	6.5	0.1	4.7	0.1
1995	28.2	0.3	22.1	0.3	8.3	0.1	5.9	0.1
1996	27.7	0.3	21.6	0.3	9.8	0.1	7.0	0.1
1997	28.3	0.3	22.2	0.2	11.0	0.1	7.9	0.1
1998	30.1	0.3	23.6	0.2	12.3	0.1	8.8	0.1
1999	32.2	0.3	25.2	0.2	13.8	0.1	9.9	0.1
2000	34.8	0.3	27.3	0.2	15.3	0.1	11.0	0.1
2001	38.1	0.3	29.8	0.2	17.2	0.1	12.3	0.1
002	41.6	0.3	32.6	0.3	19.6	0.2	14.1	0.1
2003	46.4	0.3	36.3	0.3	23.5	0.2	16.9	0.1
2004	52.6	0.4	41.2	0.3	28.7	0.2	20.6	0.1
2005	59.7	0.4	46.7	0.3	34.7	0.2	24.9	0.2

SOURCE: Congressional Budget Office.

* Through 1991, the cumulative revenue effect of the depreciation changes proposed in the Senate Finance Committee bill (after the rate reduction) is -$2.2 billion. The official JCT estimate (which includes the net effect of transition rules, the increase in expensing of equipment in 1988 and 1989, and the phase-out of expensing for taxpayers with annual investment over $200,000, but does not include the loss of the ITC basis adjustment) is for a cumulative revenue effect of -$1.6 billion.

TABLE 3. REVENUE EFFECT OF THREE CORPORATE PROVISIONS *

Year	House Bill		Senate Finance Committee Bill	
	Change ($ Billions)	Percent of GNP	Change ($ Billions)	Percent of GNP
1986	7.3	0.2	7.3	0.2
1987	18.0	0.4	14.0	0.3
1988	7.7	0.2	-4.2	-0.1
1989	11.0	0.2	-8.8	-0.2
1990	20.3	0.4	-4.2	-0.1
1991	29.8	0.5	3.8	0.1
1992	33.8	0.5	5.8	0.1
1993	34.0	0.5	5.5	0.1
1994	34.5	0.5	7.3	0.1
1995	35.2	0.4	9.1	0.1
1996	36.1	0.4	10.8	0.1
1997	38.0	0.4	12.3	0.1
1998	40.9	0.4	13.9	0.1
1999	44.1	0.4	15.7	0.1
2000	47.8	0.4	17.6	0.2
2001	52.2	0.4	19.7	0.2
2002	56.8	0.4	22.3	0.2
2003	62.7	0.5	26.1	0.2
2004	69.7	0.5	30.8	0.2
2005	77.7	0.5	36.2	0.2

SOURCE: Congressional Budget Office.

* Including the corporate rate reduction, repeal of the ITC, and depreciation changes. For the Senate Finance Committee bill, the cumulative revenue gain for the years 1986-1991 is $7.9 billion. The official JCT estimate for the same provisions (with transition rules and changes in expensing) is a cumulative revenue gain of $2.3 billion.

comparable, to the official five-year estimates of the JCT, because, to simplify the discussion, they ignore transition rules, changes in the provision for expensing a limited amount of equipment, and other relatively small details of these three provisions.7/ Under the House bill, the net effect of ITC repeal, a 36 percent corporate rate, and the proposed changes in depreciation would be to increase corporate taxes in the long term by about the same percentage of GNP as in the 4th and 5th years of implementation. Under the Senate Finance proposal, the net effect of ITC repeal, a 33 percent corporate rate, and the proposed changes in depreciation would be to increase corporate taxes slightly as a percentage of GNP, even though those provisions would be approximately revenue neutral over the first five years.

Both proposals would repeal the ITC retroactive to January 1, 1986, with some grandfathering for investments already in process as of that date. While the estimates presented here ignore transition rules, they do assume that the retroactivity of this provision limits its possible effect on unified budget receipts in fiscal year 1986. If the law was passed after September 1, 1986, or corporate estimated payments proved to be less immediately responsive to legislated changes than assumed, the increase shown for fiscal year 1986 would simply be transferred to fiscal year 1987.

SECTION TWO: ISSUES AND ASSUMPTIONS AFFECTING THE LONG RUN REVENUE ESTIMATES FOR OTHER CORPORATE AND BUSINESS TAX PROVISIONS

The analysis in Section One confirmed that the three general corporate provisions would increase revenues in the first five years, and suggested that the long-term increase would be larger than the revenue increase in the first five years. However, most of the corporate revenue increase that balances the individual rate reductions to preserve the revenue neutrality of the proposals will come from the remaining corporate and general business provisions. For these provisions, the long-term revenue estimates might be

7. Under the Senate Finance Committee bill, the cumulative revenue effect of these three provisions through 1991 is estimated to be $7.9 billion. The official JCT estimate, with the transition rules and other differences in specifications, is $2.3 billion. The JCT estimates for the three proposals also show the same time pattern, with revenue gains in 1986, 1987, and 1991, and losses in 1988-1990. Presently available JCT estimates for the House bill assume implementation of all three provisions during 1986, so the cumulative total, and the annual pattern, are not comparable either to the JCT's estimates for the Senate Finance Committee bill or to the estimates presented here.

expected to differ from the five-year effects because of timing, economic assumptions, or induced portfolio shifts. The following discussion is concerned with the implications of assumptions made for conventional static revenue estimates. It does not consider the dynamic income and substitution effects that might be expected to result from tax changes, such as changes in labor supply or in savings.

Timing Effects

The long-term revenue effects of tax provisions may differ from their five-year effects if they are phased in gradually. The passive loss limitation provisions are phased in over five years, with the limits applying to 35 percent of passive losses or credits in 1987, 60 percent in 1988, 80 percent in 1989, and 90 percent in 1990.8/ The phase in would obviously slow down the attainment of the full revenue gain from the passive loss limitations. During the phase in, passive losses and credits still allowed under the regular tax would be subject to the 20 percent individual minimum tax. In the long term, therefore, the minimum tax would lose some of the revenue picked up by the fully phased-in passive loss provisions. The net revenue effect of this shift should be positive, however, because the maximum regular rate would be higher, and the direct limitation would affect more taxpayers (and be harder to escape), than the minimum tax preference.

Some accounting changes, such as the proposed changes in accounting for long-term contracts, involve delaying deductions now taken currently until the associated income is realized. In the short term, the revenue gain from these proposals is due to the delay in deductions. Eventually, the revenue gain from the delay of deductions associated with new contracts will be at least partly offset when the earlier deductions are finally claimed. The net effect of the change on government revenues should still be positive over the long run, under static economic assumptions that imply steady growth of economic activity, but the annual revenue gain would not be as large in level or in GNP share as over the short term.

This effect should not be exaggerated, however. More than a quarter of the $53.7 billion total five-year revenue gain from accounting changes is due to the provision requiring the capitalization of construction period interest. The change from expensing

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8. The Senate Finance Committee bill would generally allow deductions and credits associated with passive investments to reduce taxes only on passive income. Passive investments generally would be those for which investors would not prove that they had participated materially in the business activity.

of this interest to deductions spread over the life of a structure (especially with the new longer lives for structures) will cause this portion of the revenue gain to continue growing for more than 20 years. Another $7.2 billion of the five-year revenue gain is due to the proposed limitation on use of the installment method to delay recognition of income associated with certain installment receivables. The income recognized earlier under the proposed change will obviously not be recognized later, so the long-term revenue gain will be limited. (Even in the short term, it is limited by the assumption that some affected taxpayers will be able to avoid the restrictions by using alternative forms of financing sales.)

The other accounting change with a large short-term revenue effect, repeal of the bad debt reserve for nonfinancial institutions (worth $6.2 billion over five years), would prevent bad debt deductions from being either overstated or taken in advance of actual experience. Under present law, nonfinancial bad debt provisions tend to bring the deductions into line with actual experience over time, so the long-term revenue gains should correspond to the short term gains.

Economic Uncertainty

In tax analysis, the conventional practice is to employ static economic assumptions, meaning that estimates of future revenues are made as though a tax change will not affect the level of economic activity. The reasons for this convention are discussed below.

Apart from their static nature, the economic assumptions are themselves a major source of uncertainty and error. The medium-term economic projections used for budget planning and revenue estimates assume that the economy will grow at a steady rate based on the average rate of past periods. The projections include the effects of both recessions and recoveries, without attempting to forecast the actual pattern of the business cycle. Given the uncertainty inherent in forecasting turning points, this approach is certainly necessary. Both revenue levels and revenue changes resulting from changes in tax policy are very sensitive to the actual pattern of economic activity, however, so the necessary smoothing of economic assumptions causes an unrealistic (but equally necessary) smoothing of revenues and revenue effects.

The effects of different economic assumptions on revenue projections in the case of changes in general corporate tax provisions are illustrated and discussed in Section Three. Even greater uncertainty attends estimates for smaller tax changes, especially those that apply to particular industries.

An example may be seen in the life insurance industry. Both the House and Senate Finance Committee bills would repeal the special 20 percent deduction for life insurance companies. The projection for life insurance company profits, which determines the revenue estimate for this provision, is more uncertain than that for aggregate corporate profits. Projected profits of life insurance companies may diverge from the general pattern, either because of their own competitive cycles or because of economic factors (such as interest rates) that affect insurance companies differently than other corporations.

The House bill attributes five-year revenue increases of about $21 billion to industry-specific provisions subject to this double economic uncertainty. The Senate Finance Committee bill includes less than $10 billion. The dollar impact of these types of uncertainties on revenue estimates would grow absolutely in the long run, but would probably not increase relative to GNP.

Use of Static Economic Assumptions Without Feedback. The ultimate revenue effect of any tax change depends on the interaction of the economic activity directly affected by the change with the entire economy. For instance, if a change in the tax treatment of investment affects either the level or the productivity of investment, this in turn will affect productivity and employment in the economy, and eventually produce a new level of output and employment. The ultimate revenue effect will be the difference between the revenue associated with the new level of output and income, and the revenue would have been received had there been no tax or economic changes. Revenue estimates of this "general equilibrium" kind are difficult to provide for tax reform proposals. First, there is no consensus as to the size, or sometimes the direction, of many of the most important behavioral responses to tax incentives. Second, even if there were general agreement about behavioral responses, it would be virtually impossible to allocate the ultimate effects of a complex piece of legislation among its separate provisions, and to reestimate them each time the mix of proposals changed.

Portfolio Change Assumptions

While it is well known that official revenue estimates for tax reform proposals are based on static economic assumptions, the meaning of the term "static" in this context is not so well understood. Revenue estimates have always assumed that some behavioral changes in the form of portfolio shifts would result from some kinds of tax changes. Taxpayers are expected to change the distribution of their holdings if portfolio shifts can minimize the impact of tax changes. For example, the first estimates of "safe harbor" leasing provisions assumed that, once they became

legal, such leases would be created and would expand over time. As both revenue estimating methods and tax reform proposals have become more sophisticated, the use of behavioral assumptions involving portfolio shifts has expanded.

A good example of the increase in behavioral assumptions and its effect on revenue estimates is the proposal to extend the "at risk" rules to individual ownership of real estate.9/ In the Treasury Department's tax reform report of November 1984, extension of the at risk rules to real estate was estimated to increase revenue by adding $2.4 billion to individual income taxes over the first five years.10/ For the President's Tax Reform Proposals of May 1985, the Treasury Department estimated that the same proposal would increase individual income tax revenues by only about $1.5 billion over the first five years, but that even this smaller increase would be almost completely offset by a decrease in corporate taxes of about $1.3 billion over the same period. The Treasury obviously assumed that most affected real estate would shift from individual to corporate ownership.11/ In the estimates made by the Joint Committee on Taxation for the House and Senate Finance Committee bills, a partial extension of the at risk rules that results in an increase in individual taxes of $1.6 billion under the House bill and $1.1 billion under the Senate Finance Committee bill is estimated to produce a net five-year revenue increase of only $0.078 and $0.035 billion, respectively, after the corporate offset. Similarly, 40 percent of the $31.4 billion five-year individual revenue gain from the passive loss limitations in the Senate Finance bill is assumed to be offset by a corporate revenue loss.

If the short-term revenue gain from a restriction on individuals' use of tax shelters is reduced by an induced shift from individual to corporate ownership, there will still be a net long-

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9. Under present law an individual investor is generally not allowed to claim tax credits or deductions in excess of the amount he has directly invested in the asset generating the deductions or credits, or the interest on the associated debt for which he is personally liable. The exemption of real estate from this limitation has contributed the growth of real estate tax shelters, since it allows individuals to take full depreciation deductions even when the property is financed by non-recourse loans.

10. The Treasury Department Report to the President, Tax Reform for Fairness, Simplicity, and Economic Growth.

11. Real estate can shift from individual to corporate ownership either because limited partnerships incorporate, or because individuals sell their interests to corporations. In either case, the corporate revenue loss in the estimates requires the assumption that the corporations have taxable income from other sources.

term revenue gain. Tax shelters eventually produce taxable income as their deferrals are used up and their debts paid off. Under corporate ownership this income will first be taxed at the corporate rate (higher than the individual rate under the Senate Finance bill, and then also taxed at the individual rate as dividends or capital gains (unless held until death). The result of an induced shift from individual to corporate ownership might well be a long-term revenue gain considerably larger than the short-term individual increase.

Most behavioral assumptions are not as easy to identify in the published estimates as the one underlying the at risk and passive loss estimates, because they do not involve shifts between the individual and corporate sectors. Official revenue estimates are not accompanied by descriptions of the behavioral (or economic) assumptions on which they are based. However, when the official estimates are compared with estimates made by affected parties (which appear to be completely static), it is clear that the official estimates contain behavioral assumptions. Even in the five-year estimates, the revenue gain attributed to loophole closing has been severely restrained whenever it is plausible to assume that taxpayers could avoid higher taxes through portfolio shifts. Such assumptions are especially plausible, and hence especially certain to have been made, when the proposals would restrict the ability of certain taxpayers to benefit from particular tax preferences, rather than restricting the preferences directly. In those cases, some of the affected taxpayers are assumed to shift their assets into still unrestricted tax-preferred assets, while the restricted assets are acquired by taxpayers not subject to the restrictions (generally lower-income taxpayers), or by tax-exempt investors.

Minimum tax proposals are prime examples of proposals that would restrict particular taxpayers, rather than particular tax preferences. For this reason, the revenue estimates for such proposals are especially difficult to make, even in the short run. The official revenue estimates for minimum taxes in both the House and Senate Finance bills are based on an assortment of assumptions about portfolio shifts and corporate mergers. Further shifts and mergers would certainly limit the long-term revenue growth from minimum taxes. It should be remembered, however, that minimum taxes can increase aggregate revenues by more than may seem likely, even if no taxpayer actually pays them, because they make it harder for taxpayers to reduce their effective tax rates below the minimum rate.

The portion of the five-year individual revenue gain from the passive loss limitations not offset by corporate revenue losses is another example of a restriction on particular taxpayers rather than on tax preferences directly. In the official estimates, revenue gain is reduced by the recognition that, despite some

provisions aimed at limiting avoidance, some losses will be shifted to individuals who already have income from passive investments that exceeds their passive losses and credits.

As noted above, portfolio shift assumptions are appropriate in estimating the revenue gain from individual tax reform proposals that would limit the ability of particular taxpayers to shelter income, without directly limiting the activities that give rise to the shelters. For general tax reform proposals that would close many loopholes, however, the use of portfolio shift assumptions may actually lead to undue pessimism about the amount of revenue that would be raised by general base-broadening. This is because the estimate of the revenue gain from each of the separate shelter-limiting proposals is based on the portfolio shifts that would be expected if only that single proposal were implemented. The portfolio shifts that can reasonably be assumed to result from any one shelter-limiting proposal in isolation might prove less advantageous, or less possible, if several other types of shelters were being limited at the same time. In that case, the revenue gain from the combination of shelter-limiting proposals could be larger than the sum of the revenue gains estimated for the separate provisions.

SECTION THREE: EFFECTS OF ECONOMIC ASSUMPTIONS ON REVENUE ESTIMATES FOR THREE GENERAL CORPORATE PROVISIONS

As mentioned above, the primary sources of uncertainty in revenue estimating are the economic assumptions on which they are based. Corporate revenue estimates are particularly subject to this source of uncertainty because of the volatile nature of corporate profits. The current preference for investment incentives makes corporate tax revenues still more difficult to project because of their dependence on the level and mix of investment.

CBO has tested the effects on the revenue estimates of assuming higher or lower rates of economic growth than those assumed in the baseline projections. Tables 4 and 5 provide 20-year revenue estimates of the three general corporate tax changes in the House and Senate Finance Bills, comparable to those given in Table 3 but assuming lower or higher economic growth. They use economic assumptions from CBO's low- and high- growth alternative economic projections for the first six years.12/ For the remaining years, they assume nominal growth rates one percentage point lower or higher than the 7 percent rate used for Table 3.

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12. See, The Economic and Budget Outlook: Fiscal Years 1987-1991. A Report to the Senate and House Committees on the Budget--Part I, February 1986.

TABLE 4. REVENUE EFFECT OF THREE CORPORATE PROVISIONS ASSUMING LOW ECONOMIC GROWTH *

Year	House Bill		Senate Finance Committee Bill	
	Change ($ Billions)	Percent of GNP	Change ($ Billions)	Percent of GNP
1986	7.4	0.2	7.4	0.2
1987	18.4	0.4	15.3	0.4
1988	11.3	0.3	2.9	0.1
1989	14.6	0.3	-0.9	-0.0
1990	20.9	0.4	0.2	0.0
1991	29.6	0.6	7.3	0.1
1992	33.3	0.6	9.2	0.2
1993	33.7	0.6	9.3	0.2
1994	34.3	0.5	11.3	0.2
1995	34.6	0.5	13.0	0.2
1996	34.8	0.5	14.5	0.2
1997	35.9	0.5	15.8	0.2
1998	37.7	0.5	17.1	0.2
1999	39.8	0.5	18.6	0.2
2000	42.4	0.5	20.2	0.2
2001	45.5	0.5	22.0	0.2
2002	48.8	0.5	24.1	0.2
2003	53.1	0.5	27.3	0.3
2004	58.4	0.5	31.2	0.3
2005	64.1	0.5	35.4	0.3

SOURCE: Congressional Budget Office.

* Including the corporate rate reduction, ITC repeal, and depreciation changes. The low economic growth path assumes a recession starting in 1987, having approximately the depth and duration of that experienced in 1973-1975, and followed by an average economic recovery. After 1991, the annual nominal growth rate is assumed to be 6 percent.

TABLE 5. REVENUE EFFECT OF THREE CORPORATE PROVISIONS ASSUMING HIGH ECONOMIC GROWTH *

Year	House Bill		Senate Finance Committee Bill	
	Change ($ Billions)	Percent of GNP	Change ($ Billions)	Percent of GNP
1986	7.6	0.2	7.6	0.2
1987	18.8	0.4	14.7	0.3
1988	6.6	0.1	-6.7	-0.1
1989	9.5	0.2	-13.5	-0.2
1990	20.2	0.3	-9.6	-0.2
1991	31.0	0.4	-3.9	-0.1
1992	36.7	0.5	-3.6	-0.0
1993	39.5	0.5	-3.8	-0.0
1994	42.3	0.5	-1.4	-0.0
1995	44.5	0.5	0.8	0.0
1996	46.1	0.4	2.3	0.0
1997	48.5	0.4	3.5	0.0
1998	52.3	0.4	5.1	0.0
1999	56.8	0.4	7.0	0.1
2000	62.3	0.4	9.0	0.1
2001	68.8	0.4	11.4	0.1
2002	76.1	0.5	14.2	0.1
2003	84.9	0.5	18.3	0.1
2004	95.1	0.5	23.4	0.1
2005	106.6	0.5	29.4	0.1

SOURCE: Congressional Budget Office.

* Including the corporate rate reduction, ITC repeal, and depreciation changes. The high economic growth path assumes that average real GNP growth through 1991 is 1.2 percentage points higher than in the baseline projections of Table 3. After 1991, the annual nominal growth rate is assumed to be 8 percent.

These estimates are still completely static, in that for each alternative, the same economic assumptions are assumed for both present law and the proposed changes. They are also limited in scope: they do not completely bracket the range of possible revenue estimates, because they were not specifically designed to maximize or minimize the estimated revenue effects of the proposals. The estimates do, however, suggest the impact that reasonable differences in economic assumptions can have on the revenue effects of tax changes. They also reinforce the conclusion of Section One, that the long-term revenue effects of the three general corporate changes in both tax proposals would be positive.

The low-growth alternative has a recession in 1987-1988. The effect of this recession is to reduce corporate profits as a share of GNP, and therefore reduce the effect of the corporate tax rate reduction, by enough to increase the net revenue gain (relative to GNP) from the three provisions in the House bill in each of the years 1991-2002, despite the impact of lower investment on the revenue gain from the depreciation changes and ITC repeal. Because the rate reduction is larger in the Senate Finance bill, the impact of low growth is more dramatic. The three provisions reduce revenue in only one year (and by an insignificant amount) instead of in three years. The revenue gain is greater, both absolutely (except in the last year) and as a share of GNP, in every year (although the difference is not always significant).

Under the high-growth alternative, the effects of higher profits and higher investment on the revenue estimates for the three general corporate provisions of the House bill are roughly offsetting for most years. The revenue gain is a slightly lower share of GNP in three of the first five years, and a slightly higher share in two of the later years. Once again, the differences are greater in the Senate Finance bill with its larger rate reduction. The net revenue effect of the three general corporate provisions is negative in seven years instead of three (though not significantly so in the last three), and for the last five years the projected net gain is one-tenth of 1 percent of GNP instead of two-tenths.

APPENDIX: THE CBO DEPRECIATION CALCULATOR

The depreciation calculator used here estimates the additional depreciation deductions available to business as a result of a change in the law governing tax depreciation. Total depreciation deductions under current and proposed law are estimated by depreciating individual vintages of each type of corporate capital good, using average annual depreciation factors appropriate for each depreciation system. The derivations of the depreciable bases and annual depreciation factors will be documented in detail in a future CBO staff paper, and are summarized below.

The depreciable bases for the depreciation calculator are derived from forecasts of the national income and product account (NIPA) measures for business fixed investment in producers' durable equipment (PDE) and nonresidential structures. The equipment base is increased to account for those business purchases of new autos which, under the definition of PDE, are offset by business sales of used autos to nonbusiness sectors. Nonresidential structures are reduced by structures estimated to be owned by nonprofit and other nontaxable entities, and increased to total depreciable business structures by adding an estimate of business purchases of residential structures. The equipment and structures bases are then divided into corporate and noncorporate portions, and the corporate share of structures is divided into utility property and real property. The resulting corporate depreciable bases for new capital goods are equipment, utility property, and real property. Changes in depreciation rules also apply to capital goods that change owners, so four more depreciable bases are independently estimated. These include used equipment and real property (pre-1987 capital goods that change hands and come under the new law), and resold equipment and real property (post-1986 capital goods that change hands.) The unadjusted basis of used and resold structures is assumed to have increased at the same rate as the GNP deflator. Used and resold equipment is not assumed to appreciate with inflation. Average tax lives depreciation factors under present law and the proposed changes, and the average statutory ITC rate, are calculated using NIPA investment weights, and related data on the distribution of corporate investment by industry, modified by considerable judgment.

Technical Assumptions for the Depreciation Calculator

In 1986, the total depreciable new equipment base is 106.2 percent of PDE (and used autos equal to 6.2 percent of PDE are sold to nonbusiness sectors after only one year in the depreciable base), utility property is 20 percent of nonresidential real structures, and new real property is 84.9 percent (64.0 percent nonresidential, 20.1 percent residential). Corporations are assumed to own 78 percent of the total depreciable equipment base, 100 percent of the

depreciable public utility base, 68 percent of the nonresidential real property, and 5 percent of the residential real property.

Under ACRS the average ITC rate is 9.39 percent. The assumed distribution of corporate equipment investment under ACRS and the two proposals is given below:

Current Law (ACRS)

3- year	23.77%
5- year	72.56%
10-year	3.68%

House Bill

Class 1	3.51%
Class 2	45.83%
Class 3	11.61%
Class 4	29.20%
Class 5	6.71%
Class 6	3.07%
Class 7	.07%

Senate Finance Bill

	Through 1989	After 1989
3-year 150% declining balance	2.09%	7.09%
3-year Straight line	16.84%	16.84%
5-year	77.08%	72.08%
10-YEAR	3.99%	3.99%

R&E related equipment is assumed to equal 5 percent of total corporate equipment investment.

Under ACRS 47 percent of real property is assumed to be depreciated under the straight-line option which avoids recapture upon resale. Real property for which straight-line has been chosen is assumed to be resold according to the following schedule: 10 percent in the seventh year, 20 percent in the eighth, 40 percent in the ninth, 20 percent in the tenth, and 10 percent in the eleventh. Five percent of new equipment is assumed to be resold in the fifth year, and 15 percent in the sixth year.

Use of Depreciation Calculator Results to Calculate Revenue Effects

The change in depreciation deductions estimated by the depreciation calculator is subtracted from a forecast of taxable profits before the depreciation change. Taxable profits are then multiplied by the effective tax rate.

The effective tax rate on taxable profits is determined both by the statutory rate and by all provisions that reduce taxes without affecting the measurement of the taxable base. In the procedure used to make the revenue estimates presented here, an equation is estimated with liability after the foreign tax credit, but before the investment tax credit, as the dependent variable. The effective tax rate is the product of the coefficient of the independent variable, which includes taxable profits and the statutory rate.

The resulting calendar year estimates are then distributed to a fiscal year unified budget basis.

Economic assumptions

Projections of five aggregate economic variables are required to produce the revenue estimates presented here. For the estimates presented in Section One, the CBO baseline projections of February 1986 were used for the first five years, and constant growth rates were assumed for the next 15 years. Those economic variables are listed below, and their average growth rates are shown for the years 1987-1991 and 1992-2005.

ECONOMIC ASSUMPTIONS

(Average annual percent change, Calendar years)

Variable	1987-1991	1992-2005
GNP	7.6	7.0
GNP deflator	4.1	4.0
Producers' durable equipment	10.1	7.0
Nonresidential structures	8.0	7.0
Economic profits	7.1	7.0