THE EFFECTS OF TAX POLICIES ON INVESTMENT IN MACROECONOMETRIC MODELS: FULL MODEL SIMULATIONS

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The Effects of Tax Policies on Investment in Macroeconometric Models: Full Model Simulations

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and
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1. Introduction

In Phase I we examined the structures of the investment equations in the BEA, Chase, DRI, Michigan, MPS and Wharton models. We noted that estimated effects of altering investment tax parameters varied widely across the models, influenced critically by the varying specifications.

In our Phase II paper, we reported estimates of the original investment equations as well as our preferred revised equations. We noted that results in the original equations differed particularly as a consequence of differences in the equipment equations in implicit or explicit values of σ, the elasticity of capital with respect to its rental price. Our preferred revised equations, eliminating the dividend or earnings-stock-price ratio to attain a purer measure of a cost of capital variable, splitting output and rental price of capital into separate variables in DRI, and removing the homogeneity constraint in MPS, brought drastic reductions in the high simulated effects of tax parameters in the original models. Dealing only with the investment equations, without feedback from the rest of the model, the mean results of the original equations suggested that each dollar

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1/ A slightly abridged form of the Phase I and Phase II reports is available as "The Effects of Tax Parameters in the Investment Equations of Macroeconomic Econometric Models," OTA Paper 47.

of tax loss from increases in investment credits for both equipment and structures would result in about 71 cents of added investment. Our revised equations offered a comparable mean figure of only 40 cents of added investment for each dollar of tax loss.

In Phase III, we turn to full model simulations. We note and compare the effects of specific investment tax "incentives" in the six models. We compare results of simulations with the original investment equations and with the substitute, revised equations that we have estimated with the model data. We thus report upon some 72 sets of results: six different sets of tax measures for each of two sets of investment equations in each of six models.[1] Working with the full models, we are able to capture feedback effects, positive and negative, on both the portions of investment on which the incentives are focussed and on some other forms of investment and product.

To avoid problems of forecasting exogenous variables, all simulations are performed for the period from the first quarter of 1973 to the present. In each case there is therefore the common, baseline historical path. Then, to avoid the cumulative effect of errors over time, which could drive the models off course, a "residual feedback" technique is applied. The errors in the baseline equations for each quarter are added to the endogenous variables in the various simulations. Thus, the simulation paths are directly comparable with history.

Government expenditures for goods and services and rates of transfer payments are adjusted for changes in price levels resulting from the simulations so as to be unaffected in real terms. No exogenous changes in monetary policy were introduced in connection with the simulations. This turns out to imply sometimes different monetary responses in the various models, however, as we shall note.

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[1] Indeed we include twelve more simulations for MPS with M1 instead of unborrowed reserves as the exogenous monetary parameter held at baseline values.

2. Outline of the Simulations

The six simulations were as follows:

1) Increasing the investment tax credit. The equipment tax credit was set at double its historical rate for each of the quarters from 1973-I on. For models using the statutory rate, this meant that the 7 percent equipment credit became 14 percent for 1973 and 1974 and the 10 percent credit became 20 percent for years from 1975 on. In addition, a new structures credit was introduced equal to the historical equipment credit. Thus, in symbols, with k_e' and k_s' designating the equipment and structures credits in our simulations and k_e the existing equipment credit, $k_e' = 2k_e$ and $k_s' = k_e$.

It is important to note, although the models do not, that over the period of the simulations the investment tax credit, ostensibly for equipment, has actually been enjoyed by between 50 and 60 percent of investment classified as structures in the national income accounts and in the models. This is particularly true in utilities and communications, where almost all investment in structures qualified for the investment tax credit. In explicitly adding to the structures credit in this simulation an amount equal to the addition to the equipment tax credit, we examine the impact of a more general investment tax credit applied to plant and equipment.

By specifying that the equipment tax credit be doubled over its historical values in each quarter and that the structures credit be increased by an equal amount we endeavor to secure comparability among models that incorporate an effective tax credit (which recognizes that not all of equipment has in fact been eligible in whole or in part for the credit) and models which have incorporated the statutory rate in the parameters of their equations.

2) Increase the investment tax credit, as in the first simulation,' but with compensating lump sum increases in personal income taxes. This ex ante balanced budget tax credit simulation is thus intended to isolate effects of an investment tax credit per se from the general effects of any tax cut. We furnished each model with a quarterly series of direct changes in business tax liabilities stemming from the increase in investment tax credit with instructions to add these amounts to the equation for personal tax payments.

3) Conable-Jones,"10-5-3" acceleration of depreciation. Estimates of existing length of tax depreciation lives for equipment and for structures were obtained from Larry L. Dildine of the Office of Tax Analysis. Estimates of equivalent tax depreciation lives under 10-5-3 were similarly obtained. These were calculated as the tax lives for double-rate declining balance depreciation which would give the same present value at a 12 percent rate of discount as the depreciation flows specified in 10-5-3. In view of the phase-in provision of 10-5-3, this entailed decreasing lives for each of the first five years, from 1973 to 1977 in our simulations.

Since the models had used tax depreciation lives which in some cases differed from the Office of Tax Analysis estimates of lives, as well as from each other, in order to incorporate equal reductions in tax lives, separate series are furnished to each model to make their 10-5-3 tax lives differ from their existing tax lives by the same proportion as the OTA estimates.

In addition, it was necessary to furnish series to each model indicating the quarter-by-quarter increases in tax depreciation allowances, corporate and business noncorporate, brought on by 10-5-3. This was accomplished on the basis of the stipulated phase-in and equilibrium depreciation rates of 10-5-3 along with the tax lives estimated by the OTA under existing law. We developed a rather complicated algorithm which enabled us to duplicate precisely the differences in depreciation allowances estimated by the Treasury for the phase-in period and to come within one or two percent of those estimates for the years thereafter. The differences in depreciation rates used to match the Treasury estimates of future depreciation changes were applied to the historical investment streams to generate differences in tax depreciation charges over the period of the simulations.

These series of differences, both corporate and business noncorporate (proprietors, nonresidential) were furnished to each of the models with further instructions to insure that income before taxes and the capital consumption adjustments were altered accordingly. (Corporate profits before taxes without adjustment are reduced by the increase in depreciation allowances but an equal algebraic increase in the capital consumption adjustment leaves corporate profits before taxes with adjustment unchanged. Corporate profits taxes are then reduced by application of the models' corporate tax rates to the change in profits before taxes without adjustment. The models were instructed to reduce personal income tax liabilities by applying the corporate tax rate to the change in taxable personal income due to changes in tax depreciation allowances of non-corporate businesses on the non-residential property.)

Since 10-5-3 also offers some liberalization of the rules for application of the investment tax credit, the models were instructed to incorporate the resulting increases in the effective credit. These were estimated to be 0.8 percent for equipment and 0.2 percent for structures (the national income accounting category of structures used in the models which includes, as we have noted, a major component of equipment). The models were therefore instructed to add this 0.8 percent to their equipment tax credit and change the implicit or explicit credit for structures from zero to 0.2 percent.

4) An increase in the investment tax credit for equipment which would offer tax reductions of equal present value to those provided by 10-5-3. With its emphasis on accelerated depreciation, 10-5-3 offers a stream of tax reductions which starts small but rapidly grows large. This pattern for 10-5-3 is sharpened by its phase-in provisions. The 10-5-3 proposal also offers very substantial tax advantages to structures. The investment tax credit in its current form offers benefits to the business taxpayer, and losses to the Treasury, up front, varying essentially with the rate of business investment in equipment. This simulation makes possible comparison of 10-5-3 and the investment tax credit with respect to magnitude and timing of tax reductions and effects, and on the split between equipment and structures.

The present value equivalents were calculated on the basis of actual investment and Treasury bill rates over the period from 1973 to the present and a 12 percent discount rate and projected investment streams derived from the Wharton Annual Model for the years from 1980 on. The three month Treasury bill rates were applied successively for the 1973-1979 period and the 12 percent rate thereafter to secure increasingly long-term rates of discount from the beginning of 1973 to each of the future quarters over which tax payments would be affected by, alternatively, 10-5-3 and an increase in the investment tax credit for equipment. The calculations indicated that the present value equivalent increase in the equipment tax credit equal to the tax reductions in 10-5-3 was 16.264 percentage points.[1] The models were therefore instructed to increase their investment tax credit for equipment by this constant amount during the simulation period, thus raising the statutory rate of credit from 7 to 23.264 percent for 1973 and 1974 and from 10 to 26.264 percent for the years 1975 through 1979.

5) A decrease in the corporate tax rate which would lower corporate income taxes by an amount whose present value was equal to the present value of the total tax reductions, corporate and noncorporate provided for by 10-5-3. The calculations here were analogous to those for the present value equivalent increase in investment tax credit of simulation 4. The present value equivalent reduction in the corporate tax rate was found to be 9.815 percentage points.[1] Each of the models was instructed to reduce the corporate income tax rate by this amount over the simulation period.

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[1] Applying 12 percent discount rates to projected investment and profits for the 40 quarters beginning in 1980-I indicates that present value equivalents of 10-5-3 would currently be a 17.2 percentage point increase in the equipment tax credit or a 10.6 percentage point decrease in the corporate income tax rate. Comparable equivalents for the OTA alternative described below are plus 5.4 percentage points for the equipment tax credit and minus 3.6 percentage points for the corporate tax rate.

6) <u>An alternative depreciation proposal under consideration by the Treasury</u>. Relevant parameters and series for this, analogous to those of 10-5-3, were furnished to each of the models on the basis again of information from Larry L. Dildine of the Office of Tax Analysis and the algorithm which we developed for generating differences in depreciation flows. Each model was furnished new values of tax lives for equipment and structures which in this case involved no phase-in but were again calculated so that the changes from existing tax lives in the models would be proportionate to the changes from existing tax lives estimated by the Office of Tax Analysis. The Treasury proposal under consideration entails effective increases in the investment tax credit of 1.2 percent for equipment and 0.6 percent for structures. The models were instructed to increase their explicit and implicit investment tax credits for equipment and structures by these amounts. Instructions analogous to those for the 10-5-3 simulation 3 were again offered for using the changes in depreciation allowances to alter corporate profits after taxes, taxable personal income and capital consumption adjustments.

3. The Findings

Comparison of Full Model Simulations and Phase II Results with Investment Equations Alone (Table 1)

Full model simulations by and large underscore the effects of tax parameters in the investment equations indicated in PhaseII. Table 1 (1.1 through 1.6) reports results of the comparisons of effects in 1977-IV of having doubled the equipment tax credit and added a structures credit equal to the historic equipment credit in the investment equation simulations and in full model simulations one and two. These latter involve, respectively, no personal tax offset and a personal tax offset equal to the static reduction in taxes resulting from the increased investment tax credit.

In all of the models except BEA there is some positive feedback to equipment investment in the full model simulations with no personal tax offset. The general variety of results remains, however.

Thus Michigan was low, with equipment investment increasing by only 1.6 percent in the full model simulation, as against 1.5 percent in the investment equations alone. DRI and MPS were again high. In the case of DRI the single equation result of +14.2 percent became +15.7 percent in the full model simulation.

While monetary sectors differ, perhaps significantly, in the various models, we have been able to attain a certain common constraint by maintaining unborrowed reserves at baseline values in the Chase, DRI, MPS and Wharton models. In the BEA and Michigan models monetary reserves seemed generally endogenous and it did not appear feasible to maintain unborrowed reserves or any similar parameter fixed. In the case of MPS we became aware of considerably different results when M1, rather than unborrowed reserves, was held at baseline values, as indicated in our special discussion of the MPS model.[1] We have, in our comparisons, generally presented the MPS simulations with unborrowed reserves at baseline values but should caution that a sharp cycle became apparent

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[1] See Appendix A.

in some of these results, as a boom in the fifth year turned to a precipitous decline by the seventh year.

In any event, the MPS full model simulation of the increased investment credit showed a 19.7 percent increase in equipment investment by the end of the fifth year, that is by 1977-IV, thus even higher than DRI. With M1 held at baseline values, however, the MPS result was somewhat less, 14.4 percent above baseline. (See Tables 1.5 and 1.5-M1.)

Introduction of a personal tax offset to the decreased taxes resulting directly from higher investment tax credits leads generally to somewhat lesser stimulatory effects on equipment investment but the differences are less than what might have been expected. In the MPS model with M1 at baseline values, investment actually increased more when personal taxes were increased. All of this suggests more or less powerful monetary feedback in the various models. Bond rates tend to rise less or decline, *ceteris paribus*, when taxes are higher or the budget deficit is less.

Our preferred "C-E" equations generally, but not always, showed distinctly lesser effects on equipment investment in the full model simulations, as they did in the investment equations alone. The notable exception was Chase, where our 3.1 percent of baseline increase in the investment equation itself became 7.6 percent with no personal tax offset and 4.5 percent with the offset, in both cases larger than the estimates from the original equations. This, however, related to a special issue in dealing with variables reflecting stock prices, profits after-tax and profits-stock price ratio variables. In the single investment equations these variables have been held at their baseline values. In the full model simulations they were allowed to vary and their variation added considerably to investment.

Looking at the results of simulation 1 in general, with a reduction in taxes amounting to 10 percent of investment by 1977-IV, five years after initiation of the stimulus and after three years of the 10 percent increase, the full model simulations using the original equations showed increases in equipment investment amounting to only 7.9 percent of baseline for BEA, 6.2 percent for Chase, 1.6 percent for Michigan and 8.0 percent for Wharton. The outliers were DRI at 15.7 percent and MPS at 19.7 percent.

Use of the C-E equations resulted generally in lesser effects, 7.8 percent in BEA, 7.6 percent in Chase, only 3.9 percent now in DRI, 1.8 percent for Michigan and 3.3 percent for Wharton. The MPS result with unborrowed reserves at baseline values was still 11.8 percent, but with M1 at baseline values the MPS result was 4.8 percent. It would appear highly questionable, therefore, whether 10 percent increases in the investment credit generate anywhere near a 10 percent increase in investment.

In the case of structures, we will recall, none of the models showed tax parameters as particularly potent in the investment equations -- themselves. This pattern was maintained in the full model simulations. Thus, with no personal tax offset, institution of a 7 and then 10 percent investment tax credit raised structures investment in the full model simulations with no personal tax offset by only 2.6 percent in the BEA model, 8.9 percent in the Chase model, 7.7 percent in the DRI model, .2 percent in the Michigan model (where tax parameters did not enter the structures investment equations at all) and 8.0 percent in the Wharton model (where equipment and structures investment were jointly determined). Only MPS with unborrowed reserves at baseline values was again an outlier, with a 15 percent effect, contrasting with an 8.1 percent stimulus when M1 rather than unborrowed reserves was the monetary parameter held at baseline values.

Substitution of the C-E equations did not generally make a great deal of difference in structures, except in the Wharton model where structures and equipment, again, were determined jointly.

<u>Full Model Simulations, Equipment, Structures and Housing, and Total Fixed Investment</u> (tables 2 and 3)

Effects of the various changes in tax parameters on investment in equipment, structures and housing at the ends of the first, third, fifth and seventh years, may be noted in Table 2, parts A through D. Tables 3.1 through 3.6 show the amounts and timing of the peaks of response as well as the departures from baseline in quarter 28 (1979-IV), the end of our simulation period, for investment in equipment, structures and housing and for capital stocks where those data are available.

We may note first that for investment in equipment and in structures tax stimuli, except in the case of 10-5-3, generally resulted in a surge in investment which reached a peak some time before the end of the simulation period, frequently as early as the third or fourth year. This was presumably accountable to distributed lag coefficients of which the effects diminished as new equilibrium capital-output ratios were approached. There should have been, and probably were, negative feedbacks in a number of cases stemming from real resource constraints and/or monetary constraints. These feedbacks may, or should, have been proxying for the real resource constraints.

For in an appropriately formulated model, investment can increase rapidly as long as there are idle resources to be used in producing additional capital goods. As full capacity is approached, investment in equipment and structures must compete more streneously against other investment and other production. Tighter credit or higher interest rates may then reflect business bidding for scarce resources. A fully accommodative monetary authority would under such circumstances only contribute to added inflation without making additional resources available for nonresidential fixed investment.

In the BEA model, we note then, peaks in investment in equipment with the original equations are reached in the twelfth quarter in simulations 1, 4, 5 and 6 and in the fourteenth quarter in simulation 2. In each case investment is distinctly less in 1979-IV than at the peak. Peaks are on occasion somewhat later with the C-E equations.

In all of the models except DRI and Wharton, peaks in the stimulatory effects on equipment and structures investment were generally reached before the end of the simulations, except in the case of 10-5-3. In the DRI model the generally buoyant responses may have kept investment booms in some instances going longer.

The later peaks in 10-5-3, where they occur at all in the simulation period, are largely if not entirely accountable to its phase-in properties. Only in the fifth year did tax parameters take on their full stimulatory values in 10-5-3, and further lags in responses could well result in simulations showing investment in equipment and structures still growing at the end of the twenty-eighth quarter.

The effects of 10-5-3 on investment in equipment in particular were initially very modest. Thus, while the present value equivalent of 10-5-3 would be an increase in the investment credit for equipment of some 16.254 percentage points, the increases in equipment investment as a percentage of baseline, using the original investment equations, were only .8 percent and 2.9 percent at the end of each of the first two years in BEA, .4 percent and 1.4 percent in the Chase model, .9 percent and 5.1 percent in DRI, 2.3 percent and 3.2 percent in Michigan, .8 percent and 2.2 percent in MPS, and .8 percent and 1.9 percent in Wharton.[1] The effects on structures investment are somewhat speedier, as well as larger, because 10-5-3 provides such relatively huge

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[1] A tabulation of year-by-year effects on investment indicated by each of the models is available on request to the Office of Tax Analysis.

reductions in depreciation tax lives for structures.

It should be observed that none of the models takes into account the likelihood of adverse effects on current investment from intertemporal substitution induced by the phase-in process in 10-5-3. Investment is slow because the tax advantages are small at first. But since 10-5-3 provides greater tax advantages for investing at the end of the five-year phase-in than investing at the beginning, rational business decision-makers might well decide actually to invest less in the phase-in period, delaying their investment until they could receive maximum tax advantage.

Stimuli to some kinds of investment may well cause reduced investment elsewhere, given generally scarce resources, or complementarity among capital goods or generalized effects of a buoyant economy may tend to raise various rates of investment together. Simulation 4, involving a 16.264 increase in the investment credit for equipment, reveals the disparate results _ the various models can generate.

The BEA model indicates substantial reductions in investment in structures as equipment investment soars. Similarly in Wharton, where a specific equation allocates total investment between equipment and structures largely on the basis of relative cost of equipment and structures, reflecting differential tax credits, investment in structures declines precipitously. In the case of Chase, however, structures investment rises along with, albeit less than, equipment investment. In the DRI model, there is a major, if short-lived, boom in structures investment with the large increase in the equipment tax credit. Similarly in MPS there are large positive effects on structures investment. In Michigan, once more, structures investment is essentially unaffected by tax parameters.

In principle, it would be desirable to explore the effects on all other investment of tax stimuli to one particular type of investment. The models do permit analysis of housing investment. Here again the effects are mixed.

In the BEA model positive effects on investment in nonresidential equipment and structures are matched by substantial negative effects on investment in housing. There are also negative effects in the DRI model but effects are minimal in Michigan and Wharton and vary with the monetary constraint in MPS. With unborrowed reserves at baseline values MPS generally generates somewhat more housing investment as investment in equipment and structures rises. With M1 held at baseline values, however, the increased budget deficits associated with all of the simulations except number 2 (where there is a personal tax offset to the increase in the investment tax credit) apparently causes credit tightness and sharp reductions in housing investment.

Variables Other Than Investment (Tables 4 and 5)

Table 4 indicates effects on variables other than investment in each of the six simulations for each set of equations in each of the six models. Looking at peak percent changes from baseline and percent changes from baseline in 1979-IV we find again quite varied results in the different models. Employment and expenditures for GNP, personal consumption and consumer durables generally rise, but not always. The exceptions, where they occur, relate to the investment tax credit personal tax offset. Here we find declines in employment and expenditures in the BEA, Chase and Michigan models using the original equations. DRI and MPS, however, show substantial increases, as does Wharton.

In all models except BEA, this simulation of added investment tax credits with offsetting personal tax increases results in at least slightly lower values of the GNP price deflator. In all models except BEA and DRI, interest rates as measured by the corporate or the utility bond rates also decline. And in this simulation alone the federal budget deficit decreases.

The other simulations tend more generally to have substantial positive effects on employment, GNP and other expenditures and on interest rates. The GNP price deflator is relatively little affected. The C-E equations tend to show lesser effects than the original equations in the DRI, MPS and Wharton models.

Table 5 summarizes the results for both the other variables and various components of investment for quarter 28 (1979-IV). Comparing simulations, we may note that the models indicate that reductions in the corporate income tax rate have relatively small effects on investment in equipment and structures.

<u>Net Federal Budget Surplus</u> (Table 6)

Tables 6.1 through 6.6 indicate effects in the first, ninth and twenty-eighth quarters, as well as peaks and lows of differences from the baseline, for the net federal budget surplus in billions of current dollars. None of the models suggests that uncompensated tax cuts to stimulate investment bring in more tax revenues than they lose. The model that minimizes the effect on the deficit is DRI. Here with the OTA alternative there is actually a trivial reduction in the deficit by the amount of .3 billion dollars in the fourth quarter of 1979, in estimates using the original equations. In all other cases, except where increases in the investment tax credit are offset by increases in personal income taxes, the tax incentives increase the deficit. This is true for all models and for both the original and C-E equations.

In most models and simulations the deficit was still rising at the end of the simulation period. In DRI the general stimulatory effects of the incentives seem to be bringing a turnabout some time before the end of the simulation period in all cases except that of the reduction in corporate tax rates. The 10-5-3 simulations, of course, generally began with small increases in the deficit which, however, increased rapidly.

Total Fixed Investment (Table 7)

Table 7 indicates the year-by-year effects on total fixed investment, the sum of housing and nonresidential investment in equipment and structures, for each set of equations in each simulation in each model. Very wide variance of results is again immediately apparent.

With the original equations for 10-5-3, for example, the peaks of investment response range from $3.5 billion in the Michigan model to $33 billion for DRI. The C-E equations generally result in less stimuli to total fixed investment, except in the case of the corporate profits tax rate reduction, where only Chase shows any substantial positive effect. The 1978-79 downturn in the mean effects of the 16.264 percent increase in the investment credit for equipment is an aberration due to the explosion of the MPS model using unborrowed reserves at baseline values. If the MPS simulation with M1 at baseline values is substituted for 1978 and 1979, mean figures for effects on total investment are higher for the original equations than the C-E equations.

4. Summary (Tables 8, 9 and 10)

Comparisons of the effects of investment tax incentives on investment, GNP and the federal budget surplus or deficit, as shown in the various simulations and equations for each of the models are found in Tables 8, 9 and 10. As throughout our analysis, two sets of facts stand out. First, results are quite varied, with large effects shown in the DRI and MPS models, sensitive to equation specification and monetary assumptions. Second, with these outliers eliminated, the models generally show only modest effects of tax parameter changes on investment. This is particularly so when simulations are performed with our preferred C-E equations.

Thus, Table 10 indicates that the static tax losses without feedback from simulation 1, adding 10 percent to investment tax credits for equipment <u>and</u> structures, amounted to $26.4 billion at annual rates in the fourth quarter of 1979. This came to 15.5 billion 1972 dollars. Only the DRI and MPS models indicated resultant increments to total fixed investment of more than this amount in simulations using the original model equations. The mean increment of $11.7 billion (Table 8.1) was only 76 percent of the direct tax loss.

The C-E equations generated a mean increment of total fixed investment of $8.7 billion, only 56 percent of the direct tax loss. The difference was occasioned by sharply lower estimated effects on investment in the DRI, MPS and Wharton models, only partially compensated by higher estimates in the BEA and Chase models.

Increases in the federal budget deficit were, of course, generally less than the direct tax loss. But even here the mean increase in the deficit, 10.2 billion 1972 dollars, was almost as much as the mean simulated increase in total fixed investment with the original equations, 11.7 billion 1972 dollars. The deficit increase was larger than the increase in total fixed investment in the C-E equations, 10.0 billion versus 8.7 billion 1972 dollars.

Interestingly, the models generally showed significant increases in total fixed investment, along with decreases in the budget deficit in simulation 2, which added a personal tax increase to offset the reduced taxes from increases in the investment tax credit. These results are shown in Table 8.2. The increases in total fixed investment were modest, however, amounting to means of 10.4 billion 1972 dollars with the original equations and 7.3 billion 1972 dollars with the C-E equations. The reductions in the federal budget deficit were trivial, in the order of $2 billion.

The 10-5-3 simulation reported in Table 8.3 is dramatic in indicating quite large tax losses and increases in the federal deficit in 1979-IV, with sharply lesser effects on fixed investment in the BEA, Michigan, and Wharton models, but large effects on investment in the DRI and MPS models. Chase proved intermediate, with total fixed investment approximately equal to the increase in the federal budget deficit, but less than the static tax loss of 21.0 billion 1972 dollars (35.9 billion current dollars).

The 16.264 percentage points increase in the equipment tax credit of simulation 4 leads to increases in 1979-IV equipment in all models except MPS using its original equations, where a cyclical downturn develops. The amount of the indicated increase varies substantially: Michigan, 2.6 billion 1972 dollars; Chase, 9.7; BEA, 15.0; Wharton, 18.7; and DRI high at 37.1 billion 1972 dollars. The estimates of increments in equipment investment with the C-E equations were much less for DRI, only 7.9 billion 1972 dollars, and somewhat less for Wharton, only 13.5 billion.

Using the MPS results stemming from M1 at baseline levels, we find the original equations showing a mean increase in equipment spending of 12.8 billion as against a mean deficit increase of 17.2 billion 1972 dollars. The C-E equations, with MPS this time using the usual unborrowed reserve constraint, showed a mean increment in equipment spending of 9.8 billion as against a mean increase in the budget deficit of 15.4 billion 1972 dollars. Increments to total fixed investment were no more, as the big increase in the equipment tax credit generally left structures and housing investment unaffected or slightly less.

Table 8.5 indicates modest increases in investment as a consequence of the cut of almost 10 percentage points in the corporate tax rate. The models, with the exception of Chase, are fairly unanimous in indicating increments to investment quite less then increases in the deficit and, in all cases, far less than the static loss. The C-E equations do little to change the picture stemming from the original equations.

The OTA alternative shown in Table 8.6 offers relatively modest static tax losses, 9.4 billion current dollars and 5.5 billion 1972 dollars in 1979-IV, but correspondingly small increments to investment. These come to mean figures of 5.7 billion 1972 dollars for the original equations and 4.7 billion 1972 dollars with the C-E equations. The mean increases in federal budget deficits are, respectively, 5.6 and 5.7 billion 1972 dollars.

Thus except for special cases of DRI and MPS with their original equations, investment stimuli do not match static tax losses. They certainly generate nowhere near enough added income to prevent substantial increases in federal budget deficits.

The year-by-year sequences of fourth quarter results for investment in equipment, structures, housing and total fixed investment, with both original and C-E equations, are presented in Table 9. They are expressed as percentage changes from baseline and the static tax loss as a percent of fixed investment is offered for comparison. All figures are based on 1972 dollars, with the GNP implicit price deflator used to convert tax losses (as well as the net federal budget surplus in other tables) to 1972 dollars.

Noting first the results of simulation 1 with the seven and then ten percent increases in investment tax credits for equipment and structures (Table 9.1), we see that total fixed investment, in simulations with both the original equations and the C-E equations, increases less than the static tax loss in every year in the BEA, Chase, Michigan and Wharton models. Only in the DRI and MPS models does the increase in investment in some years exceed the static tax loss. In the case of DRI, these excesses do not appear in the simulations with C-E equations.

The BEA model does generate some large increases in investment in equipment and structures but these are counterbalanced by decreased investment in housing. In the DRI case, housing investment is also depressed but the overwhelming increases in investment in equipment, upwards of 15 percent of baseline in most years with the original equations, leaves total fixed investment generally well above the static tax loss.

The models all indicate, with the exception of Michigan, that a combination of higher investment tax credits and offsetting personal tax increases results in larger investment in equipment and structures, although frequently less investment in housing (Table 9.2). It may be observed that the Michigan model, results of which are frequently outliers, is particularly ill equipped to handle investment tax credit changes. As we have noted previously, tax parameters do not enter the structures equations at all in the Michigan model. Further, corporate tax payments are a curious lagged function of the investment tax credit (among other variables) such that only a minor fraction of tax credit changes show up in changes in tax payments.

Results of simulation of 10-5-3, shown in Table 9.3 are roughly similar to those of simulation 1, involving increased investment tax credits for equipment and structures. Major differences involve the phase-in process, so that tax loss and increases in investment are less in earlier years with 10-5-3, and the greater stimulus to investment in structures stemming from 10-5-3. The DRI results using their original equations are very high relative to the other models, particularly for equipment. The MPS results here are relatively moderate, however. Thus DRI is the only model showing increases in total fixed investment greater than tax losses. Indeed all of the others show gains in investment far less than tax losses in all years except 1973 and 1974 in the case of BEA and 1973 in the case of Michigan, where tax losses were very low with 10-5-3.

Similarly, for simulation 4 involving an increase in the investment tax credit for equipment of 16.264 percentage points, a present value equivalent of 10-5-3, the DRI original equations offer extreme results. By the end of 1975, equipment investment has reached a peak of 41.5 percent above baseline, and is still 37.6 percent above baseline of the end of 1979 (Table 9.4). The hugh increase in the equipment tax credit even drives up structures investment very substantially in the original DRI model but does depress housing investment.

MPS blows up in this simulation with unborrowed reserves at their baseline values, as we have noted earlier. The other models, except Michigan, show quite varying but generally substantial investment responses in equipment and some positive and some negative responses in structures.

The C-E equations again serve mainly to knock down the extreme reactions in DRI and MPS and to reduce somewhat the Wharton responses. In general, except for simulations with the original DRI equations and MPS, the increases in total fixed investment are considerably less than the static tax loss in all years in all models.

The cut in corporate tax rate by some 10 percentage points accomplished in simulation 5 (Table 9.5) has a very small effect on investment in all models except MPS and, to some extent, Chase.

Simulation 6, the Office of Tax Analysis alternative involving modest acceleration of depreciation and increases in investment tax credits, is shown in Table 9.6. As with acceleration of depreciation on new acquisitions generally, the OTA alternative implies static tax losses beginning small and rising rapidly over the first few years. Once more, in all models except DRI and MPS, the increases in investment brought on by the increased tax incentive is considerably less than the direct tax losses to the Treasury.

The many tables and numbers we furnish offer more detail than most readers can use. Voluminous printouts of the results of some 84 simulations offer far more data. The most important lesson from all of this, however, is one that we suggested early in our study. The various models set forth, as the consequences of changes in tax parameters, very much the implications of the structural specifications with which they began.

Hence, in the full model simulations reported in Phase III, as with the individual investment equations discussed in Phase I and II, consequences of changes in investment tax parameters depended overwhelmingly on how those parameters entered the investment equations. In particular, where they were tied to cost-of-capital terms which were either specified to have large effects or were estimated to have large effects because they were tied implicitly or explicitly to other variables favorable to investment, changes in tax parameters had large consequences.

Of all of the models, DRI, as a consequence of these considerations, was clearly and consistently extremely high in its predicted effects of investment tax stimuli. Our own revised C-E equations, in the case of DRI and some of the other models, tended generally to moderate and equalize the implied role of tax parameters in determining investment.

We have some considerable preference in terms of our own priors for our equations yielding generally lower estimates of investment effects and confirming our views that none of the changes in tax parameters generally considered or considered in this study is "cost-effective." Sober analysis tends to draw the conclusion that a dollar of direct tax loss to the Treasury yields considerably less than a dollar of increased investment.

This said, however, we must acknowledge and indeed affirm that none of the major macroeconometric models that we have considered is well-equipped to analyze the effects of changes in tax parameters on investment.

For, essentially, investment is determined by expectations of the future as well as the current situation. Estimates of all equations in the models, but investment equations in particular, involve implicit if not explicit assumptions as to how expectations of the future change with changes in observed data.

We are thus on very shaky ground -- hardly any ground at all -- when we assume that changes in the cost of capital or other variables in some historical period have been associated with changes in expectations in the same manner as any historical or hypothetical changes in tax parameters are or will be associated with corresponding expectations of the future. We have noted this explicitly in connection with the failure of any of the models to handle the intertemporal substitution inducement to delay investment implicit in the phase-in process of 10-5-3. More generally, however, this objection applies to analysis of all of the tax parameter changes in all of our simulations.

The final result of our analysis, for now at least, must then be that one can get almost any answer one wants as to the effects of tax incentives for investment by making sure that the chosen model has specifications appropriate to one's purpose. The six models that we have examined give vastly different results. Our analysis of the equations and the simulations suggests that where large responses of investment to tax stimuli are indicated they hinge upon crucial, controversial assumptions.

To proceed with major acceleration of depreciation or investment credits on the assumption that they will have commensurate effects in increasing investment must then rest essentially on faith. Faith is indeed sometimes rewarded. But for our part, in this instance, we remain agnostic.

List of Tables

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* Available in Appendix C on request to Office of Tax Analysis.

Table 1 Investment Equations and Full Model Simulations Compared, Doubling Investment Credit for Equipment and Adding Credit for Structures, Change in Investment 1977-IV, Billions of 1972 Dollars and Percent of Baseline

(1)	(2)	(3)	(4)	(5)	(6)
Simulation		Equipment		Structures	
$k_e' = 2k_e; k_s' = k_e$		Original Equation	C-E Equation	Original Equation	C-E Equation
1.1 BEA					
		Billions of 1972 Dollars			
	Investment Equation	+9.0	+8.0	+1.4	+1.4
1.	Full Model, No Personal Tax Offset	7.2	7.1	1.1	.5
2.	Full Model, with Personal Tax Offset	7.2	6.7	1.5	-.0
		Percent of Baseline			
	Investment Equation	+9.8	+8.6	+3.5	+3.6
1.	Full Model, No Personal Tax Offset	7.9	7.8	2.6	1.4
2.	Full Model, with Personal Tax Offset	7.8	7.3	3.6	-.0
1.2 Chase					
		Billions of 1972 Dollars			
	Investment Equation	+4.3*	+2.8*	+1.4*	+1.3*
1.	Full Model, No Personal Tax Offset	5.6	7.0	3.6	3.5
2.	Full Model, with Personal Tax Offset	3.4	4.1	2.3	2.3
		Percent of Baseline			
	Investment Equation	+4.7*	+3.1*	+3.4*	+3.3*
1.	Full Model, No Personal Tax Offset	6.2	7.6	8.9	8.7
2.	Full Model, with Personal Tax Offset	3.7	4.5	5.8	5.7

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*Stock price, profits after tax, and profits-stock price ratio variables held at baseline values.

Table 1 Investment Equations and Full Model Simulations Compared, Doubling Investment Credit for Equipment and Adding Credit for Structures, Change in Investment 1977-IV, Billions of 1972 Dollars and Percent of Baseline

(1) Simulation $k'_e = 2k_e;\ k'_s = k_e$	(2)	(3) Equipment Original Equation	(4) Equipment C-E Equation	(5) Structures Original Equation	(6) Structures C-E Equation
1.3 DRI					
		Billions of 1972 Dollars			
	Investment Equation	+13.1	+2.8	+2.8	+3.2
1.	Full Model, No Personal Tax Offset	14.4	3.6	3.1	2.6
2.	Full Model, with Personal Tax Offset	13.6	2.7	3.2	2.8
		Percent of Baseline			
	Investment Equation	+14.2	+3.0	+6.3	+7.2
1.	Full Model, No Personal Tax Offset	15.7	3.9	7.7	6.5
2.	Full Model,with Personal Tax Offset	14.9	3.0	7.9	7.0
1.4 Michigan					
		Billions of 1972 Dollars			
	Investment Equation	1.4	1.6	.0	.0
1.	Full Model, No Personal Tax Offset	1.5	1.6	.1	.1
2.	Full Model, with Personal Tax Offset	.8	.9	-.4	-.4
		Percent of Baseline			
	Investment Equation	1.5	1.7	.0	.0
1.	Full Model, No Personal Tax Offset	1.6	1.8	.2	.1
2.	Full Model, with Personal Tax Offset	.8	1.0	-1.0	-.9

Table 1 Investment Equations and Full Model Simulations Compared, Doubling Investment Credit for Equipment and Adding Credit for Structures, Change in Investment 1977-IV, Billions of 1972 Dollars and Percent of Baseline

(1)	(2)	(3)	(4)	(5)	(6)
Simulation		Equipment		Structures	
$k'_e = 2k_e$; $k'_s = k_e$		Original Equation	C-E Equation	Original Equation	C-E Equation
1.5	MPS (with Unborrowed Reserves at Baseline Values)				
		Billions of 1972 Dollars			
	Investment Equation	+12.7	+2.7	+2.4	+3.2
1.	Full Model, No Personal Tax Offset	+18.0	+10.8	+6.0	+4.5
2.	Full Model, with Personal Tax Offset	+15.7	+4.3	+3.9	+3.6
		Percent of Baseline			
	Investment Equation	+15.1	+2.8	+5.7	+6.8
1.	Full Model, No Personal Tax Offset	+19.7	+11.8	+15.0	+11.3
2.	Full Model, with Personal Tax Offset	+17.2	+4.7	+9.7	+8.9
1.5-M1	MPS (with M1 at Baseline Values)				
		Billions of 1972 Dollars			
	Investment Equation	+12.7	+2.7	+2.4	+3.2
1.	Full Model, No Personal Tax Offset	+13.1	+4.4	+3.3	+2.2
2.	Full Model, with Personal Tax Offset	+18.5	+8.2	+5.4	+5.0
		Percent of Baseline			
	Investment Equation	+15.1	+2.8	+5.7	+6.8
1.	Full Model, No Personal Tax Offset	+14.4	+4.8	+8.1	+5.6
2.	Full Model, with Personal Tax Offset	+20.2	+9.0	+13.5	+12.4

Table 1 Investment Equations and Full Model Simulations Compared, Doubling Investment Credit for Equipment and Adding Credit for Structures, Change in Investment 1977-IV, Billions of 1972 Dollars and Percent of Baseline

1.6 Wharton

Simulation $k'_e = 2k_e$; $k'_s = k_e$	Equipment Original Equation	 C-E Equation	Structures Original Equation	 C-E Equation
	Billions of 1972 Dollars			
Investment Equation	5.1	3.2	2.4	1.5
1. Full Model, No Personal Tax Offset	7.3	3.0	3.2	1.3
2. Full Model, with Personal Tax Offset	6.7	2.5	3.0	1.1
	Percent of Baseline			
Investment Equation	4.9	2.9	5.0	3.0
1. Full Model, No Personal Tax Offset	8.0	3.3	8.0	3.3
2. Full Model, with Personal Tax Offset	7.3	2.8	7.3	2.8

Table 2. Full Model Simulations, Percent Changes from Baseline, Investment in Equipment, Structures and Housing, and Total Fixed Investment, Mean, Low, High and Range of Models

A. End of First Year

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Original				C-E			
Simulations	Measures	Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed
1. ITC: no personal tax offset									
$k'_e = 2k_e;\ k'_s = k_e$									
	Mean	1.9	1.6	.2	1.3	1.6	1.2	.2	1.1
	Low	.8	.1	-.0	.4	.7	.1	-.1	.5
	High	2.8	3.0	.5	2.0	3.5	3.4	.6	1.8
	Range	2.0	2.9	.5	1.7	2.8	3.3	.7	1.3
2. ITC: with personal tax offset									
$k'_e = 2k_e;\ k'_s = k_e$									
	Mean	1.1	1.1	-.3	.7	.4	.3	-.3	.2
	Low	.6	-.4	-1.2	.1	-1.1	-.8	-1.2	-.2
	High	1.8	3.2	.8	1.7	1.1	2.0	.8	.5
	Range	1.2	3.6	2.0	1.6	2.2	2.8	2.0	.8
3. 10-5-3									
	Mean	1.0	1.6	.2	.9	.8	1.2	.2	.7
	Low	.4	-.0	-.0	.3	.3	-.4	.0	.1
	High	2.3	3.9	.3	1.3	2.1	4.9	.4	1.6
	Range	1.9	3.9	.3	1.0	1.8	5.3	.4	1.4
4. $\Delta k'_e$ = +16.264%									
	Mean	6.2	-1.2	.2	2.7	4.7	-1.6	.2	1.8
	Low	2.3	-12.0	-.5	1.1	1.5	-13.0	-.7	.6
	High	9.4	3.1	1.0	4.6	8.8	2.0	1.0	4.3
	Range	7.1	15.1	1.5	3.5	7.3	15.0	1.7	3.7
5. $\Delta u'$ = -9.815%									
	Mean	1.4	1.8	.2	1.2	1.9	1.2	.4	1.2
	Low	-1.0	-.1	-.6	-.5	-1.1	-.3	-.6	-.5
	High	3.5	3.3	.5	1.9	5.0	3.8	.5	2.3
	Range	4.5	3.4	1.1	2.4	6.1	4.1	1.1	2.8
6. OTA Alternative									
	Mean	1.2	1.1	.1	.8	1.0	.8	.2	.7
	Low	.7	.1	-.0	.4	.5	-.2	.0	.2
	High	1.8	2.4	.4	1.4	2.2	3.1	.4	1.2
	Range	1.1	2.3	.4	1.0	1.7	3.3	.4	1.0

Table 2 (Continued)

B. End of Third Year

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Original				C-E			
Simulations	Measures	Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed
1. ITC: no personal tax offset									
$k'_e = 2k_e$; $k'_s = k_e$									
	Mean	8.7	6.9	-1.3	5.5	5.2	4.3	-.2	3.5
	Low	1.5	.2	-8.3	.8	1.7	.2	-4.3	.8
	High	16.0	10.9	1.7	9.3	9.1	8.0	2.0	5.3
	Range	14.5	10.7	10.0	8.6	7.4	7.8	6.3	4.5
2. ITC: with personal tax offset									
$k'_e = 2k_e$; $k'_s = k_e$									
	Mean	7.2	5.4	-1.4	4.4	2.6	2.6	-.3	1.8
	Low	.9	-.8	-5.7	.1	-1.0	-.7	-2.7	-.3
	High	15.4	11.1	1.8	9.7	6.8	7.6	2.9	4.4
	Range	14.5	11.9	7.5	9.7	7.8	8.3	5.6	4.7
3. 10-5-3									
	Mean	5.3	7.4	-.8	4.1	3.8	4.7	.2	3.1
	Low	2.5	.4	-8.5	1.9	1.3	.3	-3.8	1.0
	High	10.4	14.4	1.6	8.1	5.1	10.3	2.0	5.0
	Range	7.9	14.0	10.1	6.2	3.8	10.0	5.8	4.0
4. $\Delta k'_e = +16.264\%$									
	Mean	20.4	3.0	-2.4	10.0	11.3	.6	-1.2	5.3
	Low	3.6	-10.9	-11.4	1.8	3.7	-14.6	-11.1	1.8
	High	41.5	15.2	3.2	21.1	18.8	5.5	2.8	7.5
	Range	37.9	26.1	14.6	19.3	15.1	20.1	13.9	5.7
5. $\Delta u' = -9.815\%$									
	Mean	4.5	5.6	-1.1	3.3	3.5	3.3	-.1	2.5
	Low	-1.8	-.1	-8.2	-.8	-2.0	-1.7	-4.0	-1.0
	High	8.8	10.4	1.8	5.0	8.2	7.0	2.1	5.6
	Range	10.6	10.5	10.0	5.8	10.2	8.7	6.1	6.6
6. OTA Alternative									
	Mean	5.1	4.7	-.7	3.3	3.2	3.1	.0	2.4
	Low	1.2	.2	-6.1	.6	1.2	.1	-3.6	.6
	High	10.6	9.5	1.3	7.0	5.4	7.3	1.6	3.7
	Range	9.4	9.3	7.4	6.4	4.2	7.2	5.2	3.1

Table 2 (Continued)

C. End of Fifth Year

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Original				C-E			
Simulations	Measures	Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed
1. ITC: no personal tax offset									
$k'_e = 2k_e$; $k'_s = k_e$									
	Mean	9.8	7.1	-.7	5.9	6.0	5.2	.6	4.2
	Low	1.6	.2	-6.2	.8	1.8	-.1	-4.4	.9
	High	19.7	15.0	4.2	13.9	11.8	11.3	5.6	9.8
	Range	18.1	14.8	10.4	13.1	10.0	11.2	10.0	8.9
2. ITC: with personal tax offset									
$k'_e = 2k_e$; $k'_s = k_e$									
	Mean	8.6	5.5	-1.2	4.9	3.9	3.9	.2	2.7
	Low	.8	-1.0	-3.5	-.2	1.0	-.9	-1.6	-.0
	High	17.2	9.7	1.2	9.6	7.4	8.9	2.9	3.8
	Range	16.4	10.7	4.7	9.8	6.4	9.8	4.5	3.8
3. 10-5-3									
	Mean	7.5	9.5	.2	5.6	5.8	7.7	1.4	4.8
	Low	3.2	.3	-7.3	1.6	2.6	.3	-5.0	1.6
	High	15.4	17.0	5.4	10.5	10.7	17.4	6.4	10.7
	Range	12.2	16.7	12.7	8.9	8.1	17.1	11.4	9.1
4. $\Delta k'_e = +16.264\%$									
	Mean	15.2	.6	-2.3	6.5	10.1	-.8	.4	4.8
	Low	2.8	-12.9	-11.5	1.4	3.0	-16.5	-7.3	1.4
	High	32.9	12.3	2.4	13.0	18.4	5.9	7.6	12.4
	Range	30.1	25.2	13.9	11.6	15.4	22.4	14.9	11.0
5. $\Delta u' = -9.815\%$									
	Mean	3.3	4.0	.3	2.5	3.1	3.5	.8	2.5
	Low	-2.0	-.1	-5.4	-.9	-2.1	-1.0	-3.5	-.9
	High	6.7	9.3	3.8	6.3	7.8	8.9	4.6	6.5
	Range	8.7	9.4	9.2	7.2	9.9	9.9	8.1	7.4
6. OTA Alternative									
	Mean	4.3	3.5	-.2	2.8	2.9	3.3	.5	2.2
	Low	1.0	-.5	-4.0	.0	1.1	.1	-3.0	.6
	High	8.3	8.4	3.4	6.8	6.5	7.4	4.1	5.9
	Range	7.3	8.9	7.4	6.8	5.4	7.3	7.1	5.4

Table 2 (Continued)

D. End of Seventh Year

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		Original				C-E			
Simulations	Measures	Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed
1. ITC: no personal tax offset									
$k'_e = 2k_e; k'_s = k_e$									
	Mean	9.0	5.3	.2	5.7	5.7	4.4	1.4	4.2
	Low	1.6	-1.0	-1.1	.8	1.8	.1	-.1	.9
	High	17.7	9.4	1.8	9.8	9.9	8.5	3.6	6.4
	Range	16.1	10.4	2.9	9.0	8.1	8.4	3.7	5.5
2. ITC: with personal tax offset									
$k'_e = 2k_e; k'_s = k_e$									
	Mean	7.9	4.6	.4	5.0	4.2	4.1	1.7	3.5
	Low	.7	-.8	-1.8	-.2	.9	-.7	-1.4	-.1
	High	16.5	9.0	3.4	10.3	8.1	9.8	7.2	6.8
	Range	15.8	9.8	4.7	10.5	7.2	10.5	8.6	6.9
3. 10-5-3									
	Mean	9.4	9.3	1.3	7.2	6.7	7.9	3.5	6.1
	Low	2.9	.2	-1.8	1.7	3.2	.2	-.3	1.8
	High	23.0	20.0	4.9	16.0	10.8	16.1	8.9	8.9
	Range	20.1	19.8	6.7	14.3	7.6	15.9	9.2	7.0
4. $\Delta k'_e = +16.264\%$									
	Mean	-6.6	-3.2	-2.0	-4.6	9.8	-1.0	1.9	5.0
	Low	-123.2	-12.4	-11.6	-66.1	2.9	-13.4	-.4	1.4
	High	37.6	6.1	1.0	18.5	15.1	6.1	5.9	7.4
	Range	160.8	18.5	12.8	84.6	12.2	19.5	6.3	6.0
5. $\Delta u' = -9.815\%$									
	Mean	3.3	3.1	.8	2.6	3.1	2.9	1.2	2.5
	Low	-1.3	-1.2	-1.4	-.4	-1.5	-1.7	-1.4	-.9
	High	5.6	7.2	.9	4.7	8.5	7.3	1.7	6.0
	Range	6.9	8.4	2.3	5.1	10.0	9.0	3.1	7.0
6. OTA Alternative									
	Mean	4.0	2.5	.8	2.8	2.6	2.5	1.5	2.4
	Low	1.0	-1.5	-.3	.6	1.1	.1	.4	.7
	High	9.6	5.6	2.3	6.5	4.2	6.2	5.0	4.1
	Range	8.6	7.1	2.6	5.9	3.1	6.1	4.6	3.4

Table 3.1 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Simulations			Percent Changes from Baseline				
			Investment			Capital Stock	
	Equations	Variables	Equipment	Structures	Housing	Equipment + Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$							
	Orig.	Peak	10.8	10.0	-.0	2.5	-.0
		Quarter of Peak	12	12	1	28	1
		1979-IV	8.3	-1.0	-1.1	2.5	-.8
	C-E	Peak	9.9	2.5	.6	2.2	-.0
		Quarter of Peak	28	12	27	28	1
		1979-IV	9.9	2.1	-.1	2.2	-.5
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$							
	Orig.	Peak	10.0	10.4	.2	2.4	.0
		Quarter of Peak	14	12	7	28	7
		1979-IV	7.9	.3	-.3	2.4	-.5
	C-E	Peak	8.1	.7	.9	1.6	.0
		Quarter of Peak	28	27	9	28	10
		1979-IV	8.1	.7	.6	1.6	-.1
3. 10-5-3							
	Orig.	Peak	8.5	14.6	-.0	2.4	-.0
		Quarter of Peak	28	14	1	28	1
		1979-IV	8.5	4.3	-1.8	2.4	-1.0
	C-E	Peak	10.8	4.8	.6	1.9	-.0
		Quarter of Peak	28	28	27	28	1
		1979-IV	10.8	4.8	-.3	1.9	-.5
4. $\Delta k'_e$ = +16.264%							
	Orig.	Peak	21.3	-.0	.3	3.3	.0
		Quarter of Peak	12	1	27	28	7
		1979-IV	14.9	-6.6	-.2	3.3	-.9
	C-E	Peak	18.8	4.0	.2	3.7	-.0
		Quarter of Peak	12	10	27	28	1
		1979-IV	15.1	.6	-.4	3.7	-1.0

Table 3.1
(continued)

Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Simulations			Percent Changes from Baseline				
			Investment			Capital Stock	
	Equations	Variables	Equipment	Structures	Housing	Equipment + Structures	Housing
5. $\Delta u' = -9.815\%$							
	Orig.	Peak	8.8	10.4	-.0	1.8	-.0
		Quarter of Peak	12	12	1	28	1
		1979-IV	4.9	-1.2	-.7	1.8	-.8
	C-E	Peak	7.1	2.6	.7	1.6	-.0
		Quarter of Peak	12	10	27	28	1
		1979-IV	6.4	1.7	.2	1.6	-.4
6. OTA Alternative							
	Orig.	Peak	6.4	6.8	.1	1.2	-.0
		Quarter of Peak	12	12	26	28	1
		1979-IV	3.2	-1.5	-.3	1.2	-.5
	C-E	Peak	5.4	2.2	.8	1.1	-.0
		Quarter of Peak	12	10	27	28	1
		1979-IV	4.2	.9	.4	1.1	-.3

Table 3.2 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e;\ k'_s = k_e$								
	Orig.	Peak	6.9	9.2	1.7	6.4	4.5	8.7
		Quarter of Peak	26	21	20	28	28	28
		1979-IV	6.8	8.7	1.0	6.4	4.5	8.7
	C-E	Peak	8.8	8.9	1.7	7.5	4.3	8.7
		Quarter of Peak	26	21	17	28	28	28
		1979-IV	8.5	8.5	.9	7.5	4.3	8.7
2. ITC: with personal tax offset $k'_e = 2k_e;\ k'_s = k_e$								
	Orig.	Peak	3.7	6.0	2.8	4.1	3.1	7.8
		Quarter of Peak	20,21	21	10	28	28	28
		1979-IV	2.7	5.7	-.5	4.1	3.1	7.8
	C-E	Peak	4.5	6.0	1.3	4.7	3.0	7.7
		Quarter of Peak	20	21	17	28	28	28
		1979-IV	3.8	5.3	-.4	4.7	3.0	7.7
3. 10-5-3								
	Orig.	Peak	7.0	12.8	2.6	5.4	5.4	9.0
		Quarter of Peak	28	28	20	28	28	28
		1979-IV	7.0	12.8	1.7	5.4	5.4	9.0
	C-E	Peak	10.8	12.8	2.7	7.6	5.2	8.9
		Quarter of Peak	27	28	24	28	28	28
		1979-IV	10.2	12.8	1.6	7.6	5.2	8.9
4. $\Delta k'_e = +16.264\%$								
	Orig.	Peak	10.4	6.3	1.7	9.2	3.7	9.0
		Quarter of Peak	12	21	24	28	28	28
		1979-IV	9.7	6.1	1.0	9.2	3.7	9.0
	C-E	Peak	11.0	6.1	1.6	9.9	3.5	9.1
		Quarter of Peak	26	28	16	28	28	28
		1979-IV	10.7	6.1	.8	9.9	3.5	9.1

Table 3.2 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. Δu' = - 9.815%								
	Orig.	Peak	6.0	7.8	1.2	6.2	4.3	8.8
		Quarter of Peak	11	17	20	28	28	28
		1979-IV	5.6	7.2	.7	6.2	4.3	8.8
	C-E	Peak	8.8	7.9	1.1	8.2	4.2	8.8
		Quarter of Peak	27	17	24	28	28	28
		1979-IV	8.5	7.3	.6	8.2	4.2	8.8
6. OTA Alternative								
	Orig.	Peak	3.0	5.3	1.3	4.0	3.1	8.3
		Quarter of Peak	26	21	17	28	28	28
		1979-IV	2.9	4.5	.4	4.0	3.1	8.3
	C-E	Peak	4.1	5.1	1.3	4.7	3.0	8.4
		Quarter of Peak	26	17,21	16	28	28	28
		1979-IV	3.9	4.4	.4	4.7	3.0	8.4

Table 3.3 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

DRI

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e; k'_s = k_e$								
	Orig.	Peak	17.7	11.2	0.9	10.4	2.9	0.0
		Quarter of Peak	28	10	6	28	27,28	5
		1979-IV	17.7	6.3	-0.5	10.4	2.9	-0.5
	C-E	Peak	5.1	8.2	3.6	2.9	2.3	.1
		Quarter of Peak	12	10	28	28	27	28
		1979-IV	4.6	6.0	3.6	2.9	2.3	.1
2. ITC: with personal tax offset $k'_e = 2k_e; k'_s = k_e$								
	Orig.	Peak	16.5	11.1	3.4	9.8	2.9	0.1
		Quarter of Peak	28	12	28	28	28	10
		1979-IV	16.5	6.4	3.4	9.8	2.9	-0.1
	C-E	Peak	3.8	7.6	7.2	2.0	2.4	.5
		Quarter of Peak	13	12,17	28	27	28	27
		1979-IV	3.5	6.6	7.2	2.0	2.4	.5
3. 10-5-3								
	Orig.	Peak	23.0	20.0	1.2	10.3	5.4	0.0
		Quarter of Peak	28	28	8,9	28	28	8
		1979-IV	23.0	20.0	0.8	10.3	5.4	-0.0
	C-E	Peak	5.7	16.1	8.9	2.7	4.2	.6
		Quarter of Peak	28	28	28	28	28	28
		1979-IV	5.7	16.1	8.9	2.7	4.2	0.0
4. $\Delta k'_e = +16.264\%$								
	Orig.	Peak	41.5	16.3	1.5	23.3	2.6	0.0
		Quarter of Peak	12	10	5,6	28	23	5
		1979-IV	37.6	3.0	-1.0	23.3	2.6	-1.1
	C-E	Peak	11.4	6.7	2.4	5.5	0.9	0.2
		Quarter of Peak	11	10	7,8	28	18	27,28
		1979-IV	8.0	0.6	5.9	5.5	0.8	0.2

Table 3.3 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

DRI

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. $\Delta u' = - 9.815\%$								
	Orig.	Peak	6.9	9.0	2.9	3.0	2.1	.1
		Quarter of Peak	10	9,10	25,26	28	28	10,26
		1979-IV	4.9	5.6	2.6	3.0	2.1	.1
	C-E	Peak	2.1	4.7	3.0	1.0	1.2	.3
		Quarter of Peak	9,10	9	25,26	27,28	28	26
		1979-IV	1.9	3.5	2.9	1.0	1.2	.3
6. OTA Alternative								
	Orig.	Peak	10.6	9.6	2.3	5.9	2.4	0.0
		Quarter of Peak	12	11	28	28	28	6
		1979-IV	9.6	5.6	2.3	5.9	2.4	-0.1
	C-E	Peak	3.4	7.4	5.0	1.5	2.1	.3
		Quarter of Peak	12	11	28	27,28	28	28
		1979-IV	2.7	6.2	5.8	1.5	1.5	.3

Table 3.4 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$								
	Orig.	Peak	1.7	.2	.0	NOT AVAILABLE		
		Quarter of Peak	23	10	28			
		1979-IV	1.6	.1	.0			
	C-E	Peak	1.9	.2	.0			
		Quarter of Peak	23	9	5,6			
		1979-IV	1.8	.1	-.0			
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$								
	Orig.	Peak	.9	.0	.0			
		Quarter of Peak	11	.1	.1			
		1979-IV	.7	-.8	-1.3			
	C-E	Peak	1.1	-.0	.0			
		Quarter of Peak	10	1	1			
		1979-IV	.9	-.7	-1.3			
3. 10-5-3								
	Orig.	Peak	3.8	.5	.8			
		Quarter of Peak	12	10	28			
		1979-IV	2.9	.2	.8			
	C-E	Peak	3.9	.4	.8			
		Quarter of Peak	11	10	28			
		1979-IV	3.2	.2	.8			
4. $\Delta k'_e = +16.264\%$								
	Orig.	Peak	3.7	.4	.0			
		Quarter of Peak	11	10	6			
		1979-IV	2.6	.1	-.1			
	C-E	Peak	3.8	.4	.0			
		Quarter of Peak	10	9,10	5			
		1979-IV	2.9	.1	-.1			

Table 3.4 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. $\Delta u' = - 9.815\%$								
	Orig.	Peak	- .4	.2	.6	NOT AVAILABLE		
		Quarter of Peak	1	28	28			
		1979-IV	-1.3	.2	.6			
	C-E	Peak	-.5	.1	.6			
		Quarter of Peak	1	28	28			
		1979-IV	-1.5	.1	.6			
6. OTA Alternative								
	Orig.	Peak	1.2	.2	.4			
		Quarter of Peak	12	10	28			
		1979-IV	1.0	.1	.4			
	C-E	Peak	1.2	.2	.4			
		Quarter of Peak	11	10	28			
		1979-IV	1.1	.1	.4			

Table 3.5 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

MPS (with Unborrowed Reserves at Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e;\ k_s' = k_e$								
	Orig.	Peak	19.7	15.1	4.4	10.2	3.9	.7
		Quarter of Peak	20	21	21	28	28	28
		1979-IV	11.6	9.4	1.8	10.2	3.9	.7
	C-E	Peak	11.8	11.4	5.8	5.6	3.0	.9
		Quarter of Peak	20	18	21	27	28	28
		1979-IV	5.5	5.6	3.1	5.6	3.0	.9
2. ITC: with personal tax offset $k_e' = 2k_e;\ k_s' = k_e$								
	Orig.	Peak	17.2	10.0	3.0	9.0	2.6	-.0
		Quarter of Peak	20	21	27	28	28	1
		1979-IV	12.7	9.0	2.8	9.0	2.6	-.2
	C-E	Peak	6.2	9.9	5.5	2.3	2.5	-.0
		Quarter of Peak	28	25	27	28	28	1
		1979-IV	6.2	9.8	5.3	2.3	2.5	-.1
3. 10-5-3								
	Orig.	Peak	10.9	17.1	5.9	5.6	4.5	.9
		Quarter of Peak	21	21	23	28	28	28
		1979-IV	7.8	12.7	4.9	5.6	4.5	.9
	C-E	Peak	10.9	17.4	7.1	5.2	4.5	1.1
		Quarter of Peak	21	20	23	28	28	28
		1979-IV	6.7	10.7	6.0	5.2	4.5	1.1
4. $\Delta k_e' = +16.264\%$								
	Orig.	Peak	32.6	13.9	6.6	12.9	2.9	.6
		Quarter of Peak	14	17	9	20	24	21
		1979-IV	-123.2	-12.4	-11.6	-6.3	2.2	.1
	C-E	Peak	18.4	5.9	7.8	9.1	1.2	1.2
		Quarter of Peak	20	19	21	27	26	28
		1979-IV	8.6	.2	3.3	9.0	1.2	1.2

Table 3.5 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

MPS (with Unborrowed Reserves at Baseline Values)

(1) Simulations	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. $\Delta u' = -9.815\%$								
	Orig.	Peak	7.2	9.6	3.8	3.6	2.6	.6
		Quarter of Peak	16	17	20	26	28	28
		1979-IV	2.8	4.7	.9	3.5	2.6	.6
	C-E	Peak	6.7	9.2	4.6	3.2	2.4	.7
		Quarter of Peak	20	18	20	26	28	28
		1979-IV	1.5	3.3	.9	3.1	2.4	.7
6. OTA Alternative								
	Orig.	Peak	8.6	8.5	3.4	4.4	2.3	.5
		Quarter of Peak	16	18	21	27	28	28
		1979-IV	4.0	4.2	1.2	4.4	2.3	.5
	C-E	Peak	6.5	7.7	4.2	3.1	1.9	.6
		Quarter of Peak	20	18	21	26	28	28
		1979-IV	1.8	2.3	1.3	3.0	1.9	.6

Table 3.5 -M1 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

MPS, with M-1 at Baseline Values

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e$; $k_s' = k_e$								
	Orig.	Peak	14.9	9.0	.0	7.3	2.1	0
		Quarter of Peak	16	17	1	26	28	1,2
		1979-IV	6.8	2.5	-13.7	7.3	2.1	-1.8
	C-E	Peak	5.3	7.1	.0	2.2	1.5	0
		Quarter of Peak	17	17	2	23	24	1
		1979-IV	-2.6	- .4	-14.8	1.5	1.4	-1.7
2. ITC: with personal tax offset $k_e' = 2k_e$; $k_s' = k_e$								
	Orig.	Peak	20.2	13.7	7.6	10.6	3.6	1.1
		Quarter of Peak	20	21	27	28	28	28
		1979-IV	14.1	11.4	7.5	10.6	3.6	1.1
	C-E	Peak	9.0	12.4	5.7	3.8	3.1	1.1
		Quarter of Peak	20	20	21	27	28	28
		1979-IV	3.3	7.3	2.6	3.8	3.1	1.1
3. 10-5-3								
	Orig.	Peak	5.7	10.5	.0	2.5	2.5	0
		Quarter of Peak	19	18	1	24	27	1
		1979-IV	-.8	1.8	-17.1	2.2	2.5	-1.9
	C-E	Peak	3.2	11.7	.0	1.3	2.7	0
		Quarter of Peak	18	18	1	23	26	1
		1979-IV	-4.9	1.0	-18.4	.4	2.6	-1.9
4. $\Delta k_e' = +16.264\%$								
	Orig.	Peak	30.5	7.3	.0	14.6	2.0	0
		Quarter of Peak	15	21	1	24	28	3
		1979-IV	-6.6	5.7	-5.3	12.4	2.0	-2.0
	C-E	Peak	10.9	1.2	.1	4.8	.1	0
		Quarter of Peak	16	14	4	24	17	5
		1979-IV	.1	-6.4	-17.9	4.2	-.7	-2.1

Table 3.5-M1 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

MPS, with M-1 at Baseline Values

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. $\Delta u' = - 9.815\%$								
	Orig.	Peak	3.8	5.4	.0	1.6	1.3	0
		Quarter of Peak	14	17	2	22	25	2,3
		1979-IV	-.2	.4	-8.8	1.3	1.3	-1.3
	C-E	Peak	1.5	5.5	.0	.6	1.3	0
		Quarter of Peak	13	17	2	19	25	1
		1979-IV	-2.6	.5	-9.8	-.1	1.3	-1.4
6. OTA Alternative								
	Orig.	Peak	5.6	5.0	.0	2.6	1.2	0
		Quarter of Peak	15	17	1,2	24	26	1,2
		1979-IV	1.4	.6	-7.5	2.5	1.2	-1.1
	C-E	Peak	2.1	4.7	.0	.9	1.1	0
		Quarter of Peak	16	17	1	21	24	1
		1979-IV	-2.3	-.4	-8.8	.3	1.0	-1.1

Table 3.6 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Wharton

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock *		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$								
	Orig.	Peak	8.0	8.0	1.6			
		Quarter of Peak	21	21	10,14			
		1979-IV	8.0	8.0	-.2	6.8	2.8	.2
	C-E	Peak	4.0	4.0	1.0			
		Quarter of Peak	28	28	9,10			
		1979-IV	4.0	4.0	.9	3.1	1.3	.1
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$								
	Orig.	Peak	7.4	7.4	1.8			
		Quarter of Peak	21	21	17			
		1979-IV	7.1	7.2	-1.8	6.0	2.5	.1
	C-E	Peak	3.1	3.1	1.1			
		Quarter of Peak	28	28	18			
		1979-IV	3.1	3.1	-1.4	2.3	1.0	-.1
3. 10-5-3								
	Orig.	Peak	7.5	5.9	1.8			
		Quarter of Peak	28	28	17			
		1979-IV	7.5	5.9	1.5	4.7	1.4	.4
	C-E	Peak	4.3	3.0	3.0			
		Quarter of Peak	28	28	28			
		1979-IV	4.3	3.0	3.0	2.4	.5	.3
4. $\Delta k'_e$ = +16.264%								
	Orig.	Peak	18.6	-5.8	3.1			
		Quarter of Peak	28	1	12			
		1979-IV	18.6	-9.5	-.2	17.4	-5.7	.3
	C-E	Peak	13.4	-5.8	2.4			
		Quarter of Peak	28	1	6			
		1979-IV	13.4	-13.3	2.1	12.5	-7.2	.3

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* Peaks not readily available.

Table 3.6 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Investment and Capital Stocks

Wharton

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Simulations			Percent Changes from Baseline					
			Investment			Capital Stock*		
	Equations	Variables	Equipment	Structures	Housing	Equipment	Structures	Housing
5. $\Delta u' = -9.815\%$								
	Orig.	Peak	2.6	2.2	1.2			
		Quarter of Peak	28	28	14			
		1979-IV	2.6	2.2	.9	2.1	.8	.2
	C-E	Peak	1.5	1.3	1.7			
		Quarter of Peak	28	28	28			
		1979-IV	1.5	1.3	1.7	1.1	.5	.2
6. OTA Alternative								
	Orig.	Peak	3.5	2.2	1.0			
		Quarter of Peak	28	28	13			
		1979-IV	3.5	2.2	.7	2.9	.7	.2
	C-E	Peak	2.1	1.0	1.6			
		Quarter of Peak	28	28	28			
		1979-IV	2.1	1.0	1.6	1.7	.3	.2

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*Peaks not readily available.

Table 4.1 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
			GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
	Equations	Variables	(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	1.1	.8	2.4	15.8	.8	.9	-.2	430.4
		Quarter of Peak	10	11	28	19	28	12	1	25
		1979-IV	.5	.5	2.4	10.8	.8	.5	-8.5	220.5
	C-E	Peak	1.0	.8	2.7	8.3	.6	.6	-.3	354.7
		Quarter of Peak	28	28	28	28	28	28	1	26
		1979-IV	1.0	.8	2.7	8.3	.6	.6	-10.1	181.6
2. ITC: with personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	.6	-.0	.7	9.7	.4	.7	2.6	69.0
		Quarter of Peak	11	12	12	19	26	13	3	26
		1979-IV	-.2	-.8	-1.1	5.2	.4	.1	-1.7	35.6
	C-E	Peak	.2	-.2	.1	2.0	1.4	.4	4.4	22.8
		Quarter of Peak	13	13	13	20	14	13	3	26
		1979-IV	.1	-.6	-1.0	1.1	-.0	.1	-1.5	7.6
3. 10-5-3										
	Orig.	Peak	1.1	1.3	4.2	17.0	1.0	.9	-.2	440.1
		Quarter of Peak	28	28	28	19	28	12	1	26
		1979-IV	1.1	1.3	4.2	13.1	1.0	.8	-13.3	219.2
	C-E	Peak	1.6	1.5	4.5	9.7	.6	.9	-.2	388.5
		Quarter of Peak	28	28	28	28	28	28	1	26
		1979-IV	1.6	1.5	4.5	9.7	.6	.9	-14.3	180.6

Table 4.1 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	1.4	1.0	3.1	19.4	1.0	1.1	-.2	513.6
		Quarter of Peak	9	11	28	19	28	11	1	26
		1979-IV	.7	.7	3.1	13.3	1.0	.7	-10.9	260.2
	C-E	Peak	1.5	1.0	3.4	19.4	1.1	1.1	-.8	451.0
		Quarter of Peak	9	10	28	19	28	11	1	26
		1979-IV	1.0	.8	3.4	13.9	1.1	.8	-13.1	227.7
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	1.0	.7	2.2	14.3	.8	.8	-.2	392.9
		Quarter of Peak	9	11	11	19	28	12	1	26
		1979-IV	.3	.4	2.0	9.0	.8	.4	-6.1	200.3
	C-E	Peak	.7	.7	2.3	9.0	.5	.5	-.3	327.3
		Quarter of Peak	28	28	28	19	28	28	1	26
		1979-IV	.7	.7	2.3	6.6	.5	.5	-7.7	166.6
6. OTA Alternative										
	Orig.	Peak	.8	.6	1.9	11.1	.6	.7	-.2	195.6
		Quarter of Peak	9	11	10	19	28	12	1	26
		1979-IV	.1	.3	1.3	6.7	.6	.3	4.2	98.0
	C-E	Peak	.6	.5	1.5	8.0	.4	.4	.3	147.2
		Quarter of Peak	9	11	28	19	28	12	1	26
		1979-IV	.4	.4	1.5	5.6	.4	.4	-5.5	73.6

Table 4.2 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
			Percent Changes from Baseline							
Simulations	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Utility Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	1.7	1.5	2.5	.9	.5	1.0	-.1	218.0
		Quarter of Peak	27	28	28	22	27	28	1	26
		1979-IV	1.6	1.5	2.5	.6	.3	1.0	-11.6	123.3
	C-E	Peak	1.8	1.6	2.7	1.3	.6	1.0	-.1	214.5
		Quarter of Peak	27	28	28	22	27	27	1	26
		1979-IV	1.8	1.6	2.7	.9	.3	1.0	-11.9	122.8
2. ITC: with personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	-.0	-.4	-.6	-.3	.0	-.0	7.0	14.5
		Quarter of Peak	22	1	1	1	1	1	6	6
		1979-IV	-.2	-1.1	-1.4	-4.2	-1.2	-.4	4.9	-22.6
	C-E	Peak	.1	-.4	-.6	-.4	.0	-.0	5.5	10.2
		Quarter of Peak	22	1	1	1	1	1	7	5
		1979-IV	-.1	-1.0	-1.3	-3.8	-1.1	-.4	4.6	-22.5
3. 10-5-3										
	Orig.	Peak	2.4	2.4	3.7	1.1	.8	1.6	.1	346.7
		Quarter of Peak	27	28	28	27	27	28	2	26
		1979-IV	2.4	2.4	3.7	.7	.1	1.6	-19.3	193.4
	C-E	Peak	2.7	2.6	4.2	2.1	.9	1.7	.2	320.4
		Quarter of Peak	27	28	28	28	27	28	2	26
		1979-IV	2.7	2.6	4.2	2.1	.1	1.7	-20.9	192.7

Table 4.2 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Chase

(1) Simulations	(2) Equations	(3) Variables	(4) GNP (1972 Dollars)	(5) Per. Con. Exp. (1972 Dollars)	(6) Exp. for Con. Dur. (1972 Dollars)	(7) Percent Changes from Baseline Utility Bond Rate	(8) GNP Price Defla- tor	(9) Employ- ment	(10) Unemploy- ment Rate	(11) Federal Budget Deficit
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	1.8	1.6	2.7	1.8	.7	1.0	-.6	245.5
		Quarter of Peak	26	26	28	16	27	20	1	26
		1979-IV	1.7	1.5	2.7	.4	.5	.9	-10.7	132.7
	C-E	Peak	1.8	1.6	2.8	1.8	.8	1.0	-.6	246.6
		Quarter of Peak	27	26,28	28	16	27	19	1	26
		1979-IV	1.8	1.6	2.8	.5	.6	.9	-10.8	133.5
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	1.4	1.3	2.2	1.6	.8	.9	-.6	206.7
		Quarter of Peak	26,27	26,28	28	16	27	28	1	26
		1979-IV	1.3	1.3	2.2	.2	.6	.9	-9.9	111.7
	C-E	Peak	1.7	1.5	2.7	2.3	.9	.9	.7	190.3
		Quarter of Peak	27	26,28	28	16	27	27	1	26
		1979-IV	1.6	1.5	2.7	1.0	.6	.9	-10.6	106.9
6. OTA Alternative										
	Orig.	Peak	.9	.8	1.4	.6	.2	.6	-.0	87.2
		Quarter of Peak	22	19,26	18	22	27	20	1	5
		1979-IV	.8	.8	1.3	.3	.2	.5	-5.9	41.4
	C-E	Peak	.9	.9	1.5	.9	.3	.6	-.0	83.6
		Quarter of Peak	22,25,26	26	18	22	27	20	1	5
		1979-IV	.9	.9	1.4	.6	.2	.5	-6.1	39.9

Table 4.3 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

DRI

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations					Percent Changes from Baseline					
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Average of Int. Rates	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e;\ k'_s = k_e$										
	Orig.	Peak	2.1	1.7	3.1	4.2	.2	1.0	-.0	166.1
		Quarter of Peak	27	28	28	21	14	10,11	1	26
		1979-IV	2.1	1.7	3.1	3.5	-.6	.6	-1.7	88.3
	C-E	Peak	1.9	1.8	3.4	.9	.1	1.2	-.0	157.0
		Quarter of Peak	28	28	28	18	14	28	1	26
		1979-IV	1.9	1.8	3.4	.4	-.1	1.2	-6.0	84.2
2. ITC: with personal tax offset $k'_e = 2k_e;\ k'_s = k_e$										
	Orig.	Peak	2.1	.6	1.6	2.7	-.0	.9	2.0	3.2
		Quarter of Peak	28	10,28	10	18.20	2	11	24,25	5
		1979-IV	2.1	.6	1.3	1.3	-1.2	.2	1.1	-45.3
	C-E	Peak	1.5	.7	1.8	-.1	-.0	.9	2.4	2.4
		Quarter of Peak	28	28	28	2	2	28	5	4
		1979-IV	1.5	.7	1.8	2.1	-.8	.9	-3.7	-37.8
3. 10-5-3										
	Orig.	Peak	3.1	1.2	2.3	1.3	.1	.7	-.0	119.4
		Quarter of Peak	28	28	28	25	16	13,26	1	26
		1979-IV	3.1	1.2	2.3	.9	-.3	.7	-3.9	64.1
	C-E	Peak	2.2	1.2	2.6	-.1	.1	1.1	-.0	218.9
		Quarter of Peak	28	27,28	28	2	16	28	1	26
		1979-IV	2.2	1.2	2.6	3.4	.1	1.1	-5.5	115.8

Table 4.3 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

DRI

(1) Simulations	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Average of Int. Rates	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
4. $\Delta k' = +16.264\%$										
	Orig.	Peak	4.6	2.8	5.2	9.9	.5	2.2	3.6	235.2
		Quarter of Peak	10	28	10	18,22	15	10	21,22	3
		1979-IV	3.4	2.8	5.0	7.3	-1.3	.5	-.1	115.8
	C-E	Peak	2.6	2.6	5.0	1.8	.2	1.8	-.0	243.4
		Quarter of Peak	28	28	28	18	14	28	1	3
		1979-IV	2.6	2.6	5.0	.9	-.3	1.8	-9.3	101.0
5. $\Delta u'_e = - 9.815\%$										
	Orig.	Peak	1.5	1.3	2.4	.8	.3	.7	.0	181.0
		Quarter of Peak	27	27	27	12	17	9,10	18	3
		1979-IV	1.5	1.3	2.4	-.4	.2	.5	-3.8	103.5
	C-E	Peak	1.2	1.3	2.4	-.2	.4	.8	-.0	190.7
		Quarter of Peak	27	27	28	2,3	27	27,28	1	4
		1979-IV	1.2	1.3	2.4	-1.0	.4	.8	-5.3	111.0
6. OTA Alternative										
	Orig.	Peak	1.6	.8	1.6	1.9	.1	.7	1.7	55.7
		Quarter of Peak	28	28	10,28	18	13	10,11	21	5
		1979-IV	1.6	.8	1.6	.9	-.6	.3	-.2	-2.0
	C-E	Peak	1.1	.9	1.9	-.1	.1	.7	-.0	70.6
		Quarter of Peak	28	27,28	28	2,15	14	27,28	1	5
		1979-IV	1.1	.9	1.9	-1.2	.3	.7	-3.4	8.8

Table 4.4 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations					Percent Changes from Baseline					
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$										
	Orig.	Peak	.1	.0		.0	.0	.0	-.0	50.2
		Quarter of Peak	8	7		19	20,28	9,10	1	26
		1979-IV	.1	-.0	-.0	-.0	.0	.0	-.1	27.0
	C-E	Peak	.1	.0		.1	-.0	.0	-.1	49.6
		Quarter of Peak	8	6,7		17,18,19	1	8,9,10	1	26
		1979-IV	.1	-.0	-.0	.0	-.0	.0	-.1	26.8
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$										
	Orig.	Peak	-.2	-.3		-.0	.0	-.0	4.0	-5.5
		Quarter of Peak	1	1		4	5	1	22	10
		1979-IV	-.7	-1.1	-2.0	-.3	-.3	-.2	3.7	-31.3
	C-E	Peak	-.2	-.3		.0	.0	-.0	3.9	-5.5
		Quarter of Peak	1	1		4	5	1	22	10
		1979-IV	-.7	-1.1	-2.0	-.3	-.3	-.2	3.7	-31.8
3. 10-5-3										
	Orig.	Peak	.3	.1		.0	.0	.1	.8	426.6
		Quarter of Peak	9	6		13	27	10	28	26
		1979-IV	.1	-.2	-.3	-.7	.0	-.0	.8	212.9
	C-E	Peak	.3	.1		.0	.0	.1	.6	423.5
		Quarter of Peak	9	6		13	27	10	28	26
		1979-IV	.1	-.2	-.3	-.7	.0	-.0	.6	211.4

Table 4.4 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	.3	.1		.1	.0	.1	.4	72.8
		Quarter of Peak	8	6		19,20	20,21	9	27	26
		1979-IV	.1	-.1	-.2	.1	-.0	-.0	.4	39.8
	C-E	Peak	.3	.1		.1	.0	.1	.3	70.6
		Quarter of Peak	8	6		19	20	9	28	26
		1979-IV	.1	-.1	-.2	.1	-.0	-.0	.3	38.7
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	.1	.2		.0	.0	.1	.7	110.5
		Quarter of Peak	28	28		1	28	28	6	26
		1979-IV	.1	.2	.5	-.3	.0	.1	-1.3	59.8
	C-E	Peak	.1	.2		-.0	.0	.1	.8	110.4
		Quarter of Peak	28	28		1	28	28	5	26
		1979-IV	.1	.2	.5	-.3	.0	.1	-1.3	60.0
6. OTA Alternative										
	Orig.	Peak	.1	.1		.0	.0	.0	.3	106.8
		Quarter of Peak	7,8	6		2,3	24,26	8,9,10	25	26
		1979-IV	.0	-.1	-.1	-.4	.0	-.0	.3	52.9
	C-E	Peak	.1	.1		.0	.0	.0	.2	105.5
		Quarter of Peak	9	6		2	23,28	10	25	26
		1979-IV	.0	-.1	-.1	-.4	.0	-.0	.2	52.3

Table 4.5 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

MPS (with Unborrowed Reserves at Baseline Values)

(1) Simulations	(2) Equations	(3) Variables	(4) GNP	(5) Per. Con. Exp.	(6) Exp. for Con. Dur.	(7) Corp. Bond Rate	(8) GNP Price Deflator	(9) Employment	(10) Unemployment Rate	(11) Federal Budget Deficit
			(1972 Dollars)			Percent Changes from Baseline				
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$										
	Orig.	Peak	4.5	3.2	6.2	16.5	5.8	3.3	-.1	152.2
		Quarter of Peak	20	20	21	27	28	21	1	26
		1979-IV	2.8	2.2	4.8	15.4	5.8	2.3	-19.5	116.3
	C-E	Peak	3.3	2.4	6.0	18.1	9.1	3.2	-.1	175.2
		Quarter of Peak	20	20	21	27	28	22	1	26
		1979-IV	1.5	1.2	4.5	17.0	9.1	2.3	-19.4	134.9
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$										
	Orig.	Peak	2.4	1.1	.7	-.1	.0	.6	7.7	60.3
		Quarter of Peak	24	26	28	1	1	25	6	4
		1979-IV	2.3	1.1	.7	-4.0	-5.5	.6	-4.9	-49.6
	C-E	Peak	1.4	.4	.8	-.1	.0	.8	10.4	78.2
		Quarter of Peak	28	28	28	1	1	28	13	7
		1979-IV	1.4	.4	.8	-5.5	-4.1	.8	-8.4	-71.9
3. 10-5-3										
	Orig.	Peak	3.7	2.9	7.0	17.9	8.6	3.3	-.1	161.7
		Quarter of Peak	21	22	26	27	28	25	1	26
		1979-IV	3.0	2.5	6.7	17.1	8.6	3.2	-27.9	97.7
	C-E	Peak	3.8	2.9	7.7	21.8	11.8	3.8	-.1	128.7
		Quarter of Peak	21	22	26	27	28	25	1	26
		1979-IV	2.6	2.1	7.3	20.7	11.8	3.5	-30.8	93.4

Table 4.5 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

MPS (with Unborrowed Reserves at Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	6.4	4.6	7.3	12.7	.8	3.8	119.5	868.5
		Quarter of Peak	16	16	16	21	20	16	28	26
		1979-IV	-12.8	4.6	-13.8	2.5	-2.7	-10.2	119.5	675.7
	C-E	Peak	4.3	3.3	7.8	22.2	10.5	4.0	-.1	284.8
		Quarter of Peak	20	19	21	27	28	21	1	26
		1979-IV	1.7	1.5	5.1	20.7	10.5	2.5	-19.9	202.8
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	2.2	1.7	4.1	11.7	5.6	2.1	-.1	167.6
		Quarter of Peak	18	18	21	27	28	20	1	26
		1979-IV	.9	.8	2.5	10.8	5.6	1.3	-10.5	109.3
	C-E	Peak	2.2	1.7	4.5	14.0	7.4	2.4	-.1	172.7
		Quarter of Peak	20	18,19	21	27	28	20	1	26
		1979-IV	.4	.4	2.4	13.0	7.4	1.3	-10.4	124.1
6. OTA Alternative										
	Orig.	Peak	2.3	1.7	3.9	10.5	4.5	2.0	-.1	68.0
		Quarter of Peak	20	19	21	27	28	20	1	5
		1979-IV	1.1	.9	2.6	9.7	4.5	1.3	-10.3	44.9
	C-E	Peak	2.0	1.5	4.1	12.2	6.3	2.1	-.1	70.7
		Quarter of Peak	20	19	21	27	28	21	1	5
		1979-IV	.4	.4	2.3	11.4	6.3	1.2	-9.7	62.1

Table 4.5-M1 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

MPS, with M-1 at Baseline Values

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e;\ k'_s = k_e$										
	Orig.	Peak	2.3	1.7	1.2	19.8	.6	1.4	1.3	555.2
		Quarter of Peak	18	19	17	27	25	19	28	26
		1979-IV	.6	1.1	-1.9	18.4	.6	.0	1.3	308.1
	C-E	Peak	1.0	.9	.7	18.9	2.0	1.0	10.4	652.4
		Quarter of Peak	17	17	17	27	26	18	28	26
		1979-IV	-1.3	-.3	-4.0	17.3	1.9	-.9	10.4	360.9
2. ITC: with personal tax offset $k'_e = 2k_e;\ k'_s = k_e$										
	Orig.	Peak	3.3	1.6	2.9	-.4	.0	1.5	4.4	28.2
		Quarter of Peak	21	21	28	1	1	23	3	3
		1979-IV	3.0	1.4	2.9	-7.0	-3.0	1.2	-10.8	-119.2
	C-E	Peak	1.6	.5	1.7	.9	.0	1.2	4.7	30.8
		Quarter of Peak	21	20	21	25	1	22	4	3
		1979-IV	.0	-.7	-.7	-.2	-.0	.3	-.7	-9.8
3. 10-5-3										
	Orig.	Peak	1.4	1.3	1.4	28.0	2.5	1.2	5.8	828.9
		Quarter of Peak	18	18,19	17	27	28	19	28	26
		1979-IV	-.9	.2	-3.7	26.8	3.5	-.4	5.8	461.6
	C-E	Peak	1.1	1.0	1.1	31.1	3.2	1,1	9.0	880.4
		Quarter of Peak	18	18	17	27	28	19	28	26
		1979-IV	-1.7	-.2	-4.3	29.7	3.2	-.7	9.0	501.6

Table 4.5-M1 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

MPS, with M-1 at Baseline Values

(1) Simulations	(2) Equations	(3) Variables	(4) GNP	(5) Per. Con. Exp.	(6) Exp. for Con. Dur.	(7) Corp. Bond Rate	(8) GNP Price Deflator	(9) Employment	(10) Unemployment Rate	(11) Federal Budget Deficit
			(1972 Dollars)			Percent Changes from Baseline				
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	4.4	4.0	2.9	12.7	.0	1.8	-.1	352.3
		Quarter of Peak	21	26	27	19	1	17	1	26
		1979-IV	3.0	3.8	2.8	-.2	-3.8	.4	-2.0	159.2
	C-E	Peak	1.6	1.4	1.3	23.0	2.1	1.3	14.0	831.6
		Quarter of Peak	14,16	16	14	24	25	17	28	26
		1979-IV	-1.4	-.2	-4.6	19.9	1.9	-1.3	14.0	446.1
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	.7	.6	.4	11.4	1.0	.6	3.2	411.5
		Quarter of Peak	15	17	5,6	27	27,28	16	28	26
		1979-IV	-.4	.2	-1.8	10.8	1.0	-.4	3.2	224.0
	C-E	Peak	.4	.4	.4	10.6	1.2	.5	6.2	441.6
		Quarter of Peak	13	12	5	24	25	16	28	26
		1979-IV	-.8	-.2	-2.5	9.6	1.1	-.6	6.2	237.1
6. OTA Alternative										
	Orig.	Peak	1.0	.8	.5	10.3	.6	.7	1.5	274.8
		Quarter of Peak	17	18	13	27	27	18	28	26
		1979-IV	-.0	.4	-1.2	9.6	.6	-.1	1.5	151.9
	C-E	Peak	.5	.4	.4	10.1	1.1	.5	5.9	328.9
		Quarter of Peak	16	17	13	24	26	17	28	26
		1979-IV	-.8	-.2	-2.3	8.9	1.1	-.5	5.9	178.8

Table 4.6 Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Wharton

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations			Percent Changes from Baseline							
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
1. ITC: no personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	2.4	1.8	2.1	-.0	-.0	Not Available	-.0	114.7
		Quarter of Peak	28	21	21	25	1		1	26
		1979-IV	2.4	1.8	1.8	-.1	-2.6		-7.6	75.3
	C-E	Peak	1.4	1.1	1.2	-.0	-.0		-.0	138.9
		Quarter of Peak	28	28	28	1	1		1	26
		1979-IV	1.4	1.1	1.2	-1.0	-1.7		-4.4	83.6
2. ITC: with personal tax offset $k'_e = 2k_e; k'_s = k_e$										
	Orig.	Peak	1.6	.8	.8	-.0	-.0		.7	47.0
		Quarter of Peak	21,22	21	21	1	1		3	3
		1979-IV	1.6	.6	.4	-1.2	-2.9		-5.0	-5.1
	C-E	Peak	.5	-.2	-.3	-.0	-.0		1.0	38.4
		Quarter of Peak	27	21	28	1	1		5	3
		1979-IV	.5	-.2	-.3	-2.1	-2.0		-1.3	8.5
3. 10-5-3										
	Orig.	Peak	2.4	2.5	2.8	1.2	-.0		-.0	277.8
		Quarter of Peak	28	28	28	27	1		1	26
		1979-IV	2.4	2.5	2.8	1.0	-.8		-9.4	175.4
	C-E	Peak	2.0	2.3	2.8	.3	-.0		-.0	307.7
		Quarter of Peak	28	28	28	27	1		1	26
		1979-IV	2.0	2.3	2.8	.3	-.6		-8.0	181.8

Table 4.6 (continued) Full Model Simulations, Percent Changes from Baseline at Peak and in Quarter 28 (1979-IV), Variables Other than Investment

Wharton

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Simulations						Percent Changes from Baseline				
	Equations	Variables	GNP	Per. Con. Exp.	Exp. for Con. Dur.	Corp. Bond Rate	GNP Price Deflator	Employment	Unemployment Rate	Federal Budget Deficit
			(1972 Dollars)							
4. $\Delta k'_e$ = +16.264%										
	Orig.	Peak	2.3	1.9	2.8	-.1	-.0	Not Available	-.2	296.2
		Quarter of Peak	28	17,18,19	12	1	1		1	3
		1979-IV	2.3	1.9	1.6	-1.0	-1.7		-6.1	134.4
	C-E	Peak	1.6	1.2	1.6	-.0	-.0		-.2	288.4
		Quarter of Peak	28	28	12	1	1		1	3
		1979-IV	1.6	1.2	1.3	2.3	-1.5		-4.3	136.8
5. $\Delta u'$ = - 9.815%										
	Orig.	Peak	.8	.7	1.1	-.0	-.0		-.0	230.7
		Quarter of Peak	28	19	18	1	1		1	3
		1979-IV	.8	.7	.9	-.9	-.6		-2.8	141.3
	C-E	Peak	.6	.6	.8	-.0	-.0		-.0	242.8
		Quarter of Peak	28	28	28	1	1		1	26
		1979-IV	.6	.6	.8	-1.2	-.4		-2.0	146.6
6. OTA Alternative										
	Orig.	Peak	1.0	1.0	1.1	.5	-.0		-.0	88.3
		Quarter of Peak	28	28	21	27	1		1	26
		1979-IV	1.0	1.0	1.0	.4	-.4		-3.6	54.8
	C-E	Peak	.8	.9	1.1	.1	-.0		-.0	99.6
		Quarter of Peak	28	28	28	23,25	1		1	26
		1979-IV	.8	.9	1.1	.0	-.3		-2.9	58.4

Table 5.1 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Corporate Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1. ITC	Orig.	8.3	-.5	-.6	7.2	3.5	6.8	-34.6	1.2	1.4	-.5
	C-E	9.9	1.1	-.0	10.9	4.0	13.7	-28.5	.9	1.0	-.6
2. ITC, with pers. tax offset	Orig.	7.9	.2	-.2	7.9	-1.7	-3.0	-5.6	.6	.7	-.1
	C-E	8.1	.3	.3	8.8	-1.5	1.4	-1.2	.1	-.0	-.1
3. 10-5-3	Orig.	8.5	2.1	-1.0	9.6	6.2	15.8	-34.4	1.4	1.7	-.8
	C-E	10.8	2.4	-.2	13.0	6.6	22.4	-28.4	1.1	1.0	-.8
4. $\Delta k'_e$=+16.264%	Orig.	15.0	-3.3	-.1	11.5	4.5	10.1	-40.9	1.5	1.7	-.6
	C-E	15.1	.3	-.2	15.2	4.9	14.9	-35.8	1.5	1.8	-.8
5. $\Delta u'$=-9.815%	Orig.	5.0	-.6	-.4	4.0	2.9	3.8	-31.4	1.0	1.3	-.4
	C-E	6.4	.8	.1	7.3	3.4	10.2	-26.2	.7	.8	-.5
6. OTA Alternative	Orig.	3.2	-.8	-.2	2.3	1.9	1.8	-15.4	.7	1.0	-.2
	C-E	4.2	.5	.2	4.9	2.3	6.3	-11.6	.6	.7	-.3

Table 5.2 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	(Utility) Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1.	Orig.	6.8	4.4	.6	11.7	3.7	23.5	-19.4	.1	.6	-.7
ITC	C-E	8.5	4.2	.5	13.3	3.9	25.5	-19.3	.1	.6	-.7
2.	Orig.	2.7	2.9	-.3	5.3	-2.1	-2.7	3.5	-.5	-2.0	.3
ITC,with pers. tax offset	C-E	3.9	2.7	-.2	6.3	-1.8	-1.2	3.5	-.5	-1.9	.3
3.	Orig.	7.0	6.4	1.0	14.4	5.4	33.8	-30.4	.1	.2	-1.1
10-5-3	C-E	10.3	6.4	.9	17.6	6.2	39.2	-30.3	.2	.2	-1.2
4.	Orig.	9.7	3.1	.6	13.4	4.0	24.9	-20.8	.1	.9	-.6
$\Delta k'_e$=+16.264%	C-E	10.7	3.1	.5	14.3	4.1	25.8	-21.0	.1	1.0	-.6
5.	Orig.	5.7	3.6	.4	9.7	3.3	19.4	-17.5	.0	1.0	-.6
$\Delta u'$=-9.815%	C-E	8.5	3.6	.3	12.5	3.9	23.4	-16.8	.1	1.0	-.6
6.	Orig.	2.9	2.3	.2	5.4	1.9	11.8	-6.5	.0	.3	-.4
OTA Alternative	C-E	3.9	2.2	.2	6.3	2.1	12.8	-6.3	.1	.4	-.4

Table 5.3 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

DRI

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Average of Interest Rates (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1. ITC	Orig.	17.4	3.1	-.3	20.2	4.5	39.4	-11.6	.3	-.0	-.1
	C-E	4.5	3.0	1.9	9.4	4.9	29.5	-11.0	.0	-.0	-.4
2. ITC, with pers. tax offset	Orig.	16.3	3.1	1.8	21.2	1.9	30.3	6.0	.1	-.0	.1
	C-E	3.5	3.3	3.9	10.7	2.6	21.2	4.9	-.2	-.0	-.2
3. 10-5-3	Orig.	22.7	9.9	.4	33.0	3.3	44.0	-8.4	.1	-.0	-.2
	C-E	5.6	7.9	4.8	18.3	3.8	31.1	-15.1	-.3	-.0	-.3
4. $\Delta k'_e = +16.264\%$	Orig.	37.1	1.5	-.5	38.1	7.3	69.1	-15.2	.7	-.0	-.0
	C-E	7.9	.3	3.2	11.4	7.3	41.4	-13.2	.1	-.0	-.5
5. $\Delta u' = -9.815\%$	Orig.	4.9	2.7	1.4	9.0	3.6	21.8	-13.6	-.0	.0	-.2
	C-E	1.9	1.7	1.6	4.9	3.4	17.7	-14.5	-.1	.0	-.3
6. OTA Alternative	Orig.	9.5	2.8	1.2	13.5	2.3	23.1	.3	9	-.0	-.0
	C-E	2.7	3.0	2.7	8.4	2.8	19.1	-1.1	-.1	-.0	-.2

Table 5.4 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

MICHIGAN

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Corporate Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1. ITC	Orig.	1.6	.1	.0	1.7	-.0	1.5	-4.0	-.0	.0	-.0
	C-E	1.8	.1	-.0	1.9	-.1	1.6	-4.0	.0	-.0	-.0
2. ITC, with pers. tax offset	Orig.	.7	-.4	-.7	-.4	-2.9	-9.6	4.7	-.0	-.5	.2
	C-E	.9	-.3	-.7	-.1	-3.0	-9.4	4.7	-.0	-.5	.2
3. 10-5-3	Orig.	2.9	.1	.4	3.4	-.4	1.2	-31.6	-.1	.0	.0
	C-E	3.2	.1	.4	3.7	-.4	1.6	-31.4	-.1	.0	.0
4. $\Delta k'_e$=+16.264%	Orig.	2.6	.1	-.1	2.6	-.3	1.6	-5.9	.0	-.0	.0
	C-E	2.9	.1	-.1	2.9	-.2	1.9	-5.7	.0	-.0	.0
5. $\Delta u'$=-9.815%	Orig.	-1.3	.1	.3	-.9	.8	1.4	-8.9	-.0	.0	-.1
	C-E	-1.5	.1	.3	-1.1	.8	1.3	-8.9	-.0	.0	-.0
6. OTA Alternative	Orig.	1.0	.1	.2	1.3	-.1	.5	-7.9	-.0	.0	.0
	C-E	1.1	.0	.2	1.3	-.1	.6	-7.8	-.0	.0	.0

Table 5.5 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

MPS (with Unborrowed Reserves at Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Corporate Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1. ITC	Orig.	11.6	4.7	1.0	17.3	7.1	40.8	-18.0	1.7	9.9	-1.1
	C-E	5.6	2.8	1.7	10.1	6.5	21.0	-20.9	1.8	15.6	-1.1
2. ITC, with pers. tax offset	Orig.	12.7	4.5	1.6	18.8	1.0	33.0	7.7	-.4	-9.4	-.3
	C-E	6.2	4.9	3.0	14.1	1.2	20.4	11.1	-.6	-6.9	-.5
3. 10-5-3	Orig.	7.8	6.4	2.7	16.9	9.9	43.2	-15.1	1.8	14.7	-1.6
	C-E	6.7	5.3	3.4	15.4	10.7	37.4	-14.5	2.2	20.1	-1.8
4. $\Delta k'_e$=+16.264%	Orig.	-123.7	-6.2	-6.5	-136.4	-20.2	-184.9	-104.7	.3	-4.7	6.9
	C-E	8.7	.1	1.9	10.6	7.5	23.8	-31.4	2.2	17.9	-1.1
5. $\Delta u'$=-9.815%	Orig.	2.8	2.3	.5	5.6	3.7	12.8	-16.9	1.2	9.6	-.6
	C-E	1.5	1.7	.5	3.6	3.5	6.0	-19.2	1.4	12.7	-.6
6. OTA Alternative	Orig.	4.1	2.1	.7	6.8	3.7	15.5	-7.0	1.0	7.7	-.6
	C-E	1.8	1.2	.7	3.7	3.7	6.3	-9.6	1.2	10.8	-.6

Table 5.5-M1 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

MPS (with M-1 at Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Corporate Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1.	Orig.	6.8	1.2	-7.7	.4	-2.8	9.2	-48.4	2.0	.9	.1
ITC	C-E	-2.6	-.2	-8.3	-11.0	-5.8	-19.3	-56.9	1.9	3.3	.6
2.	Orig.	14.2	5.7	4.2	24.0	4.2	43.0	18.7	-.7	-5.1	-.6
ITC,with pers. tax offset	C-E	3.3	3.7	1.5	8.5	-1.0	.5	1.5	-.0	-.1	-.0
3.	Orig.	-.8	.9	-9.6	-9.4	-5.4	-13.4	-72.6	2.9	4.2	.3
10-5-3	C-E	-4.9	.5	-10.3	-14.7	-6.4	-24.5	-79.1	3.2	5.5	.5
4.	Orig.	-6.6	2.9	-3.0	-6.7	4.1	42.5	-25.0	-.0	-6.4	-.1
$\Delta k'_e$=+16.264%	C-E	.1	-3.2	-10.0	-13.1	-6.7	-19.5	-70.4	2.1	3.2	.8
5.	Orig.	-.2	.2	-4.9	-4.9	-2.6	-5.4	-35.2	1.2	1.7	.2
$\Delta u'$=-9.815%	C-E	-2.7	.3	-5.5	-7.9	-3.6	-12.0	-37.4	1.0	1.9	.4
6.	Orig.	1.4	.3	-4.2	-2.5	-1.8	-.3	-23.9	1.0	1.0	.1
OTA Alternative	C-E	-2.3	-.2	-4.9	-7.3	-3.4	-11.8	-28.2	1.0	1.8	.3

Table 5.6 Full Model Simulations, Absolute Changes from Baseline, Quarter 28 (1979-IV), Investment and Other Variables

Wharton

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
		Investment				Other Variables					
Simulations	Equations	Equipment	Structures	Housing	Total Fixed	Expenditures for Consumer Durables	GNP	Net Fed. Budget Surplus (Billions of Cur.$)	Corporate Bond Rate (Percent)	GNP Price Deflator (1972=100)	Unemployment Rate (Percent)
		Billions of 1972 Dollars									
1. ITC	Orig.	8.0	4.0	-.1	11.9	2.6	33.8	-16.6	-.0	-4.4	-.4
	C-E	4.0	2.0	.5	6.4	1.8	20.3	-18.3	-.1	-2.9	-.3
2. ITC,with pers.tax offset	Orig.	7.2	3.6	-1.0	9.8	.5	22.7	1.1	-.1	-5.0	-.3
	C-E	3.1	1.5	-.8	3.9	-.4	7.1	-1.9	-.2	-3.4	-.1
3. 10-5-3	Orig.	7.6	3.0	.8	11.4	4.1	35.1	-38.7	.1	-.4	-.5
	C-E	4.3	1.5	1.6	7.5	4.1	28.9	-39.9	.0	-.1	-.5
4. $\Delta k'_e$=+16.264%	Orig.	18.7	-4.8	-.1	13.9	1.6	33.7	-29.6	-.1	-2.8	-.4
	C-E	13.5	-6.7	1.1	8.0	1.9	23.4	-30.0	-.2	-2.5	-.2
5. $\Delta u'$=-9.815%	Orig.	2.6	1.1	.5	4.2	1.3	12.1	-31.2	-.1	-1.0	-.2
	C-E	1.5	.6	.9	3.0	1.2	8.9	-32.2	-.1	-.7	-.1
6. OTA Alternative	Orig.	3.5	1.1	.4	5.0	1.5	14.9	-12.1	0	-.7	-.2
	C-E	2.1	.5	.9	3.5	1.6	11.8	-12.8	0	-.5	-.2

Table 6.1 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

BEA

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-6.7	-6.6	1.7	1.6	-1.6	-1.6	-10.1	-9.8	-8.4	-8.3	-2.0	1.0
Peak	-5.1	-6.3	5.0	3.0	-.4	-1.1	-9.2	-8.4	-4.4	-6.0	1.0	-1.3
Quarter of Peak	8	4	8	8	4	4	8	8	9	9	4	4
Low	-34.6	-28.5	-5.6	-3.0	-34.4	-28.4	-40.9	-35.8	-31.4	-26.2	-15.4	-11.6
Quarter of Low	28	28	17	17	28	28	28	28	28	28	28	28
9 (1975-I)	-8.8	-10.2	1.8	-.1	-4.3	-6.6	-10.1	-9.3	-4.4	-6.0	-2.6	-3.8
28 (1979-IV)	-34.6	-28.5	-5.6	-1.2	-34.4	-28.4	-40.9	-35.8	-31.4	-26.2	-15.4	-11.6

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[a] No personal tax offset.

[b] With personal tax offset.

Table 6.2 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

Chase

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-1.1	-1.1	6.8	6.8	-1.9	-1.8	-2.5	-2.5	-9.5	-9.3	-1.9	-1.8
Peak	-1.1	-1.1	6.8	6.8	-1.9	-1.8	-2.5	-2.5	-4.0	-3.5	-1.9	-1.8
Quarter of Peak	1	1	1	1	1,4	1	1	1	9	9	1	1
Low	-19.4	-19.3	-1.1	-.6	-30.4	-30.3	-20.8	-21.0	-17.5	-16.8	-6.5	-6.3
Quarter of Low	28	28	6,7	5-7	28	28	28	28	28	28	28	28
9 (1975-I)	-6.7	-6.5	4.3	3.7	-9.9	-9.5	-9.6	-9.7	-4.0	-3.5	-5.8	-5.5
28 (1979-IV)	-19.4	-19.3	3.5	3.5	-30.4	-30.3	-20.8	-21.0	-17.5	-16.8	-6.5	-6.3

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[a] No personal tax offset.

[b] With personal tax offset.

Table 6.3 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

DRI

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-7.3	-7.3	0.1	.1	-2.1	-2.1	-13.7	-13.6	-11.2	-11.2	-2.6	-2.6
Peak	-1.2	-4.5	6.0	4.9	-0.2	-1.4	-0.4	-8.7	-3.6	-5.8	0.3	-1.1
Quarter of Peak	8	8	28	28	8	4	9	9	9	9	28	28
Low	-12.7	-11.9	-0.2	-.1	-12.3	-17.7	-21.4	-17.3	-14.1	-14.6	-5.4	-6.6
Quarter of Low	25	25,27	5	4	21	21	19	19	24	25,27	19	18,19
9 (1975-I)	-4.5	-7.8	1.0	.6	-3.5	-5.8	-0.4	-8.7	-3.6	-5.8	0.0	-3.0
28 (1979-IV)	-11.6	-11.0	6.0	4.9	-8.4	-15.1	-15.2	-13.2	-13.6	-14.5	0.3	-1.1

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[a] No personal tax offset.

[b] With personal tax offset.

Table 6.4 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

Michigan

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-.1	-.0	4.9	4.9	-1.1	-1.2	-.0	.0	-.9	-.9	-1.4	-1.4
Peak	-.0	.1	5.5	5.5	-.5	-.6	.0	.0	.1	.1	-1.2	-1.3
Quarter of Peak	5	5	10	10	4	4	4	4	9	9	4	4
Low	-4.0	-4.0	3.7	3.8	-31.6	-31.4	-5.9	-5.7	-9.1	-9.1	-7.9	-7.8
Quarter of Low	28	28	9	9	28	28	28	28	27	27	24	24
9 (1975-I)	-.0	.0	3.7	3.8	-8.2	-8.2	-.2	-.1	.1	.1	-5.2	-5.2
28 (1979-IV)	-4.0	-4.0	4.6	4.7	-31.6	-31.4	-5.9	-5.7	-8.9	-8.9	-7.9	-7.8

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[a] No personal tax offset. Increase in investment tax credit applied only to equipment.

[b] With personal tax offset. Increase in investment tax credit applied only to equipment.

Table 6.5 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows
MPS (With Unborrowed Reserves at Baseline Values)

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-7.2	-7.2	-1.1	-1.2	-2.2	-2.2	-13.7	-13.7	-8.1	-8.1	-2.8	-2.8
Peak	2.1	-.6	8.3	11.1	-1.0	-.7	1.8	-2.6	-1.6	-1.3	2.7	2.6
Quarter of Peak	18	21	24	28	4	4	14	18	17	17	20	20
Low	-18.0	-20.9	-3.3	-6.1	-15.1	-14.5	-104.7	-31.4	-16.9	-19.2	-7.0	-9.6
Quarter of Low	20	28	6	11	28	28	28	28	28	28	28	28
9 (1975-I)	-7.1	-8.6	-2.6	-5.2	-6.6	-6.2	-3.2	-10.4	-2.2	-2.4	-3.1	-3.7
28 (1979-IV)	-18.0	-20.9	7.7	11.1	-15.1	-14.5	-104.7	-31.4	-16.9	-19.2	-7.0	-9.6

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[a] No personal tax offset.

[b] With personal tax offset.

Table 6.5-M1 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

MPS, With M-1 at Baseline Values

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-7.2	-7.2	-.9	-1.0	-2.2	-2.2	-13.7	-13.7	-8.1	-8.1	-2.8	-2.8
Peak	-6.9	-7.1	18.7	11.0	-1.6	-1.5	-12.7	-13.7	-6.2	-6.7	-2.2	-2.3
Quarter of Peak	4	2	28	21	4	4	12	1	9	9	4	4
Low	-48.4	-56.9	1.8	-1.9	-72.6	-79.1	-25.9	-70.4	-35.2	-37.4	-23.9	-28.2
Quarter of Low	28	28	2	2	28	28	27	28	28	28	28	28
9 (1975-I)	-11.8	-12.7	2.6	1.4	-10.3	-10.7	-13.8	-15.2	-6.2	-6.7	-6.4	-7.1
28 (1979-IV)	-48.4	-56.9	18.7	1.5	-72.6	-79.1	-25.0	-70.4	-35.2	-37.4	-23.9	-28.2

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[a] No personal tax offset.

[b] With personal tax offset.

Table 6.6 Full Model Simulations, Net Federal Budget Surplus, Differences from Baseline in Billions of Dollars, Quarters 1,9 and 28, and Peaks and Lows

Wharton

(1)	(2)		(3)		(4)		(5)		(6)		(7)	
Quarter	Simulations and Equations											
	1(ITC)[a]		2(ITC)[b]		3(10-5-3)		4($\Delta k_e'$)		5($\Delta u'$)		6(OTA)	
	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E	Orig.	C-E
1 (1973-I)	-4.9	-4.9	-.6	-.6	-2.2	-2.2	-14.2	-14.2	-11.6	-11.6	-3.3	-3.3
Peak	-4.0	-4.9	4.0	-.6	-2.0	-2.2	-11.8	-14.0	-11.5	-11.6	-2.6	-2.8
Quarter of Peak	7	1	25	1	4	2	7	7	9	1,3	4	4
Low	-16.6	-18.3	-2.4	-2.6	-38.7	-39.9	-31.2	-31.6	-31.2	-32.2	-12.1	-12.8
Quarter of Low	28	28	3	13	28	28	27	27	28	28	28	28
9 (1975-I)	-8.8	-9.7	-1.2	-2.2	-10.9	-11.5	-14.8	-16.0	-11.5	-12.0	-6.0	-6.4
28 (1979-IV)	-16.6	-18.3	1.1	-1.9	-38.7	-39.9	-29.6	-30.0	-31.2	-32.2	-12.1	-12.8

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[a] No personal tax offset.

[b] With personal tax offset.

Table 7 Full Model Simulations, Fixed Investment, Differences from Baseline in Billions of 1972 Dollars, Fourth Quarter of Each Year

(1) Simulation	(2) Equations	(3) Year	(4)	(5)	(6)	(7)	(8)	(9)	(11)
			Model						
			BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
1. ITC: No Personal Tax Offset	Orig.	1,1973-IV	3.8	1.5	3.5	.7	3.6	2.0	2.5
		2,1974-IV	8.1	4.1	12.9	1.1	7.8	5.3	6.6
		3,1975-IV	8.2	6.6	14.4	1.2	14.0	6.6	8.5
$k'_e = 2k_e$;		4,1976-IV	5.8	8.3	13.7	1.2	22.6	9.7	10.2
		5,1977-IV	4.5	10.2	14.7	1.5	26.6	11.1	11.4
$k'_s = k_e$		6,1978-IV	6.5	11.4	17.0	1.7	24.3	11.4	12.0
		7,1979-IV	7.2	11.7	20.2	1.7	17.3	11.9	11.7
	C-E	1,1973-IV	3.4	2.0	1.9	1.0	2.5	1.0	2.0
		2,1974-IV	5.8	4.9	5.9	1.3	4.6	2.7	4.2
		3,1975-IV	5.9	7.1	6.7	1.3	8.2	3.0	5.4
		4,1976-IV	4.4	9.3	5.8	1.2	14.2	4.5	6.6
		5,1977-IV	5.0	11.3	6.4	1.7	18.7	4.6	8.0
		6,1978-IV	8.7	12.8	7.8	1.9	16.8	5.3	8.9
		7,1979-IV	10.9	13.3	9.4	1.9	10.1	6.4	8.7
2. ITC: with	Orig.	1,1973-IV	3.1	.1	2.6	.2	1.1	.6	1.3
Personal		2,1974-IV	7.0	1.2	12.5	.2	3.4	3.9	4.7
Tax Offset		3,1975-IV	8.5	4.4	15.0	.1	7.9	5.0	6.8
$k'_e = 2k_e$;		4,1976-IV	6.9	5.3	14.5	-.2	14.7	8.7	8.3
$k'_s = k_e$		5,1977-IV	6.5	6.3	15.1	-.3	18.5	10.4	9.4
		6,1978-IV	7.8	5.5	17.4	-.4	20.6	10.2	10.2
		7,1979-IV	7.9	5.3	21.2	-.5	18.8	9.8	10.4
	C-E	1,1973-IV	.7	.4	1.0	.5	-.4	-.4	.3
		2,1974-IV	2.7	1.5	5.0	.4	-1.1	1.0	1.6
		3,1975-IV	4.9	3.9	6.8	.1	-.4	1.3	2.8
		4,1976-IV	4.5	5.7	6.8	-.2	2.4	3.6	3.8
		5,1977-IV	6.4	6.9	7.2	-.1	6.9	4.1	5.2
		6,1978-IV	7.7	6.3	8.6	-.1	11.7	4.2	6.4
		7,1979-IV	8.8	6.3	10.7	-.2	14.1	3.9	7.3
3. 10-5-3	Orig.	1,1973-IV	2.5	.6	1.6	2.1	2.4	.7	1.6
		2,1974-IV	6.1	2.5	7.9	2.8	4.8	2.2	4.4
		3,1975-IV	6.2	4.5	12.5	3.0	8.2	3.6	6.3
		4,1976-IV	4.2	7.0	15.1	3.0	14.4	5.5	8.2
		5,1977-IV	4.0	10.2	20.1	3.1	19.9	7.6	10.8
		6,1978-IV	7.8	13.2	27.8	3.1	20.5	9.4	13.6
		7,1979-IV	9.6	14.4	33.0	3.5	16.9	11.4	14.8
	C-E	1,1973-IV	1.2	.8	1.0	1.9	2.9	.2	1.3
		2,1974-IV	3.0	3.2	4.6	2.9	4.8	.7	3.2
		3,1975-IV	3.3	5.2	7.4	3.0	7.7	1.5	4.7
		4,1976-IV	2.4	8.5	8.3	2.8	14.0	2.5	6.4
		5,1977-IV	4.4	12.5	10.5	3.1	20.6	3.9	9.2
		6,1978-IV	9.8	16.5	14.8	3.3	20.8	5.5	11.8
		7,1979-IV	13.0	17.6	18.3	3.7	15.4	7.5	12.6

Table 7 (continued) Full Model Simulations, Fixed Investment, Differences from Baseline in Billions of 1972 Dollars, Fourth Quarter of Each Year

(1) Simulation	(2) Equations	(3) Year	(4)	(5)	(6)	(7)	(8)	(9)	(11)
					Model				
			BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
4. Δk'= +16.264%	Orig.	1,1973-IV	6.0	3.3	7.2	2.0	8.6	2.7	5.0
		2,1974-IV	12.7	7.7	29.5	2.8	19.7	8.6	13.5
		3,1975-IV	10.4	10.2	32.5	2.8	27.1	9.7	15.4
		4,1976-IV	6.4	11.1	24.6	2.6	32.1	9.0	14.3
		5,1977-IV	6.1	12.1	24.9	2.6	19.9	9.4	12.5
		6,1978-IV	9.2	13.2	31.2	2.6	-17.8[a]	11.4	8.3[a]
		7,1979-IV	11.5	13.4	38.1	2.6	-136.4[a]	13.9	-9.5[a]
	C-E	1,1973-IV	8.1	4.1	3.4	2.1	1.9	1.1	3.4
		2,1974-IV	13.8	8.4	10.5	3.0	6.1	4.0	7.6
		3,1975-IV	10.7	10.1	9.8	2.8	11.6	3.8	8.1
		4,1976-IV	5.5	11.3	6.2	2.5	19.0	3.0	7.9
		5,1977-IV	5.9	12.4	6.9	2.7	23.8	3.2	9.2
		6,1978-IV	11.7	13.9	9.7	2.9	20.2	5.3	10.6
		7,1979-IV	15.2	14.3	11.4	2.9	10.6	8.0	10.4
5. Δu'= -9.815%	Orig.	1,1973-IV	3.5	3.5	3.4	-.9	2.6	.7	2.1
		2,1974-IV	7.8	6.7	8.5	-1.1	5.3	2.0	4.9
		3,1975-IV	7.0	7.2	6.9	-1.3	7.7	2.7	5.0
		4,1976-IV	3.5	7.6	3.7	-1.8	10.9	2.9	4.5
		5,1977-IV	1.0	8.5	5.4	-1.8	12.1	3.0	4.7
		6,1978-IV	2.8	9.3	7.5	-1.3	9.7	3.3	5.2
		7,1979-IV	4.0	9.7	9.0	-.9	5.6	4.2	5.3
	C-E	1,1973-IV	2.9	4.3	4.0	-1.0	2.6	.3	2.2
		2,1974-IV	5.3	8.3	4.2	-1.2	4.6	1.0	3.7
		3,1975-IV	4.5	8.6	3.2	-1.5	6.5	1.4	3.8
		4,1976-IV	2.6	9.4	2.0	-1.9	10.1	1.4	3.9
		5,1977-IV	2.4	10.6	3.2	-1.8	12.5	1.5	4.7
		6,1978-IV	5.3	12.0	4.5	-1.3	9.5	1.9	5.3
		7,1979-IV	7.3	12.5	5.2	-1.1	3.6	3.0	5.1
6. OTA Alternative	Orig.	1,1973-IV	2.6	1.0	1.9	.7	2.4	.8	1.6
		2,1974-IV	5.6	2.8	8.8	1.0	4.9	2.4	4.2
		3,1975-IV	4.7	4.0	10.8	1.0	7.6	3.0	5.2
		4,1976-IV	1.8	4.8	8.6	1.0	11.3	3.2	5.1
		5,1977-IV	.0	5.2	8.6	1.1	13.0	3.6	5.3
		6,1978-IV	1.6	5.6	11.2	1.1	11.0	4.1	5.8
		7,1979-IV	2.3	5.4	13.5	1.3	6.8	5.0	5.7
	C-E	1,1973-IV	2.2	1.2	1.1	.5	2.1	.4	1.2
		2,1974-IV	4.1	3.4	4.4	.9	3.5	1.3	2.9
		3,1975-IV	3.3	4.3	5.7	1.0	5.4	1.6	3.6
		4,1976-IV	1.4	5.4	4.3	1.0	8.9	1.7	3.8
		5,1977-IV	1.2	5.9	4.2	1.1	11.4	1.9	4.3
		6,1978-IV	3.6	6.4	6.4	1.2	9.1	2.4	4.8
		7,1979-IV	4.9	6.3	8.4	1.4	3.7	3.5	4.7

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[a] Using MPS simulations with M1 at baseline values the MPS differences were 16.0 and -6.7, respectively, in 1978 and 1979 and the means were 13.9 and 12.1.

Table 8.1 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 1: ITC: No Personal Tax Offset
$k'_e = 2k_e$; $k'_s = k_e$

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Model						
Variable	BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
			Original Equations				
Equipment	8.3	6.8	17.4	1.6	11.6	8.0	9.0
Structures	-.5	4.4	3.1	.1	4.7	4.0	2.6
Housing	-.6	.6	-.3	.0	1.0	-.1	.1
Total Fixed Invest.	7.2	11.7	20.2	1.7	17.3	11.9	11.7
GNP	6.8	23.5	39.4	1.5	40.8	33.8	24.3
Net Federal Budget Surplus	-20.3	-11.4	-6.8	-2.3[a]	-10.6	-9.7	-10.2
			C-E Equations				
Equipment	9.9	8.5	4.5	1.8	5.6	4.0	5.7
Structures	1.1	4.2	8.0	.1	2.8	2.0	2.2
Housing	-.0	.5	1.9	-.0	1.7	.5	.8
Total Fixed Invest.	10.9	13.3	9.4	1.9	10.1	6.4	8.7
GNP	13.7	25.5	29.5	1.6	21.0	20.3	18.6
Net Federal Budget Surplus	-16.7	-11.3	-6.4	-2.3[a]	-12.3	-10.7	-10.0

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[a] Increase in investment tax credit applied only to equipment.

Table 8.2 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 2: ITC: With Personal Tax Offset

$$k_e' = 2k_e; \; k_s' = k_e$$

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Model						
Variable	BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
			Original Equations				
Equipment	7.9	2.7	16.3	.7	12.7	7.2	7.9
Structures	.2	2.9	3.1	-.4	4.5	3.6	2.3
Housing	-.2	-.3	1.8	-.7	1.6	-1.0	.2
Total Fixed Invest.	7.9	5.3	21.2	-.4	18.8	9.8	10.4
GNP	-3.0	-2.7	30.3	-9.6	33.0	22.7	11.8
Net Federal Budget Surplus	-3.3	2.1	3.5	2.8	4.5	.6	1.7
			C-E Equations				
Equipment	8.1	3.9	3.5	.9	6.2	3.1	4.3
Structures	.3	2.7	3.3	-.3	4.9	1.5	2.1
Housing	.3	-.2	3.9	-.7	3.0	-.8	.9
Total Fixed Invest.	8.8	6.3	10.7	-.1	14.1	3.9	7.3
GNP	1.4	-1.2	21.2	-9.4	20.4	7.1	6.6
Net Federal Budget Surplus	-.7	2.1	2.9	2.8	6.5	-1.1	2.1

Table 8.3 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 3: 10-5-3

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Model						
Variable	BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
Original Equations							
Equipment	8.5	7.0	22.7	2.9	7.8	7.6	9.4
Structures	2.1	6.4	9.9	.1	6.4	3.0	4.6
Housing	-1.0	1.0	.4	.4	2.7	.8	.7
Total Fixed Invest.	9.6	14.4	33.0	3.4	16.9	11.4	14.8
GNP	15.8	33.8	44.0	1.2	43.2	35.1	28.8
Net Federal Budget Surplus	-20.2	-17.8	-4.9	-18.5	-8.9	-22.7	-15.5
C-E Equations							
Equipment	10.8	10.3	5.6	3.2	6.7	4.3	6.8
Structures	2.4	6.4	7.9	.1	5.3	1.5	3.9
Housing	-.2	.9	4.8	.4	3.4	1.6	1.8
Total Fixed Invest.	13.0	17.6	18.3	3.7	15.4	7.5	12.6
GNP	22.4	39.2	31.1	1.6	37.4	28.9	26.8
Net Federal Budget Surplus	-16.6	-17.8	-8.9	-18.4	-8.5	-23.4	-15.6

Table 8.4 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 4: $\Delta k'_e = +16.264\%$

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Model						
Variable	BEA	Chase	DRI	Michigan	MPS[1]	Wharton	Mean[1]
				Original Equations[1]			
Equipment	15.0	9.7	37.1	2.6	-123.7	18.7	-6.8
Structures	-3.3	3.1	1.5	.1	-6.2	-4.8	-1.6
Housing	-.1	.6	-.5	-.1	-6.5	-0.1	-1.1
Total Fixed Invest.	11.5	13.4	38.1	2.6	-136.4	13.9	-9.5
GNP	10.1	24.9	69.1	1.6	-184.9	33.7	-7.6
Net Federal Budget Surplus	-24.0	-12.2	-8.9	-3.5	-61.4	-29.6	-23.3
				C-E Equations			
Equipment	15.1	10.7	7.9	2.9	8.7	13.5	9.8
Structures	.3	3.1	.3	.1	.1	-6.7	-.5
Housing	-.2	.5	3.2	-.1	1.9	1.1	1.1
Total Fixed Invest.	15.2	14.3	11.4	2.9	10.6	8.0	10.4
GNP	14.9	25.8	41.4	1.9	23.8	23.4	21.9
Net Federal Budget Surplus	-21.0	-12.3	-7.7	-3.3	-18.4	-30.0	-15.4

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[1] Figures for equations using M1 at baseline values were

	Original Equations		C-E Equations	
	MPS	Mean	MPS	Mean
Equipment	-6.6	12.8	.1	8.4
Structures	2.9	-.1	-3.2	-1.0
Housing	-3.0	-.5	-10.0	-.9
Total Fixed Investment	-6.7	12.1	-13.1	6.5
GNP	42.5	30.3	-19.5	14.6
Net Fed. Budget Surplus	-25.0	-17.2	-70.4	-24.1

Table 8.5 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 5: $\Delta u' = -9.815\%$

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Model				
Variable	BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
			Original Equations				
Equipment	5.0	5.7	4.9	-1.3	2.8	2.6	3.3
Structures	-.5	3.6	2.7	.1	2.3	1.1	1.6
Housing	-.4	.4	1.4	.3	.5	.5	.5
Total Fixed Invest.	4.0	9.7	9.0	-.9	5.6	4.2	5.3
GNP	3.8	19.4	21.8	1.4	12.8	12.1	11.9
Net Federal Budget Surplus	-18.4	-10.3	-13.6	-5.2	-9.9	-18.3	-12.6
			C-E Equations				
Equipment	6.4	8.5	1.9	-1.5	1.5	1.5	3.1
Structures	.8	3.6	1.7	.1	1.7	.6	1.4
Housing	.1	.3	1.6	.3	.5	.9	.6
Total Fixed Invest.	7.3	12.5	5.2	-1.1	3.6	3.0	5.7
GNP	10.2	23.4	17.7	1.3	6.0	8.9	11.3
Net Federal Budget Surplus	-15.4	-9.8	-14.5	-5.2	-11.3	-18.9	12.5

Table 8,6 Full Model Simulations, Changes from Baseline, Quarter 28 (1979-IV), Billions of 1972 Dollars, Investment in Equipment, Structures and Housing, Total Fixed Investment, GNP, and Net Federal Budget Surplus

Simulation 6: OTA Alternative

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Model						
Variable	BEA	Chase	DRI	Michigan	MPS	Wharton	Mean
			Original Equations				
Equipment	3.2	2.9	9.5	1.0	4.1	3.5	4.0
Structures	-.8	2.3	2.8	.1	2.1	1.1	1.3
Housing	-.2	.2	1.2	.2	.7	.4	.4
Total Fixed Invest.	2.3	5.4	13.5	1.3	6.8	5.0	5.7
GNP	1.8	11.8	23.1	.5	15.5	14,9	11.3
Net Federal Budget Surplus	-9.0	-3.8	.2	-4.6	-4.1	-12.1	-5.6
			C-E Equations				
Equipment	4.2	3.9	2.7	1.1	1.8	2.1	2.6
Structures	.5	2.2	3.0	.0	1.2	.5	1.2
Housing	.2	.2	2.7	.2	.7	.9	.8
Total Fixed Invest.	4.9	6.3	8.4	1.3	3.7	3.5	4.7
GNP	6.3	12.8	19.1	.6	6.3	11.8	9.5
Net Federal Budget Surplus	-6.8	-3.7	-.6	-4.6	-5.6	-12.8	-5,7

Table 9.1 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 1. ITC: No Personal Tax Offset
$k'_e = 2k_e; \; k'_s = k_e$

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	2.8	3.0	-.0	2.0	3.5	.8	.0	1.8	4.8
	1974	6.7	6.7	-.6	5.0	6.1	2.1	-.4	3.5	5.4
	1975	10.8	10.0	-8.3	5.0	9.1	2.5	-4.3	3.8	7.6
	1976	9.6	8.0	-10.4	3.3	8.0	1.9	-6.0	2.5	7.2
	1977	7.9	2.6	-6.2	2.3	7.8	1.4	-4.4	2.6	7.2
	1978	7.2	.3	-1.2	3.2	8.3	1.4	-.3	4.2	7.3
	1979	8.3	-1.0	-1.1	3.5	9.9	2.1	-.1	5.3	7.5
Chase	1973	1.5	.5	-.0	.8	2.3	.1	-.1	1.1	4.8
	1974	3.2	3.1	.5	2.5	4.4	2.7	.3	3.0	5.4
	1975	5.3	6.1	.9	4.3	6.5	5.6	.4	4.6	7.6
	1976	5.5	7.8	1.3	4.8	6.7	7.5	1.6	5.3	7.2
	1977	6.2	8.9	1.7	5.3	7.6	8.7	1.4	5.9	7.2
	1978	6.6	8.5	1.6	5.6	8.2	8.2	1.5	6.2	7.3
	1979	6.8	8.8	1.0	5.7	8.5	8.5	.9	6.4	7.5
DRI	1973	2.5	2.3	.5	1.9	1.0	1.8	.6	1.0	4.8
	1974	11.0	8.9	.2	7.9	3.5	6.3	1.4	3.6	5.4
	1975	16.0	10.9	-3.8	9.3	5.1	8.0	-.1	4.3	7.6
	1976	16.0	9.4	-6.6	7.8	4.5	7.0	-1.1	3.3	7.2
	1977	15.7	7.7	-4.8	7.7	3.9	6.5	.3	3.3	7.2
	1978	15.6	6.3	-2.2	8.3	4.0	5.6	2.2	3.8	7.3
	1979	17.7	6.3	-.5	9.8	4.6	6.0	3.6	4.6	7.5
Michigan	1973	.8	.1	.0	.4	1.1	.1	.0	.5	4.8
	1974	1.3	.2	-.0	.7	1.5	.2	-.0	.8	5.4
	1975	1.5	.2	-.0	.8	1.7	.2	-.1	.8	7.6
	1976	1.4	.1	-.0	.7	1.5	.1	-.1	.7	7.2
	1977	1.6	.2	-.0	.8	1.8	.1	-.0	.9	7.2
	1978	1.6	.1	-.0	.8	1.8	.1	-.0	.9	7.3
	1979	1.6	.1	.0	.8	1.8	.1	-.0	.9	7.5
MPS	1973	2.5	2.6	.5	1.9	.9	3.4	.5	1.3	4.8
	1974	5.8	4.9	2.5	4.8	2.5	4.1	2.2	2.8	5.4
	1975	13.5	8.7	1.7	9.1	6.3	7.1	2.0	5.3	7.6
	1976	19.4	13.0	2.4	12.9	10.0	10.2	3.5	8.1	7.2
	1977	19.7	15.0	4.2	13.8	11.8	11.3	5.6	9.8	7.2
	1978	16.6	12.4	3.5	11.8	10.0	8.4	4.9	8.2	7.3
	1979	11.6	9.4	1.8	8.4	5.5	5.6	3.1	4.9	7.5
Wharton	1973	1.4	1.4	.1	1.1	.7	.7	.0	.5	4.8
	1974	3.9	3.9	1.4	3.2	1.9	1.9	1.0	1.6	5.4
	1975	5.3	5.3	1.5	4.3	2.4	2.4	.7	1.9	7.6
	1976	7.3	7.3	1.4	5.5	3.4	3.4	.6	2.6	7.2
	1977	8.0	8.0	1.0	5.8	3.3	3.3	.4	2.4	7.2
	1978	7.7	7.7	.3	5.5	3.5	3.5	.4	2.6	7.3
	1979	8.0	8.0	-.2	5.9	4.0	4.0	.8	3.2	7.5

Table 9.2 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 2. ITC: With Personal Tax Offset; $k'_e = 2k_e$; $k'_s = k_e$

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	1.8	3.2	.1	1.7	1.1	-.8	.1	.4	.0
	1974	5.0	7.1	-.0	4.3	3.0	-.4	.7	1.7	.0
	1975	9.4	10.4	-5.7	5.5	6.8	.6	-1.0	3.2	.0
	1976	9.3	8.1	-7.8	4.0	7.0	.1	-2.8	2.6	.0
	1977	7.8	3.6	-3.5	3.4	7.4	-.0	-.6	3.3	.0
	1978	7.2	1.8	-.3	3.8	7.6	.5	.0	3.7	.0
	1979	7.9	.3	-.3	3.8	8.1	.7	.6	4.3	.0
Chase	1973	.6	-.1	-.7	.1	1.1	-.3	-.7	.2	.0
	1974	.4	.9	1.1	.7	1.3	.8	.4	.9	.0
	1975	3.3	3.1	1.8	2.9	3.8	2.7	.4	2.5	.0
	1976	3.5	4.8	1.1	3.0	4.1	4.5	1.2	3.3	.0
	1977	3.7	5.8	1.0	3.3	4.5	5.7	1.0	3.6	.0
	1978	3.2	5.7	-.5	2.7	4.0	5.6	-.4	3.1	.0
	1979	2.7	5.7	-.5	2.6	3.8	5.3	-.4	3.1	.0
DRI	1973	1.6	1.8	.8	1.4	-.0	1.3	.8	.5	.0
	1974	10.0	8.1	2.0	7.6	1.9	5.2	3.2	3.1	.0
	1975	15.4	11.1	-1.5	9.7	3.8	7.6	2.9	4.4	.0
	1976	15.6	9.8	-4.7	8.3	3.6	7.3	2.0	3.9	.0
	1977	14.9	7.9	-2.9	7.9	3.0	7.0	2.9	3.8	.0
	1978	14.5	6.2	.4	8.5	2.9	6.2	4.8	4.2	.0
	1979	16.5	6.4	3.4	10.3	3.5	6.6	7.2	5.2	.0
Michigan	1973	.7	-.4	-.3	.1	.9	-.4	-.3	.3	.0
	1974	.8	-.6	-.7	.1	1.0	-.5	-.7	.2	.0
	1975	.9	-.8	-.8	.1	1.0	-.7	-.9	.1	.0
	1976	.8	-.9	-.9	-.1	.8	-.8	-1.0	-.1	.0
	1977	.8	-1.0	-1.0	-.2	1.0	-.9	-1.0	-.1	.0
	1978	.8	-.9	-1.2	-.2	1.0	-.8	-1.2	-.0	.0
	1979	.7	-.8	-1.3	-.2	.9	-.7	-1.3	-.1	.0
MPS	1973	1.0	1.1	-.6	.6	-1.1	2.0	-.6	-.2	.0
	1974	3.9	1.7	-1.3	2.1	-1.3	1.8	-1.8	-.7	.0
	1975	9.9	4.4	-2.6	5.1	-1.0	3.9	-2.7	-.3	.0
	1976	16.2	7.7	-3.6	10.6	1.9	6.7	-3.4	1.4	.0
	1977	17.2	9.7	-1.8	10.7	4.7	8.9	-1.6	3.6	.0
	1978	15.6	9.4	1.3	10.0	6.1	9.3	2.2	5.7	.0
	1979	12.7	9.0	2.8	9.1	6.2	9.8	5.3	6.8	.0
Wharton	1973	1.0	1.0	-1.2	.3	.2	.2	-1.2	-.2	.0
	1974	3.0	3.0	.3	2.4	.9	.9	-.4	.6	.0
	1975	4.2	4.2	.7	3.2	1.3	1.3	-.3	.8	.0
	1976	6.4	6.4	1.5	5.0	2.6	2.6	.7	2.1	.0
	1977	7.3	7.3	1.2	5.4	2.8	2.8	.7	2.1	.0
	1978	7.0	7.0	.0	5.0	2.9	3.0	-.1	2.0	.0
	1979	7.1	7.2	-1.8	4.8	3.0	3.1	-1.4	1.9	.0

Table 9.3 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 3. 10-5-3

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	.8	3.9	-.0	1.3	1.0	.8	.0	.6	1.1
	1974	2.9	9.7	-.6	3.7	2.7	2.1	-.4	1.8	3.0
	1975	6.0	14.4	-8.5	4.0	5.1	2.9	-3.8	2.1	6.0
	1976	6.2	12.8	-11.4	2.4	5.4	2.8	-6.1	1.4	7.9
	1977	5.7	7.7	-7.3	2.1	6.7	3.1	-5.0	2.3	9.5
	1978	6.5	5.6	-2.1	3.8	8.5	3.8	-.6	4.8	10.2
	1979	8.5	4.3	-1.8	4.7	10.8	4.8	-.3	6.3	10.2
Chase	1973	.4	.3	.3	.3	.6	.2	.2	.4	1.1
	1974	1.4	2.6	.7	1.5	2.4	2.4	.5	2.0	3.0
	1975	2.5	6.3	.9	2.9	3.9	5.8	.3	3.4	6.0
	1976	3.2	8.8	2.0	4.0	5.2	8.3	1.9	4.9	7.9
	1977	4.6	11.1	2.6	5.3	7.6	10.6	2.2	6.5	9.5
	1978	6.2	11.8	2.6	6.4	9.7	11.4	2.7	8.0	10.2
	1979	7.0	12.8	1.7	7.0	10.2	12.8	1.6	8.5	10.2
DRI	1973	.9	1.4	.3	.9	.3	1.2	.4	.5	1.1
	1974	5.1	7.8	1.2	4.8	1.8	6.1	1.7	2.8	3.0
	1975	10.4	12.7	.1	8.1	3.7	10.3	2.0	4.8	6.0
	1976	12.6	14.5	-2.1	8.6	3.7	11.4	1.6	4.8	7.9
	1977	15.4	17.0	-1.4	10.5	3.7	13.1	3.2	5.5	9.5
	1978	19.0	18.3	.8	13.5	4.5	14.0	6.6	7.2	10.2
	1979	23.0	20.0	.8	16.0	5.7	16.1	8.9	8.9	10.2
Michigan	1973	2.3	.2	.0	1.1	2.1	.2	.0	1.0	1.1
	1974	3.2	.4	.0	1.7	3.2	.4	.0	1.8	3.0
	1975	3.8	.4	-.0	1.9	3.8	.4	-.0	1.9	6.0
	1976	3.4	.4	.0	1.7	3.2	.3	.0	1.6	7.9
	1977	3.2	.3	.1	1.6	3.2	.3	.1	1.6	9.5
	1978	2.9	.2	.3	1.5	3.1	.2	.3	1.6	10.2
	1979	2.9	.2	.8	1.7	3.2	.2	.8	1.8	10.2
MPS	1973	.8	3.5	.2	.4	.6	4.9	.3	.1	1.1
	1974	2.2	5.9	1.4	1.3	1.8	6.7	1.6	.4	3.0
	1975	5.8	8.7	1.6	2.3	4.9	8.7	1.9	1.0	6.0
	1976	9.1	13.5	2.9	3.2	8.0	14.0	3.7	1.4	7.9
	1977	10.9	16.8	5.4	4.0	10.7	17.4	6.4	2.0	9.5
	1978	10.2	15.0	5.7	4.6	6.8	14.1	6.8	2.7	10.2
	1979	7.8	12.7	4.9	5.5	6.0	10.7	6.0	3.6	10.2
Wharton	1973	.8	-.0	.1	.4	.4	-.4	.1	.1	1.1
	1974	1.9	1.1	.5	1.3	.7	-.2	.4	.4	3.0
	1975	3.1	2.0	1.3	2.3	1.3	.3	1.0	1.0	6.0
	1976	4.1	3.0	1.8	3.1	1.8	.9	1.2	1.4	7.9
	1977	5.2	4.3	1.8	4.0	2.6	1.8	1.4	2.0	9.5
	1978	6.2	4.9	1.6	4.6	3.3	2.3	1.9	2.7	10.2
	1979	7.5	5.0	1.5	5.6	4.3	3.0	3.0	3.7	10.2

Table 9.4 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 4. Δk' = +16.264%

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	7.1	-.3	.0	3.2	8.8	1.0	-.0	4.3	7.1
	1974	15.7	-.7	-.4	7.8	15.3	3.1	-.6	8.4	8.0
	1975	21.3	-1.9	-11.4	6.7	18.8	3.6	-11.1	6.9	7.8
	1976	16.6	-4.0	-11.6	3.7	13.1	1.0	-11.3	3.2	7.8
	1977	15.3	-6.5	-6.6	3.2	11.4	-.4	-7.3	3.1	7.8
	1978	13.2	-7.2	-.8	4.5	12.6	-.2	-1.2	5.7	7.7
	1979	14.9	-6.6	-.2	5.6	15.1	.6	-.4	7.4	7.6
Chase	1973	3.6	.9	-.5	1.8	5.0	.2	-.7	2.2	7.1
	1974	7.3	3.6	.2	4.7	8.7	2.9	-.2	5.1	8.0
	1975	10.4	5.6	.8	6.6	10.6	5.2	.5	6.6	7.8
	1976	9.7	5.9	1.4	6.4	9.9	5.7	1.6	6.5	7.8
	1977	9.5	6.1	1.5	6.3	10.2	5.9	1.2	6.5	7.8
	1978	9.6	5.9	1.7	6.4	10.5	5.7	1.5	6.8	7.7
	1979	9.7	6.1	1.0	6.5	10.7	6.1	.8	6.9	7.6
DRI	1973	6.1	3.1	1.0	3.9	2.3	2.0	1.0	1.8	7.1
	1974	29.4	12.2	-.4	18.0	8.7	5.7	2.4	6.4	8.0
	1975	41.5	15.2	-10.1	21.1	11.2	5.5	-1.1	6.4	7.8
	1976	35.5	8.6	-16.9	14.1	8.3	1.7	-3.0	3.6	7.8
	1977	32.9	4.1	-11.5	13.0	7.0	.0	.9	3.6	7.8
	1978	32.7	2.5	-3.9	15.2	7.1	-.1	4.5	4.7	7.7
	1979	37.6	3.0	-1.0	18.5	8.0	.6	5.9	5.5	7.6
Michigan	1973	2.3	.2	.0	1.1	2.4	.2	.0	1.1	7.1
	1974	3.2	.4	-.0	1.7	3.4	.4	-.0	1.8	8.0
	1975	3.6	.4	-.1	1.8	3.7	.4	-.1	1.8	7.8
	1976	3.0	.3	-.1	1.5	2.9	.2	-.1	1.4	7.8
	1977	2.8	.2	-.1	1.4	3.0	.2	-.1	1.4	7.8
	1978	2.6	.1	-.1	1.2	2.9	.1	-.1	1.4	7.7
	1979	2.6	.1	-.1	1.3	2.9	.1	-.1	1.4	7.6
MPS	1973	8.9	.8	.9	4.6	1.5	.3	.7	1.0	7.1
	1974	17.9	6.0	5.7	12.0	4.9	1.6	3.5	3.7	8.0
	1975	29.2	10.4	3.2	17.6	12.2	3.5	2.8	7.5	7.8
	1976	30.2	13.2	3.2	18.4	17.2	5.2	4.9	10.9	7.8
	1977	14.7	12.3	2.4	10.4	18.4	5.9	7.6	12.4	7.8
	1978	-18.1*	4.3*	-3.2*	-8.7*	15.1	3.2	6.2	9.8	7.7
	1979	-123.2*	-12.4*	-11.6*	-66.1*	8.6	.2	3.3	5.1	7.6
Wharton	1973	9.4	-12.0	.1	1.4	8.1	-13.0	.1	.6	7.1
	1974	14.7	-11.9	2.4	5.2	11.0	-14.8	1.9	2.5	8.0
	1975	16.6	-10.9	3.1	6.3	11.3	-14.6	2.0	2.5	7.8
	1976	15.7	-12.5	1.3	5.2	10.7	-16.0	.3	1.7	7.8
	1977	15.7	-12.9	.3	4.9	10.7	-16.5	.0	1.7	7.8
	1978	16.7	-11.6	.6	5.6	11.8	-15.1	1.1	2.6	7.7
	1979	18.7	-9.5	-.2	6.8	13.4	-13.3	2.1	3.9	7.6

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*Results based on M1 values were 17.2, 3.0, -4.2, and 7.8, for 1978, and -6.6, 2.9, -3.0, and -3.3 for 1979.

Table 9.5 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 5. $\Delta u' = -9.815\%$

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	2.4	3.3	-.0	1.9	2.9	.9	.0	1.6	5.7
	1974	5.9	7.7	-.6	4.8	5.5	2.2	-.4	3.2	6.1
	1975	8.8	10.4	-8.2	4.5	7.1	2.5	-4.0	2.9	6.7
	1976	6.7	7.2	-9.3	2.0	5.3	1.7	-4.9	1.5	6.4
	1977	4.3	.8	-5.4	.5	4.4	1.0	-3.5	1.3	6.5
	1978	3.7	-1.0	-.7	1.4	4.9	1.0	-.0	2.6	6.9
	1979	4.9	-1.2	-.7	1.9	6.4	1.7	.2	3.5	6.9
Chase	1973	3.5	1.4	-.4	1.9	5.0	.8	-.6	2.3	5.7
	1974	5.5	4.6	.7	4.1	7.8	4.1	.2	5.1	6.1
	1975	6.0	7.1	.3	4.7	8.2	7.0	-.3	5.6	6.7
	1976	5.3	7.6	.7	4.7	7.4	7.6	.7	5.4	6.4
	1977	5.2	7.6	1.2	4.4	7.8	7.5	.9	5.5	6.5
	1978	5.4	7.0	1.2	4.5	8.3	6.7	1.1	5.8	6.9
	1979	5.6	7.2	.7	4.7	8.5	7.3	.6	6.1	6.9
DRI	1973	2.0	2.6	.8	1.8	.7	1.6	.9	2.1	5.7
	1974	5.7	7.8	1.6	5.2	1.8	4.2	2.5	2.6	6.1
	1975	6.1	7.6	-1.3	4.5	1.9	3.8	1.0	2.1	6.7
	1976	3.5	5.0	-2.2	2.1	.8	2.5	.5	1.3	6.4
	1977	3.3	4.4	.9	2.8	.9	2.5	2.1	1.7	6.5
	1978	3.9	4.6	2.7	3.7	1.5	2.8	3.0	2.2	6.9
	1979	4.9	5.6	2.6	2.5	1.9	3.5	2.9	2.5	6.9
Michigan	1973	-1.0	-.1	-.0	-.5	-1.1	-.1	-.0	-.5	5.7
	1974	-1.3	-.1	.0	-.7	-1.4	-.1	.0	-.7	6.1
	1975	-1.8	-.1	.1	-.8	-2.0	-.1	.1	-1.0	6.7
	1976	-2.2	-.1	.2	-1.0	-2.3	-.1	.2	-1.1	6.4
	1977	-2.0	-.1	.2	-.9	-2.1	-.1	.2	-.9	6.5
	1978	-1.5	.0	.3	-.6	-1.6	.0	.3	-.6	6.9
	1979	-1.3	.2	.6	-.4	-1.5	.1	.6	-.5	6.9
MPS	1973	1.2	2.8	.5	1.4	.7	3.8	.5	1.4	5.7
	1974	3.0	4.8	2.3	3.2	2.0	4.9	2.3	2.8	6.1
	1975	6.0	6.5	1.8	5.0	4.6	5.7	2.1	4.2	6.7
	1976	7.2	8.8	2.7	6.2	6.1	8.3	3.4	5.8	6.4
	1977	6.7	9.3	3.8	6.3	6.7	8.9	4.6	6.5	6.5
	1978	4.9	7.0	2.5	4.7	5.0	6.1	3.0	4.6	6.9
	1979	2.8	4.7	.9	2.7	1.5	3.3	.9	1.7	6.9
Wharton	1973	.5	.5	.1	.4	.2	.2	.0	.2	5.7
	1974	1.4	1.5	.5	1.2	.7	.7	.4	.6	6.1
	1975	2.1	2.0	1.0	1.7	1.0	1.0	.7	.9	6.7
	1976	2.0	1.9	.9	1.7	1.0	1.0	.4	.8	6.4
	1977	2.0	1.9	.8	1.6	1.0	1.1	.4	.8	6.5
	1978	2.1	1.8	.5	2.1	1.1	1.0	.7	.9	6.9
	1979	2.6	2.2	.9	2.0	1.5	1.2	1.7	1.5	6.9

Table 9.6 Full Model Simulations, Percent Changes from Baseline, Fourth Quarter of Each Year, Investment in Equipment, Structures, Housing and Total Fixed, and Static Tax Loss as Percent of Total Fixed Investment

Simulation 6. OTA Alternative

(1) Model	(2) Year	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11) Static Tax Loss as Percent of Fixed Investment
		Percent Changes from Baseline								
		Original Equations				C-E Equations				
		Equipment	Structures	Housing	Total Fixed	Equipment	Structures	Housing	Total Fixed	
BEA	1973	1.8	2.4	-.0	1.4	2.2	.7	.0	1.2	1.1
	1974	4.4	5.3	-.5	3.4	4.2	1.8	-.4	2.5	2.7
	1975	6.4	6.8	-6.1	3.0	5.4	2.0	-3.6	2.1	3.6
	1976	4.7	4.1	-7.1	1.0	3.8	1.2	-4.4	.8	3.5
	1977	2.8	-.5	-4.0	.0	3.0	.6	-3.0	.6	3.2
	1978	2.4	-1.4	-.2	.8	3.3	.6	.2	1.8	2.9
	1979	3.2	-1.5	-.3	1.1	4.2	.9	.4	2.4	2.7
Chase	1973	.9	.4	.1	.5	1.3	.2	.1	.6	1.1
	1974	2.0	2.2	.5	1.7	3.0	2.0	.3	2.1	2.7
	1975	2.8	4.4	.7	2.6	3.5	4.2	.2	2.8	3.6
	1976	2.7	5.0	1.3	2.7	3.5	4.8	1.3	3.1	3.5
	1977	2.7	5.2	1.1	2.7	3.7	5.1	.8	3.1	3.2
	1978	2.9	4.7	.9	2.7	3.9	4.5	.9	3.1	2.9
	1979	2.9	4.5	.4	2.6	3.9	4.4	.4	3.1	2.7
DRI	1973	1.3	1.3	.4	1.0	.5	1.1	.4	.6	1.1
	1974	6.8	6.9	.9	5.4	2.1	5.1	1.6	2.7	2.7
	1975	10.6	9.5	-1.4	7.0	3.4	7.3	1.1	3.7	3.6
	1976	9.3	7.7	-4.3	4.9	2.4	6.2	-.3	2.5	3.5
	1977	8.3	6.2	-2.6	4.5	1.6	5.6	.8	2.2	3.2
	1978	8.4	5.4	.6	5.5	1.9	5.3	3.4	3.1	2.9
	1979	9.6	5.6	2.3	6.5	2.7	6.2	5.0	4.1	2.7
Michigan	1973	.7	.1	.0	.4	.5	.0	.0	.3	1.1
	1974	1.0	.2	.0	.6	1.0	.1	.1	.6	2.7
	1975	1.2	.2	.1	.6	1.2	.1	.1	.6	3.6
	1976	1.1	.1	.1	.6	1.0	.1	.1	.6	3.5
	1977	1.0	.1	.1	.6	1.1	.1	.1	.1	3.2
	1978	1.0	.1	.2	.5	1.0	.1	.2	.6	2.9
	1979	1.0	.1	.4	.6	1.1	.1	.4	.7	2.7
MPS	1973	1.3	2.3	.2	1.3	.6	3.1	.3	1.1	1.1
	1974	3.2	3.9	1.5	3.0	1.7	3.8	1.5	2.1	2.7
	1975	6.8	5.5	1.3	4.9	4.1	4.4	1.6	3.5	3.6
	1976	8.6	7.7	2.1	6.5	5.7	6.8	2.7	5.1	3.5
	1977	8.3	8.4	3.4	6.8	6.5	7.4	4.1	5.9	3.2
	1978	6.5	6.4	2.6	5.4	5.1	4.8	3.1	4.4	2.9
	1979	4.0	4.2	1.2	3.3	1.8	2.3	1.3	1.8	2.7
Wharton	1973	.9	.1	.1	.4	.6	-.2	.1	.2	1.1
	1974	2.0	1.2	.6	1.4	1.1	.3	.5	.8	2.7
	1975	2.7	1.6	.9	1.9	1.5	.6	.7	1.1	3.6
	1976	2.6	1.6	.7	1.8	1.5	.7	.4	1.0	3.5
	1977	2.7	1.8	.7	1.9	1.6	.8	.4	1.0	3.2
	1978	3.0	1.8	.6	2.0	1.7	.7	.8	1.2	2.9
	1979	3.5	2.3	.7	2.4	2.1	1.0	1.6	1.7	2.7

Table 10 Static Tax Losses (Without Feedback), Fourth Quarter of Each Year

(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Simulations					
Year	ITC: $k'_e=2k_e$; $k'_s=k_e$	ITC with Personal Tax Off-set	10-5-3	$\Delta k' =$ +16.264%	$\Delta u' =$ -9.815%	OTA Alter-native
			Billions of Current Dollars			
1, 1973-IV	9.8	0	2.3	14.5	11.5	2.3
2, 1974-IV	10.7	0	5.9	15.9	12.2	5.4
3, 1975-IV	15.1	0	12.1	15.7	13.5	7.3
4, 1976-IV	17.2	0	18.8	18.5	15.3	8.2
5, 1977-IV	19.9	0	26.2	21.5	18.0	9.0
6, 1978-IV	23.6	0	32.7	24.7	22.3	9.5
7, 1979-IV	26.4	0	35.9	26.7	24.4	9.4
			Billions of 1972 Dollars			
1, 1973-IV	9.0	0	2.1	13.3	10.5	2.1
2, 1974-IV	8.9	0	4.9	13.1	10.0	4.4
3, 1975-IV	11.6	0	9.3	12.1	10.3	5.6
4, 1976-IV	12.6	0	13.8	13.6	11.2	6.0
5, 1977-IV	13.7	0	18.1	14.9	12.4	6.2
6, 1978-IV	15.0	0	20.9	15.8	14.2	6.1
7, 1979-IV	15.5	0	21.0	15.6	14.3	5.5

GLOSSARY

CCCA	Capital Consumption Adjustment, Corporate
CTR	Federal Corporate Tax Receipts
D	Tax Depreciation Allowances, Current Law
D_A	Tax Depreciation Allowances, 10-5-3
D_B	Tax Depreciation Allowances, OTA Alternative
E	Investment Expenditures on Producers' Durable Equipment, Constant Dollars
E$	Investment Expenditures on Producers' Durable Equipment, Current Dollars
$I_j\$$	Producers' Investment Expenditures for Sector j , Current Dollars
k_e	Rate of Investment Tax Credit, Equipment
k_s	Rate of Investment Tax Credit, Structures
$\hat{k}_j$	Effective Rate of Investment Tax Credit for Sector j
L_e	Tax Life of Equipment
L_s	Tax Life of Structures
PCCA	Capital Consumption Adjustment, Proprietors
PTR	Federal Personal Tax Receipts
s	Corporate Share of Nonresidential Business Capital Consumption Allowances
S	Investment Expenditures on Producers' Structures, Constant Dollars
S$	Investment Expenditures on Producers' Structures, Current Dollars
TD_j	Tax Depreciation for Sector j
u	Rate of Federal Business Income Taxation

REFERENCES

Bischoff, C.W. 1971. "Business Investment in the 1970s: A Comparison of Models." Brookings Papers on Economic Activity,1971-1: 13-63.

Clark, P.K. 1979. "Investment in the 1970s: Theory, Performance and Prediction." Brookings Papers on Economic Activity, 1979-1: 73-124.

Coen, R. M. 1968. "Effects of Tax Policy on Investment in Manufacturing." American Economic Review 58 (May): 200-11.

__________. 1969. "Tax Policy and Investment Behavior: Comment." American Economic Review 59 (June): 370-79.

Eisner, R. 1969a. "Investment and the Frustrations of Econometricians." American Economic Review 59 (May): 50-64.

__________. 1969b. "Tax Policy and Investment Behavior: Comment." American Economic Review 59 (June): 379-88.

__________. 1978. Factors in Business Investment. Cambridge: Ballinger for the National Bureau of Economic Research.

__________ and P. J. Lawler. 1975. "Tax Policy and Investment: An Analysis of Survey Responses." American Economic Review 65 (March): 206-12.

__________ and M. I. Nadiri. 1968. "On Investment Behavior and Neoclassical Theory." Review of Economics and Statistics 50 (August): 369-82.

_________________________. 1970. "Once More on that 'Neoclassical Theory of Investment Behavior.'" Review of Economics and Statistics 52 (May): 216-22.

__________ and R. H. Strotz. 1963. "Determinants of Business Investment." in Commission on Money and Credit, Impacts of Monetary Policy: 60-337. Englewood Cliffs, N.J.: Prentice-Hall.

Fromm, G. ed. 1971. Tax Incentives and Capital Spending. Washington, D.C.: Brookings, including papers by R.E. Hall and D.W. Jorgenson, C.W. Bischoff, R. M. Coen, L.R. Klein and P. Taubman, and discussion by F. M. Fisher and A.C. Harberger.

Green, R.J. 1980. "Investment Determinants and Tax Factors in Major Macroeconometric Models." In G.M. von Furstenberg, The Government and Capital Formation, pp. 337-381. Cambridge: Ballinger.

Hall, R.E. and D.W. Jorgenson. 1967. "Tax Policy and Investment Behavior." American Economic Review 57 (June):391-414.

Hendershott, P.H. and S-C Hu. 1980. "The Relative Impacts of Various Proposals to Stimulate Business Investment." In G.M. von Furstenberg, The Government and Capital Formation, pp.321-336. Cambridge: Ballinger.

Hirsch, A.A., S.H. Hymans and H.T. Shapiro. 1978. "Econometric Review of Alternative Fiscal and Monetary Policies, 1971-75." Review of Economics and Statistics 60 (August):334-345.

Joint Economic Committee. 1978. Economic Stabilization Policies: The Historical Record, 1962-76, Including "Data Resources, Inc. - Fiscal Policy: The Scoreboard Between 1962 and 1976," and "Wharton Econometric Forecasting Associates, Inc. - A Study in Counter-Cyclical Policy," and Comments by Arthur M. Okun and Alan Greenspan.

Jorgenson, D. W. 1963. "Capital Theory and Investment Behavior." American Economic Review 53 (May): 247-59.

Kilpatrick, R.W. 1977. Private Memoranda of June 16, June 30, July 15, and August 4, from the Office of Management and Budget, on "Simulations of Investment Tax Incentives in the Chase and Wharton Models," "A Correction to My Previous Memo on Investment Tax Incentives," "The Effect of Tax Changes on the User Cost of Capital in Wharton, Chase, and DRI," and "Investment Tax Incentives and Capacity Utilization in the Chase Model." (Authorized for private use only.)

Klein, L.R. and E. Burmeister, ed. 1976. Econometric Model Performance, Comparative Simulation Studies of the U.S. Economy. University of Pennsylvania Press.

Kopcke, R. W. 1977. "The Behavior of Investment Spending During the Recession and Recovery, 1973-76." New England Economic Review (November/December): 5-41.

____________. 1977. "The Outlook for Investment Spending to 1980." New England Economic Review (November/December): 42-59.

McClain, D. 1979. "The Recent Tracking Performance of Business Fixed Investment Equations in Four Large-Scale Econometric Models." Unpublished, Private Memorandum of April 16 at Council of Economic Advisers.

McKee. M. 1978 and 1979. Unpublished Private Memoranda of December 8, 1978, December 27, 1978 entitled "The Ponies," and Unpublished, Private Memorandum of January 26, 1979, entitled "Determinants of Investment," all written at the Council of Economic Advisers.

McNees, S.K. 1979. "The Forecasting Record for the 1970s." New England Economic Review (September/October): 1-21.

Nerlove, M. 1966. "A Tabular Survey of Macro-Econometric Models." International Economic Review 7 (May): 127-75.

Taubman, P. and T. J. Wales. 1969. "The Impact of Investment Subsidies in a Neoclassical Theory of Investment Behavior." Review of Economics and Statistics 51 (August): 287-297.

Appendix A. A Detailed Look at MPS Results Under Different Monetary Regimes

Simulation of the original investment equipment equation in the MPS model indicated very large effects for tax incentives. Addition of some 10 percent to the investment tax credit for equipment and for structures brought an increase of 15.1 percent in equipment expenditures by 1977-IV. Our preferred revised equation, using a constant term and ρ', a rental price of capital variable untainted by dividend or earning-price ratios, knocked that increase down to only 2.8 percent. The full model MPS simulations were generally consistent with the single equations,with results depending somewhat,however,on the assumed monetary constraints. With the relatively less responsive policy of keeping M-1 at its baseline level, the full model simulation indicated a slightly lesser increase in investment, 14.4 percent for the original specifications when there was no personal tax offset (Table 1.5-M1, simulation 1), but a larger response, 20.2 percent, with personal taxes increased, quarter by quarter, by the amount of tax reduction from the increased investment tax credit (simulation 2).

With the more flexible policy of holding unborrowed reserves at their baseline values,equipment spending was up by all of 19.7 percent by 1977-IV, with no personal tax offset. With the personal tax offset, the unborrowed reserve constraint offered the somewhat lesser equipment increase of 17.2 percent, as shown in Table 1.5.

Full model simulation with our preferred equipment investment equation in all cases indicated positive feedback to the original investment stimulus. But in all cases the end result was considerably less additional investment than with the original model equations. Increases in equipment spending ranged from 4.7 percent to 11.8 percent, depending variously upon the monetary regime and personal income tax rates.

Differences between the original model equation and our preferred equation in the case of structures were much less marked. While simulation of the investment equation itself indicated a slightly higher stimulus with our equation, 6.8 percent as against 5.7 percent, the full model simulations all resulted in lesser increases in our preferred equations. The various combinations of monetary and personal tax rigimes added varied and sometimes substantial effects. All this suggests that investment tax incentives aside, the MPS model can produce powerful results for investment with either explicit changes in monetary policy or implicit changes following from the response to variation in personal income tax rates.

Full model simulations over 28 quarters, from 1973-I to 1979-IV,indicated first that, except for simulation 2, involving an offsetting increase in personal income taxes, the stimulatory effects on nonresidential equipment and structures investment were largely if not entirely offset by negative effects on housing or, generally, residential investment. Further, there was distinct evidence of cyclical movement or ultimate negative reaction to the original stimuli. With M1 held at baseline values, as shown in Table 3.5-M1, full model simulation 3 (10-5-3) with the originally specified investment equation brought increases of 5.7 percent in equipment spending by the nineteenth quarter and 10.5 percent in structures spending by the eighteenth quarter. By 1979-IV, the twenty-eighth quarter, however, equipment spending was actually .8 percent below baseline and nonresidential structures only 1.8 percent above it. Housing investment started down with the very first quarter of the simulation and was off by 17.1 percent by the fourth quarter of 1979.

With our preferred, revised investment equations, equipment investment was off even more, 4.9 percent, by the end of the simulation period. Nonresidential structures investment was up only one percent and housing investment was down by 18.4 percent.

Looking at stocks, we note that by the end of the 28-quarter simulation, total equipment was up only 2.2 percent with the original model equations and structures up 2.5 percent, while the stock of housing was down by 1.9 percent. Results on stocks were similar with our preferred equations, except that the stock of equipment was up even less, by only .4 percent.

Our simulation 4, involving a 16.264 percent increase in the investment tax credit as the present value equivalent replacement for 10-5-3, resulted in much larger initial increases in equipment spending with baseline values of M1: 30.5 percent with the original model equation and 10.9 percent with our preferred equations, after 15 and 16 quarters respectively. Again, however, these increases were quite reversed by the end of the simulation period, falling to -6.6 percent in equipment spending with the original model equation and +.1 percent with our preferred equations. Again, housing investment was down by some 2 percent.

The present value equivalent change in the corporate tax rate, a reduction of 9.815 percentage points, had a much lesser effect in stimulating investment in equipment and structures, leaving both spending and capital stock essentially unchanged by the end of the simulation period. It brought some reduction in investment in housing with the M1 monetary constraint but a slight increase in housing when unborrowed reserves were maintained at baseline levels.

The OTA alternative brought equipment and structures investment to peaks of some 5 percent above baseline by the fifteenth and seventeenth quarters with M1 constrained at baseline levels, but left investment in each case close to baseline by 1979-IV. Investment was up 1.4 percent for equipment and .6 percent for nonresidential structures with the original model specifications, but off 2.3 percent and .4 percent, respectively, with our preferred equations. Again with either set of equations housing investment was down significantly.

Simulations in which unborrowed reserves rather than M-1 were kept at their baseline values generally resulted in larger peaks and larger end values for investment in equipment and in structures and also permitted expansion in investment in housing. Holding unborrowed reserves at baseline values in fact permitted a substantially accommodative monetary policy. Except where there were offsetting increases in personal income taxes, results, as shown in Tables 4.5 and 4.5-M1, also included substantially higher prices as measured by the GNP implicit price deflator. The expansion in both residential and nonresidential investment was generally considerably larger with the original model equations than with our preferred equations. With our preferred equations, increased investment was always considerably less than the original amount of tax reduction. Thus, for example, even the 16.264 percent increase in the investment tax credit in simulation 4 brought an increase in equipment investment of only 8.6 percent and in the stock of equipment of only 9.0 percent by 1979-IV (Table 3.5).

The MPS model broke down or "exploded" in simulation 4 (the 16.264 percent increase in the investment tax credit) with the original model equations and unborrowed reserves kept at their baseline value. After a very great increase in equipment spending, reaching 32.6 percent above baseline by the fourteenth quarter, a sharp cycle developed. By 1979-IV, the simulation indicated equipment spending 123.2 percent below baseline, thus actually negative, and falling sharply! What apparently happened was that the model equations could not sensibly accommodate the big increase in orders for equipment, generating a huge increase in the unfilled order variable. This in turn generated first a decline in the rate of growth and then an absolute decline in expenditures for equipment. But with unfilled orders rising as new orders exceeded expenditures, unfilled orders continued to rise, driving expenditures down further and in turn driving unfilled orders up still higher. Thus, the equations eventually generated negative expenditures for equipment, with unfilled orders still rising, despite the sharp decline in new orders brought on by the accelerator effects of falling business product. By the end of the period of simulation, expenditures for producers durables, already negative, seemed to be in an accelerating fall with no end in sight.

Looking at absolute changes in Table 5.5-M1, we find that with M1 kept at its baseline values, total fixed investment, including residential as well as nonresidential, was actually below baseline 1979-IV both for the original equations and our preferred investment equations, in all of the simulations except number 2, in which personal income taxes were raised, and in simulation 1 with the original equation where it was virtually unchanged. With our preferred equations, gross national product was above baseline and the GNP price deflator below in all simulations except number 2. The unemployment rate was higher than baseline in all simulations with our preferred equations except number 2. Unemployment was also somewhat higher in simulations with the original model investment equations, except in simulations 2 and 4.

With the accommodative monetary policy resulting from holding unborrowed reserves at their baseline values, total fixed investment was above baseline by 1979-IV except in the case of simulation 4, where as we have already noted, the model essentially fell off the track. In this set of simulations, except where the model exploded and in the case of the personal income tax increase (simulation 2) the GNP price deflator was distinctly raised for both equations. In the original model equations, omitting the exceptions indicated, the deflator was raised from 7.7 to 14.7 percent by 1979-IV. With our revised equations, the price inflation appeared even greater, the GNP implicit price deflator rising by values between 10.8 percent and 20.1 percent. With either set of equations, the highest price inflation was generated with 10-5-3. The simulations under the monetary regime with baseline unborrowed reserves in all cases showed increases in GNP and decreases in unemployment (Table 5.5) again except for the "exploding" simulation of the increased investment credit with the original model equations.

Appendix B. Estimated Increases in Tax Depreciation Charges, Corporate and Noncorporate, 10-5-3 and OTA Alternative Compared*

	10-5-3		OTA Alternative	
	Corporate $[s * (D_A-D)]$	Noncorporate $[(1-s) * (D_A-D)]$	Corporate $[s * (D_B - D)]$	Noncorporate $[(1-s)*(D_B-D)]$
1973.1	2.88258	.56860	2.95524	.58293
	2.88258	.56860	2.95524	.58293
	2.88258	.56860	2.95524	.58293
	2.88258	.56860	2.95524	.58293
1974.1	9.04800	1.85845	8.07129	1.65783
	9.04800	1.85845	8.07129	1.65783
	9.04800	1.85845	8.07129	1.65783
	9.04800	1.85845	8.07129	1.65783
1975.1	19.73724	4.04903	11.34573	2.32754
	19.73724	4.04903	11.34573	2.32754
	19.73724	4.04903	11.34573	2.32754
	19.73724	4.04903	11.34573	2.32754
1976.1	31.19841	6.36156	12.83172	2.61647
	31.19841	6.36156	12.83172	2.61647
	31.19841	6.36156	12.83172	2.61647
	31.19841	6.36156	12.83172	2.61647
1977.1	43.81409	8.89631	13.90703	2.82378
	43.81409	8.89631	13.90703	2.82378
	43.81409	8.89631	13.90703	2.82378
	43.81409	8.89631	13.90703	2.82378
1978.1	54.78847	11.09855	14.56696	2.95084
	54.78847	11.09855	14.56696	2.95084
	54.78847	11.09855	14.56696	2.95084
1978.4	54.78847	11.09855	14.56696	2.95084
1979.1	62.72022	12.70529	14.77514	2.99301
	62.72022	12.70529	14.77514	2.99301
	62.72022	12.70529	14.77514	2.99301
1979.4	62.72022	12.70529	14.77514	2.99301

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*Projections for 1981 to 1987 would be more than double the figures here, or roughly 110 percent higher.

Table 11.1 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e; k_s' = k_e$							
	1-1973	2.8	3.0	-.0	3.5	.8	.0
	2-1974	6.7	6.7	-.6	6.1	2.1	-.4
	3-1975	10.8	10.0	-8.3	9.1	2.5	-4.3
	4-1976	9.6	8.0	-10.4	8.0	1.9	-6.0
	5-1977	7.9	2.6	-6.2	7.8	1.4	-4.4
	6-1978	7.2	.3	-1.2	8.3	1.4	-.3
	7-1979	8.3	-1.0	-1.1	9.9	2.1	-.1
2. ITC: with personal tax offset $k_e' = 2k_e; k_s' = k_e$							
	1-1973	1.8	3.2	.1	1.1	-.8	.1
	2-1974	5.0	7.1	-.0	3.0	-.4	.7
	3-1975	9.4	10.4	-5.7	6.8	.6	-1.0
	4-1976	9.3	8.1	-7.8	7.0	.1	-2.8
	5-1977	7.8	3.6	-3.5	7.4	-.0	-.6
	6-1978	7.2	1.8	-.3	7.6	.5	.0
	7-1979	7.9	.3	-.3	8.1	.7	.6
3. 10-5-3							
	1-1973	.8	3.9	-.0	1.0	.8	.0
	2-1974	2.9	9.7	-.6	2.7	2.1	-.4
	3-1975	6.0	14.4	-8.5	5.1	2.9	-3.8
	4-1976	6.2	12.8	-11.4	5.4	2.8	-6.1
	5-1977	5.7	7.7	-7.3	6.7	3.1	-5.0
	6-1978	6.5	5.6	-2.1	8.5	3.8	-.6
	7-1979	8.5	4.3	-1.8	10.8	4.8	-.3

Table 11.1 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

BEA

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k_e' = +16.264\%$							
	1-1973	7.1	-.3	.0	8.8	1.0	-.0
	2-1974	15.7	-.7	-.4	15.3	3.1	-.6
	3-1975	21.3	-1.9	-11.4	18.8	3.6	-11.1
	4-1976	16.6	-4.0	-11.6	13.1	1.0	-11.3
	5-1977	15.3	-6.5	-6.6	11.4	-.4	-7.3
	6-1978	13.2	-7.2	-.8	12.6	-.2	-1.2
	7-1979	14.9	-6.6	-.2	15.1	.6	-.4
5. $\Delta u' = -9.815\%$							
	1-1973	2.4	3.3	-.0	2.9	.9	.0
	2-1974	5.9	7.7	-.6	5.5	2.2	-.4
	3-1975	8.8	10.4	-8.2	7.1	2.5	-4.0
	4-1976	6.7	7.2	-9.3	5.3	1.7	-4.9
	5-1977	4.3	.8	-5.4	4.4	1.0	-3.5
	6-1978	3.7	-1.0	-.7	4.9	1.0	-.0
	7-1979	4.9	-1.2	-.7	6.4	1.7	.2
6. OTA Alternative							
	1-1973	1.8	2.4	-.0	2.2	.7	.0
	2-1974	4.4	5.3	-.5	4.2	1.8	-.4
	3-1975	6.4	6.8	-6.1	5.4	2.0	-3.6
	4-1976	4.7	4.1	-7.1	3.8	1.2	-4.4
	5-1977	2.8	-.5	-4.0	3.0	.6	-3.0
	6-1978	2.4	-1.4	-.2	3.3	.6	.2
	7-1979	3.2	-1.5	-.3	4.2	.9	.4

Table 11.2 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k'_e = 2k_e$; $k'_s = k_e$							
	1-1973	1.5	.5	-.0	2.3	.1	-.1
	2-1974	3.2	3.1	.5	4.4	2.7	.3
	3-1975	5.3	6.1	.9	6.5	5.6	.4
	4-1976	5.5	7.8	1.3	6.7	7.5	1.6
	5-1977	6.2	8.9	1.7	7.6	8.7	1.4
	6-1978	6.6	8.5	1.6	8.2	8.2	1.5
	7-1979	6.8	8.8	1.0	8.5	8.5	.9
2. ITC: with personal tax offset $k'_e = 2k_e$; $k'_s = k_e$							
	1-1973	.6	-.1	-.7	1.1	-.3	-.7
	2-1974	.4	.9	1.1	1.3	.8	.4
	3-1975	3.3	3.1	1.8	3.8	2.7	.4
	4-1976	3.5	4.8	1.1	4.1	4.5	1.2
	5-1977	3.7	5.8	1.0	4.5	5.7	1.0
	6-1978	3.2	5.7	-.5	4.0	5.6	-.4
	7-1979	2.7	5.7	-.5	3.8	5.3	-.4
3. 10-5-3							
	1-1973	.4	.3	.3	.6	.2	.2
	2-1974	1.4	2.6	.7	2.4	2.4	.5
	3-1975	2.5	6.3	.9	3.9	5.8	.3
	4-1976	3.2	8.8	2.0	5.2	8.3	1.9
	5-1977	4.6	11.1	2.6	7.6	10.6	2.2
	6-1978	6.2	11.8	2.6	9.7	11.4	2.7
	7-1979	7.0	12.8	1.7	10.2	12.8	1.6

Table 11.2 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

Chase

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k_e' = +16.264\%$							
	1-1973	3.6	.9	-.5	5.0	.2	-.7
	2-1974	7.3	3.6	.2	8.7	2.9	-.2
	3-1975	10.4	5.6	.8	10.6	5.2	.5
	4-1976	9.7	5.9	1.4	9.9	5.7	1.6
	5-1977	9.5	6.1	1.5	10.2	5.9	1.2
	6-1978	9.6	5.9	1.7	10.5	5.7	1.5
	7-1979	9.7	6.1	1.0	10.7	6.1	.8
5. $\Delta u' = -9.815\%$							
	1-1973	3.5	1.4	-.4	5.0	.8	-.6
	2-1974	5.5	4.6	.7	7.8	4.1	.2
	3-1975	6.0	7.1	.3	8.2	7.0	-.3
	4-1976	5.3	7.6	.7	7.4	7.6	.7
	5-1977	5.2	7.6	1.2	7.8	7.5	.9
	6-1978	5.4	7.0	1.2	8.3	6.7	1.1
	7-1979	5.6	7.2	.7	8.5	7.3	.6
6. OTA Alternative							
	1-1973	.9	.4	.1	1.3	.2	.1
	2-1974	2.0	2.2	.5	3.0	2.0	.3
	3-1975	2.8	4.4	.7	3.5	4.2	.2
	4-1976	2.7	5.0	1.3	3.5	4.8	1.3
	5-1977	2.7	5.2	1.1	3.7	5.1	.8
	6-1978	2.9	4.7	.9	3.9	4.5	.9
	7-1979	2.9	4.5	.4	3.9	4.4	.4

Table 11.3 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

(1)	DRI (2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	2.5	2.3	.5	1.0	1.8	.6
	2-1974	11.0	8.9	.2	3.5	6.3	1.4
	3-1975	16.0	10.9	-3.8	5.1	8.0	-.1
	4-1976	16.0	9.4	-6.6	4.5	7.0	-1.1
	5-1977	15.7	7.7	-4.8	3.9	6.5	.3
	6-1978	15.6	6.3	-2.2	4.0	5.6	2.2
	7-1979	17.7	6.3	-.5	4.6	6.0	3.6
2. ITC: with personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	1.6	1.8	.8	-.0	1.3	-- .8
	2-1974	10.0	8.1	2.0	1.9	5.2	3.2
	3-1975	15.4	11.1	-1.5	3.8	7.6	2.9
	4-1976	15.6	9.8	-4.7	3.6	7.3	2.0
	5-1977	14.9	7.9	-2.9	3.0	7.0	2.9
	6-1978	14.5	6.2	.4	2.9	6.2	4.8
	7-1979	16.5	6.4	3.4	3.5	6.6	7.2
3. 10-5-3							
	1-1973	.9	1.4	.3	.3	1.2	.4
	2-1974	5.1	7.8	1.2	1.8	6.1	1.7
	3-1975	10.4	12.7	.1	3.7	10.3	2.0
	4-1976	12.6	14.5	-2.1	3.7	11.4	1.6
	5-1977	15.4	17.0	-1.4	3.7	13.1	3.2
	6-1978	19.0	18.3	.8	4.5	14.0	6.6
	7-1979	23.0	20.0	.8	5.7	16.1	8.9

Table 11.3 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

(1)	DRI (2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k'_e$ = +16.264%							
	1-1973	6.1	3.1	1.0	2.3	2.0	1.0
	2-1974	29.4	12.2	-.4	8.7	5.7	2.4
	3-1975	41.5	15.2	-10.1	11.2	5.5	-1.1
	4-1976	35.5	8.6	-16.9	8.3	1.7	-3.0
	5-1977	32.9	4.1	-11.5	7.0	.0	.9
	6-1978	32.7	2.5	-3.9	7.1	-.1	4.5
	7-1979	37.6	3.0	-1.0	8.0	.6	5.9
5. $\Delta u'$ = -9.815%							
	1-1973	2.0	2.6	.8	.7	1.6	.9
	2-1974	5.7	7.8	1.6	1.8	4.2	2.5
	3-1975	6.1	7.6	-1.3	1.9	3.8	1.0
	4-1976	3.5	5.0	-2.2	.8	2.5	.5
	5-1977	3.3	4.4	.9	.9	2.5	2.1
	6-1978	3.9	4.6	2.7	1.5	2.8	3.0
	7-1979	4.9	5.6	2.6	1.9	3.5	2.9
6. OTA Alternative							
	1-1973	1.3	1.3	.4	.5	1.1	.4
	2-1974	6.8	6.9	.9	2.1	5.1	1.6
	3-1975	10.6	9.5	-1.4	3.4	7.3	1.1
	4-1976	9.3	7.7	-4.3	2.4	6.2	-.3
	5-1977	8.3	6.2	-2.6	1.6	5.6	.8
	6-1978	8.4	5.4	.6	1.9	5.3	3.4
	7-1979	9.6	5.6	2.3	2.7	6.2	5.0

Table 11.4 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e;\ k_s' = k_e$							
	1-1973	.8	.1	.0	1.1	.1	.0
	2-1974	1.3	.2	-.0	1.5	.2	-.0
	3-1975	1.5	.2	-.0	1.7	.2	-.1
	4-1976	1.4	.1	-.0	1.5	.1	-.1
	5-1977	1.6	.2	-.0	1.8	.1	-.0
	6-1978	1.6	.1	-.0	1.8	.1	-.0
	7-1979	1.6	.1	.0	1.8	.1	-.0
2. ITC: with personal tax offset $k_e' = 2k_e;\ k_s' = k_e$							
	1-1973	.7	-.4	-.3	.9	-.4	-.3
	2-1974	.8	-.6	-.7	1.0	-.5	-.7
	3-1975	.9	-.8	-.8	1.0	-.7	-.9
	4-1976	.8	-.9	-.9	.8	-.8	-1.0
	5-1977	.8	-1.0	-1.0	1.0	-.9	-1.0
	6-1978	.8	-.9	-1.2	1.0	-.8	-1.2
	7-1979	.7	-.8	-1.3	.9	-.7	-1.3
3. 10-5-3							
	1-1973	2.3	.2	.0	2.1	.2	.0
	2-1974	3.2	.4	.0	3.2	.4	.0
	3-1975	3.8	.4	-.0	3.8	.4	-.0
	4-1976	3.4	.4	.0	3.2	.3	.0
	5-1977	3.2	.3	.1	3.2	.3	.1
	6-1978	2.9	.2	.3	3.1	.2	.3
	7-1979	2.9	.2	.8	3.2	.2	.8

Table 11.4 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

Michigan

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k'_e$ = +16.264%							
	1-1973	2.3	.2	.0	2.4	.2	.0
	2-1974	3.2	.4	-.0	3.4	.4	-.0
	3-1975	3.6	.4	-.1	3.7	.4	-.1
	4-1976	3.0	.3	-.1	2.9	.2	-.1
	5-1977	2.8	.2	-.1	3.0	.2	-.1
	6-1978	2.6	.1	-.1	2.9	.1	-.1
	7-1979	2.6	.1	-.1	2.9	.1	-.1
5. $\Delta u'$ = -9.815%							
	1-1973	-1.0	-.1	-.0	-1.1	-.1	-.0
	2-1974	-1.3	-.1	.0	-1.4	-.1	.0
	3-1975	-1.8	-.1	.1	-2.0	-.1	.1
	4-1976	-2.2	-.1	.2	-2.3	-.1	.2
	5-1977	-2.0	-.1	.2	-2.1	-.1	.2
	6-1978	-1.5	.0	.3	-1.6	.0	.3
	7-1979	-1.3	.2	.6	-1.5	.1	.6
6. OTA Alternative							
	1-1973	.7	.1	.0	.5	.0	.0
	2-1974	1.0	.2	.0	1.0	.1	.1
	3-1975	1.2	.2	.1	1.2	.1	.1
	4-1976	1.1	.1	.1	1.0	.1	.1
	5-1977	1.0	.1	.1	1.1	.1	.1
	6-1978	1.0	.1	.2	1.0	.1	.2
	7-1979	1.0	.1	.4	1.1	.1	.4

Table 11.5 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

MPS (with Unborrowed Reserves at Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	2.5	2.6	.5	.9	3.4	.5
	2-1974	5.8	4.9	2.5	2.5	4.1	2.2
	3-1975	13.5	8.7	1.7	6.3	7.1	2.0
	4-1976	19.4	13.0	2.4	10.0	10.2	3.5
	5-1977	19.7	15.0	4.2	11.8	11.3	5.6
	6-1978	16.6	12.4	3.5	10.0	8.4	4.9
	7-1979	11.6	9.4	1.8	5.5	5.6	3.1
2. ITC: with personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	1.0	1.1	-.6	-1.1	2.0	-.6
	2-1974	3.9	1.7	-1.3	-1.3	1.8	-1.8
	3-1975	9.9	4.4	-2.6	-1.0	3.9	-2.7
	4-1976	16.2	7.7	-3.6	1.9	6.7	-3.4
	5-1977	17.2	9.7	-1.8	4.7	8.9	-1.6
	6-1978	15.6	9.4	1.3	6.1	9.3	2.2
	7-1979	12.7	9.0	2.8	6.2	9.8	5.3
3. 10-5-3							
	1-1973	.8	3.5	.2	.6	4.9	.3
	2-1974	2.2	5.9	1.4	1.8	6.7	1.6
	3-1975	5.8	8.7	1.6	4.9	8.7	1.9
	4-1976	9.1	13.5	2.9	8.0	14.0	3.7
	5-1977	10.9	16.8	5.4	10.7	17.4	6.4
	6-1978	10.2	15.0	5.7	6.8	14.1	6.8
	7-1979	7.8	12.7	4.9	6.0	10.7	6.0

Table 11.5 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

MPS (with Unborrowed Reserves of Baseline Values)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k'_e$ = +16.264%							
	1-1973	8.9	.8	.9	1.5	.3	.7
	2-1974	17.9	6.0	5.7	4.9	1.6	3.5
	3-1975	29.2	10.4	3.2	12.2	3.5	2.8
	4-1976	30.2	13.2	3.2	17.2	5.2	4.9
	5-1977	14.7	12.3	2.4	18.4	5.9	7.6
	6-1978	-18.1	4.3	-3.2	15.1	3.2	6.2
	7-1979	-123.2	-12.4	-11.6	8.6	.2	3.3
5. $\Delta u'$ = -9.815%							
	1-1973	1.2	2.8	.5	.7	3.8	.5
	2-1974	3.0	4.8	2.3	2.0	4.9	2.3
	3-1975	6.0	6.5	1.8	4.6	5.7	2.1
	4-1976	7.2	8.8	2.7	6.1	8.3	3.4
	5-1977	6.7	9.3	3.8	6.7	8.9	4.6
	6-1978	4.9	7.0	2.5	5.0	6.1	3.0
	7-1979	2.8	4.7	.9	1.5	3.3	.9
6. OTA Alternative							
	1-1973	1.3	2.3	.2	.6	3.1	.3
	2-1974	3.2	3.9	1.5	1.7	3.8	1.5
	3-1975	6.8	5.5	1.3	4.1	4.4	1.6
	4-1976	8.6	7.7	2.1	5.7	6.8	2.7
	5-1977	8.3	8.4	3.4	6.5	7.4	4.1
	6-1978	6.5	6.4	2.6	5.1	4.8	3.1
	7-1979	4.0	4.2	1.2	1.8	2.3	1.3

Table 11.5 M-1 Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

MPS, with M1 at Baseline Values

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
1. ITC: no personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	2.4	2.5	-.2	.7	3.2	-.2
	2-1974	4.6	3.3	-3.1	1.4	2.9	-2.5
	3-1975	10.5	5.8	-4.0	3.3	5.0	-2.9
	4-1976	14.9	8.4	-5.3	5.2	6.8	-3.8
	5-1977	14.4	8.1	-6.6	4.8	5.6	-5.9
	6-1978	10.9	4.9	-11.2	1.4	1.8	-11.6
	7-1979	6.8	2.5	-13.7	-2.6	-.4	-14.8
2. ITC: with personal tax offset $k_e' = 2k_e$; $k_s' = k_e$							
	1-1973	1.6	1.7	1.7	-.5	2.7	1.8
	2-1974	5.8	4.0	4.5	.9	4.1	5.5
	3-1975	12.7	6.8	1.0	3.4	6.5	2.7
	4-1976	19.4	10.8	1.5	6.3	9.9	3.9
	5-1977	20.2	13.5	3.7	9.0	12.4	5.6
	6-1978	17.8	12.0	6.3	7.6	9.5	4.7
	7-1979	14.1	11.4	7.5	3.3	7.3	2.6
3. 10-5-3							
	1-1973	.7	3.4	-.3	.5	4.8	-.4
	2-1974	1.4	4.8	-2.7	.8	5.4	-3.2
	3-1975	3.5	6.5	-2.9	1.7	6.5	-3.2
	4-1976	5.4	9.6	-3.6	2.9	10.4	-4.0
	5-1977	5.7	10.0	-5.7	3.0	11.0	-6.4
	6-1978	3.3	5.9	-12.7	.2	5.6	-10.2
	7-1979	-.8	1.8	-17.1	-4.9	1.0	-18.4

Table 11.5 M-1 (continued) Full Model Simulations, Percent Changes from Baseline, Fourth Quarters of Each Year, Investment in Equipment, Structures and Housing

MPS, with M1 at Baseline Values

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Percent Changes from Baseline					
		Original Equations			C-E Equations		
Simulations	Year	Equipment	Structures	Housing	Equipment	Structures	Housing
4. $\Delta k'_e$ = +16.264%							
	1-1973	8.5	.6	-.3	1.4	.2	.1
	2-1974	15.0	2.6	-6.9	3.7	.3	-1.8
	3-1975	25.4	4.6	-9.0	8.5	1.0	-3.4
	4-1976	30.2	6.6	-10.8	10.9	.8	-6.0
	5-1977	26.0	7.3	-9.3	9.5	-1.4	-7.5
	6-1978	17.4	6.4	-7.0	4.8	-4.7	-14.3
	7-1979	-6.6	5.7	-5.3	.1	-6.4	-17.9
5. $\Delta u'$ = -9.815%							
	1-1973	1.1	2.7	-.1	.5	3.7	-.2
	2-1974	2.0	3.5	-2.6	.9	3.6	-2.8
	3-1975	3.6	4.1	-3.2	1.4	3.6	-3.1
	4-1976	3.6	5.2	-3.8	1.4	5.1	-3.8
	5-1977	2.5	4.1	-4.8	.4	4.2	-5.3
	6-1978	1.0	2.0	-7.3	-1.4	1.8	-8.3
	7-1979	-.2	.5	-8.8	-2.7	.5	-9.8
6. OTA Alternative							
	1-1973	1.3	2.2	-.2	.5	3.0	-.3
	2-1974	2.5	2.9	-2.3	.9	2.8	-2.3
	3-1975	4.8	3.5	-2.7	1.7	2.9	-2.3
	4-1976	5.6	4.7	-3.2	2.1	4.3	-2.8
	5-1977	4.8	4.1	-3.9	1.4	3.6	-4.1
	6-1978	3.1	2.1	-6.1	-.4	1.1	-7.0
	7-1979	1.4	.6	-7.5	-2.3	-.4	-8.8

Appendix D. Rates of Depreciation and Investment Credit and Tax Lives

Depreciation rates by age of assets under existing law were calculated for equipment and for structures from Treasury data. The Office of Tax Analysis had calculated depreciation charges by age of asset for each of a large number of asset classes. Aggregates of these were furnished us for utilities, for nonutility buildings and for a total of the National Income Accounts category of equipment (including vehicles) plus utilities. (This total is, the Office of Tax Analysis points out, almost all in fact subject to the investment tax credit for equipment.) Making use of weights corresponding to 1980 investment spending, also utilized by the Office of Tax Analysis, these depreciation charges by age of asset were re-allocated to form aggregates for equipment and for structures. The depreciation charges from equipment of each age were then divided by the total of depreciation charges from assets of all ages to secure depreciation rates by age, which hence of course totalled to unity. Similarly, depreciation charges from structures of each age were divided by the total depreciation charges of structures of all ages to secure depreciation rates by age for structures.

We secured from the Treasury estimates of the aggregates of similar depreciation flows by age of asset for the alternative tax reduction proposal which we have analyzed. These too were converted to depreciation rates for equipment and for structures to fit the NIA categories used in the models.

Calculation of depreciation rates for the 10-5-3 proposal proved quite complicated because of the phase-in provisions. The transitional rates of depreciation by age of asset, along with the ultimate rates, to be achieved immediately for vehicles but only after a five year phase-in for buildings and for equipment other than vehicles, are indicated below.

Depreciation Rates for 10-5-3

Ultimate Rates

Age of Asset (Years)	Class of Investment Buildings I (10 Years)	Equipment Other Than Vehicles II (5 Years)	Vehicles III (3 Years)
1	.10	.20	.33
2	.18	.32	.45
3	.16	.24	.22
4	.14	.16	
5	.12	.08	
6	.10		
7	.08		
8	.06		
9	.04		
10	.02		

Transitional (Phase-in) Rates for Buildings

(Class I Investment,
Expected Lives 20 Years or More)

Capital Recovery Year (Age of Asset Plus One)	Year of Phase-in				
	1	2	3	4	5
	(18 Years)	(16 Years)	(14 Years)	(12 Years)	(10 Years)
1	.06	.06	.08	.08	.10
2	.10	.12	.14	.15	.18
3	.10	.11	.12	.14	.16
4	.09	.10	.11	.13	.14
5	.09	.09	.10	.11	.12
6	.08	.09	.09	.10	.10
7	.07	.08	.08	.08	.08
8	.07	.07	.07	.07	.06
9	.06	.06	.06	.06	.04
10	.06	.05	.05	.04	.02
11	.05	.05	.04	.03	
12	.04	.04	.03	.01	
13	.04	.03	.02		
14	.03	.02	.01		
15	.02	.02			
16	.02	.01			
17	.01				
18	.01				

Transitional (Phase-in) Rates for Equipment (Class II Investment, Expected Lives 10 Years or More)*

Capital Recovery Year (Age of Asset Plus One)	Year of Phase-in				
	1 (9 Years)	2 (8 Years)	3 (7 Years)	4 (6 Years)	5 (5 Years)
1	.11	.13	.14	.17	.20
2	.20	.22	.25	.28	.32
3	.17	.19	.21	.22	.24
4	.15	.16	.16	.16	.16
5	.12	.12	.12	.11	.08
6	.10	.09	.08	.06	
7	.07	.06	.04		
8	.05	.03			
9	.03				

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*For equipment with expected lives less than 10 years, the transitional rates are based successively on capital cost recovery periods which equal the Asset Depreciation Range lower limit (ADRLL), ADRLL - 1, ADRLL - 2 and ADRLL - 3, but in no case less than 5 years.

The Office of Tax Analysis has calculated estimates of depreciation charges for separate categories of equipment including utility structures, which are in the five year category, utilities by themselves, and non-utility structures. These are based upon estimates of investment expenditures of \$28.3 billion for vehicles, \$163.3 billion for other NIA equipment, \$60.7 billion for utility structures, and \$48.4 billion for non-utility buildings, along with forecast value of investment expenditures for each of the years 1981 through 1989. The Treasury estimates were calculated on the basis of projections of the dollar amounts of additions in each of the 10-5-3 categories over the years 1980 through 1989.

It was necessary for us to calculate depreciation rates by age of asset and year of phase-in which could be applied to equipment and structures categories by vintage as they appear in the models on the National Income Accounts. To do so, we took the depreciation rates specified in the Conable-Jones bill and the phase-in rates set by the Office of Tax Analysis in conformity with the provisions of the bill and scaled them in a recursive process, year by year, so that when applied to the forecast expenditures for equipment and for structures they would generate the depreciation flows calculated by the Office of Tax Analysis. We may write this explicitly for equipment as follows:

$$D_{tEA} = m_{tIIA} * r * \left(\sum_{j=1}^{t} d_{jtA}^{II} E_{t+1-j} \right) + (1-r) \left(\sum_{j=1}^{t} d_{jA}^{v} E_{t+1-j} \right) .$$

Solve for m_{tIIA} and d_{jtEA} : $t=1,\ldots,10$

$j=1,\ldots,t$

$$d_{jtEA} = m_{tIIA} * \left(r * d_{jtA}^{II} + (1-r) d_{jA}^{v} \right);$$

note $d_{jA}^{v} = .33, .45, .22$ $j = 1,2,3$

$d_{jA}^{v} = 0$ $j > 3$

for all t ,

where

A is a subscript denoting 10-5-3

D_{tEA} = depreciation charges for equipment in the year t

m_{tIIA} = the scaling factor for class II investment (the 5-year category for equipment other than vehicles), necessary because for some class II investment ADRLL < 10

r is the proportion of NIA equipment expenditures assumed in class II investment (equals 163.3/191.6 = .8523)

d^{II}_{jtA} = the depreciation rate in the year t for category II assets in their j-th year with original tax lives of 10 years or more

E_{t+1-j} = equipment of age j-1 in the year t, hence the equipment expenditures made j-1 years before the year t

d^{v}_{jA} = the depreciation rate for vehicles in their j-th year or j+1 years old

d_{jtEA} = the depreciation rate in the year t applicable to the aggregate of NIA equipment in their j-th year or j+1 years old

The depreciation rates for structures under 10-5-3 were calculated as weighted averages of the class I and class II rates in the tables above, where the weights were 48.4 for the class I rates and 60.7 for the class II rates. These weights corresponded to the amounts of NIA structures investment estimated by the Office of Tax Analysis to be non-utility buildings, falling into class I, and the amounts of NIA structures investment estimated to be utilities, falling into class II.

The depreciation rates by year of life of assets, all reflecting the half-year convention for the first year, for equipment and for structures, are listed below for, respectively, existing law, a possible Treasury alternative, and 10-5-3.

Depreciation Rates

Year of Asset (Age Plus One)	Existing Law		Possible Treasury Alternative	
	Equipment	Structures	Equipment	Structures
1	.15403	.04728	.18704	.06091
2	.24891	.08752	.30221	.11157
3	.15870	.07512	.18661	.09344
4	.11234	.06551	.11612	.07930
5	.08102	.05786	.07287	.06803
6	.06694	.05246	.04617	.05886
7	.05860	.04843	.02956	.05128
8	.04988	.04421	.01914	.04494
9	.02644	.03761	.01255	.03960
10	.01521	.03253	.00834	.03500
11	.01042	.03116	.00563	.03109
12	.00654	.03002	.00384	.02772
13	.00372	.02902	.00267	.02479
14	.00238	.02850	.00188	.02226
15	.00169	.02818	.00133	.02004
16	.00159	.02812	.00097	.01808
17	.00093	.02547	.00072	.01635
18	.00067	.02219	.00053	.01484
19	0	.01860	.00040	.01350
20	0	.01860	.00030	.01231
21	0	.01762	.00025	.01124
22	0	.01664	.00021	.01029
23	0	.01664	.00017	.00943
24	0	.01419	.00014	.00867
25	0	.01305	.00012	.00798
26	0	.01192	.00010	.00734
27	0	.01192	.00009	.00679
26	0	.01192	.00005	.00627
29	0	.01117	0	.00580
30	0	.01016	0	.00537
31	0	.01016	0	.00497
32	0	.01016	0	.00462
33	0	.01016	0	.00430
34	0	.01016	0	.00399
35	0	.01016	0	.00372
36	0	.00558	0	.00350

10-5-3, Equipment

Capital Recovery Year	Year of Phase-in								
	1	2	3	4	5	6	7	8	9
1	.1708655	0	0	0	0	0	0	0	0
2	.1824445	.2721625	0	0	0	0	0	0	0
3	.1931029	.2933192	.2077900	0	0	0	0	0	0
4	.2110364	.3051345	.2138824	.1432008	0	0	0	0	0
5	.2259893	.3146126	.2186043	.1417977	.1063483	0	0	0	0
6	.2173278	.3362037	.2179390	.1348685	.1011514	.0842928	0	0	0
7	.2118750	.3274791	.2282542	.1305063	.0978797	.0734098	.0570965	0	0
8	.2074699	.3204310	.2229681	.1269822	.0873003	.0634911	.0476183	.0395819	0
9	.2073995	.3203184	.2228836	.1269259	.0634630	.0475972	.0317315	.0237986	.0237986
10 to ∞	.2196992	.3399979	.2376433	.1367657	.0683828	0	0	0	0

10-5-3, Structures

Capital Recovery Year	Year of Phase - in									
	1	2	3	4	5	6	7	8	9	10
1	.0878185	0	0	0	0	0	0	0	0	0
2	.0989459	.1556370	0	0	0	0	0	0	0	0
3	.1133822	.1756370	.1389459	0	0	0	0	0	0	0
4	.1300733	.2012007	.1545096	.1233822	0	0	0	0	0	0
5	.1556370	.2223281	.1700733	.1333822	.1066911	0	0	0	0	0
6	.1556370	.2578918	.1845096	.1378185	.1066911	.0911274	0	0	0	0
7	.1556370	.2578918	.2045096	.1466911	.1111274	.0900000	.0700000	0	0	0
8	.1556370	.2578918	.2045096	.1511274	.1100000	.0844363	.0688726	.0588726	0	0
9	.1556370	.2578918	.2045096	.1511274	.0977452	.0777452	.0577452	.0477452	.0433089	0
10	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0310541	.0266178	.0266178

10-5-3, Structures (page 2)

Year of Phase-in

Capital Recovery Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
11	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0310541	.0266178	.0221815	.0221815	0	0	0	0	0	0	0	0
12	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0266178	.0221815	.0221815	.0177452	0	0	0	0	0	0	0
13	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0177452	.0177452	.0177452	.0177452	0	0	0	0	0	0
14	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	.0133089	.0133089	.0133089	.0133089	0	0	0	0	0
15	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	0	.0044363	.0088726	.0088726	.0088726	0	0	0	0
16	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	0	0	0	.0044363	.0088726	.0088726	0	0	0
17	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	0	0	0	0	0	.0044363	.0044363	0	0
18	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	0	0	0	0	0	0	0	.0044363	0
19 to ∞	.1556370	.2578918	.2045096	.1511274	.0977452	.0443630	.0354904	.0266178	.0177452	.0088726	0	0	0	0	0	0	0	0	0

Estimates of depreciation tax lives under existing law, 10-5-3 and the OTA alternative were also obtained from Larry Dildine. These were made available for the National Income Account categories of equipment and structures and for utilities and for buildings other than utilities separately. The NIA structures category was constructed as an average of utilities and buildings other than utilities with weights of .6 and .4 respectively.

Multipliers for tax lives and the investment credit by Wharton sector, for equipment and structures combined, were also obtained from OTA calculations. These entailed, for tax lives, calculating weighted averages for equipment and for structures where the weights were the present values of equipment and building spending in each sector. Transitional year multipliers for utilities and communications were calculated on the assumption that after the initial drop lives decline by one year in each year of the transition. For the other sectors, transition year multipliers were calculated on the basis of the ultimate estimated multiplier for each sector, the total relative reductions in lives for each year of transition for all equipment and all buildings, and the proportions of equipment and buildings in each sector.

OTA Estimates of Depreciation Tax Lives and Rates of Investment Credit

	Tax Lives				Investment Credit	
	Equipment	Structures	Buildings Other than Utility	Utility	Equipment	Structures
	(NIA Categories)				(NIA Categories)	
Regime	Years				Percent	
Existing Law	7.3	22.8	32.6	18.5	8.8	4.8
10-5-3 Year 1	6.9	12.0	17.1	8.6	9.6	5.0
Year 2	6.275	10.6	15.1	7.6	9.6	5.0
Year 3	5.65	9.2	13.1	6.6	9.6	5.0
Year 4	5.025	7.8	11.1	5.6	9.6	5.0
Year 5	4.4	6.4	9.1	4.6	9.6	5.0
OTA Alternative	5.9	15.9			10.0	5.4

Multipliers for Tax Lives and Investment Credit, by Wharton Sector, Equipment and Structures Combined, from OTA Calculations

	10-5-3						OTA Alternative	
	Depreciation Tax Life Transition Year					Investment Credit	Depreciation Tax Life	Investment Credit
Sector	1	2	3	4	5			
Agriculture	.871	.784	.697	.610	.523	1.048	.808	1.141
Mining	.927	.817	.708	.598	.488	1.021	.766	1.036
Mfg.,Durables	.906	.797	.688	.580	.471	1.142	.796	1.192
Mfg.,Nondur.	.902	.789	.675	.562	.448	1.050	.757	1.089
Transportation	.920	.804	.689	.573	.458	1.137	.799	1.180
Utilities	.429	.380	.332	.284	.236	1.005	.713	1.014
Communications	.578	.513	.448	.383	.318	1.002	.701	1.005
Commercial	.882	.777	.671	.566	.461	1.208	.854	1.363

Appendix E Present Value Equivalent Calculations

1. Set present value of tax reductions from investment tax credit increase equal to present value of tax reductions from acceleration of depreciation.

$$\sum_{j=0}^{\infty} [u(D'-D)_{t+j} - (k'-k)\ I_{t+j}]\ [1+i_j]^{-j} = 0$$

Where $(D'-D)_{t+j} = \sum_{m=0}^{L*} (d'_{jm} - d_{jm})\ I_{t+j-m}$

u = rate of business income taxation

D = old tax depreciation charges; D' = new tax depreciation charges.

k = old investment tax credit; k' = new investment tax credit.
I = eligible investment, current dollars.
d_{jm} = old rate of depreciation on assets m quarters old in quarter t+j.

d'_{jm} = new rate of depreciation on assets m quarters old in quarter t+j.

$L*$ = maximum of L and L', old and new tax lives, respectively.

i_j = rate of interest to be used in discounting tax reduction j quarters in the future.

$$= \prod_{n=0}^{j} (i_n)^{1/j+1}$$

2. Set present value of tax reductions from reductions in corporate tax rates equal to present value of tax reductions from acceleration of depreciation.

$$\sum_{j=0}^{\infty} [u(D'-D)_{t+j} - (u-u')R_{t+j}] [1+i_j]^{-j} = 0 ,$$

where

u and u' = old and new (reduced) marginal corporate income tax rates, respectively

R = corporate profits before taxes (without adjustments)

and other symbols are as defined in 1.

3. Present values of tax reductions of 10-5-3 (A) and of the possible Treasury alternative (B)

$$PV_x = \sum_{j=1}^{400} [u_j(D_x'-D)_j + \Delta k_{Ex}E_j + \Delta k_{sx} S_j] [1+i_j]^{-j}$$

where $(D_x'-D)_j$ = the difference in tax depreciation in the j-th quarter

Δk_{Ex} = the difference in the effective rate of investment credit for equipment

Δk_{sx} = the difference in the effective rate of investment credit for structures

E_j = Equipment investment in the j-th quarter

S_j = Structures investment in the j-th quarter

x = A for 10-5-3

x = B for Treasury alternative

Appendix F. Simulation Input by Model

Specific inputs to each model for each simulation are described in this appendix in a general notation which is referenced in the glossary.

At the end of the section for each model a concordance relates the general notation and model-specific variable labels.

A set of parentheses following a variable, as XYZ ( ), indicates that the varible is determined by a stochastic equation. Variables without parentheses are exogenous.

BEA

1. $k'_e = 2 * k_e$

   $k'_s = k_e$

2. $k'_e = 2 * k_e$

   $k'_s = k_e$

   $PTR' = PTR(\ ) + k_e * .0737379 * (E\$ + S\$)$

3. $k'_e = k_e + .008$

   $k'_s = .002$

   L'_e = 10.397, 9.456, 8.514, 7.572, 6.630, 6.630, 6.630 (annual values, 1973-1979)

   L'_s = 12.00, 10.600, 9.200, 7.800, 6.400, 6.400, 6.400 (annual values, 1973-1979)

   $\underline{C}CCA' = \underline{C}CCA + s * (D_A - D)^{\#}$

   $\underline{P}CCA' = \underline{P}CCA + (1-s) * (D_A - D)^{\#}$

4. $k'_e = k_e + .16264$

5. $u' = u - .09815$

#These series are the same for all models and are listed in Appendix B.

6. $k_e' = k_e + .012$

$k_s' = .006$

$L_e' = 8.890$

$L_s' = 15.900$

$\underline{C}CCA' = \underline{C}CCA + s * (D_B - D)^{\#}$

$\underline{P}CCA' = \underline{P}CCA + (1-s) * (D_B - D)^{\#}$

k_e = CREDIT1/100

k_s = CREDIT2/100

E$ = IBFNRE$

S$ = IBFNRS$

PTR = TCF

L_e = LIFE1

L_s = LIFE2

$\underline{C}CCA$ = DECAJ (this variable was altered by changing DECIRS)

$\underline{P}CCA$ = CCANF

u = RTCF/100

CHASE

1. $k'_e = 2 * k_e$

   $k'_s = k_e$

2. $k'_e = 2 * k_e$

   $k'_s = k_e$

   $PTR' = PTR(\ \ ) + k_e * (E\$ + S\$)$

3. $k'_e = k_e + .008$

   $k'_s = .002$

   L'_e = 9.925, 9.026, 8.127, 7.228, 6.329, 6.329, 6.329 (annual values,1973-1979)

   L'_s = 12.105, 10.693, 9.281, 7.868, 6.456, 6.456, 6.456 (annual values,1973-1979)

   $CTR' = CTR(\ \ ) - u * s * (D_A - D)$

   $PTR' = PTR(\ \ ) - u * (1-s) * (D_A - D)$

4. $k'_e = k_e + .16264$

5. $u' = u - .09815$

6. $k'_e = k_e + .012$

   $k'_s = .006$

   $L'_e = 8.486$

   $L'_s = 16.039$

   $CTR' = CTR(\ \ ) - u * s * (D_B - D)$

   $PTR' = PTR(\ \ ) - u * (1 - s) * (D_B - D)$

CHASE

k_e = DITC

k_s = DITCS

E$ = IPEZ

S$ = IPSZ

PTR = TPF

L_e = TE

L_s = TS

CTR = TCF

u = TXRCF

DRI

1. $k'_e = 2 * k_e$

   $k'_s = k_e$

2. $k'_e = 2* k_e$

   $k'_s = k_e$

   $PTR' = PTR(\quad) + k_e * (E\$ + S\$)$

3. $k'_e = k_e + .008$

   $k'_s = .002$

   L'_e = 10.492, 9.541, 8.591, 7.641, 6.690, 6.690, 6.690 (annual values, 1973-1979)

   L'_s = 12.000, 10.600, 9.200, 7.800, 6.400, 6.400, 6.400 (annual values, 1973-1979)

   $\underline{C}CCA = \underline{C}CCA(\quad) + s * (D_A - D)$

   $PTR' = PTR(\quad) - u * (1 - s) * (D_A - D)$

4. $k'_e = k_e + .16264$

5. $u' = u - .09815$

6. $k'_e = k_e + .012$

   $k'_s = .006$

   $L'_e = 8.971$

   $L'_s = 15.900$

   $\underline{C}CCA' = \underline{C}CCA(\quad) + s * (D_B - D)$

   $PTR' = PTR(\quad) - u * (1-s) * (D_B - D)$

DRI

k_e = RITCBASE

k_s = RITCCNR

E$ = IPDENR

S$ = ICNR

PTR = TP

L_e = IPDENRLIFETIME

L_s = ICNRLIFETIME

$\underline{C}$CCA = CCACORPBOOK

u = RTCGFS

MICHIGAN

1. $k_e' = 2 * k_e$

2. $k_e' = 2 * k_e$

   $PTR' = PTR(\ \ ) + k_e * E\$$

3. $k_e' = k_e + .008$

   $TD_{ex}' = .280729$

   $TD_{ea}' = .484908$

   $TD_{eo}' = .280729$

   $\underline{C}CCA' = \underline{C}CCA + s * (D_A - D)$

   $PTR' = PTR(\ \ ) - u * (1-s) * (D_A - D)$

4. $k_e' = k_e + .16264$

5. $u' = u - .09815$

6. $k_e' = k_e + .012$

   $TD_{ex}' = .229314$

   $TD_{ea}' = .396097$

   $TD_{eo}' = .229314$

   $\underline{C}CCA' = \underline{C}CCA + s * (D_B - D)$

   $PTR' = PTR(\ \ ) - u * (1-s) * (D_B - D)$

k_e = TITCR

PTR = TP

E$ = IBFPD

TD_{ex} = TDEPRQO

TD_{ea} = TDEPRAG

TD_{eo} = TDEPRQO

$\underline{C}CCA$ = KCCA

u = TCFR

MPS

1. $k_e' = 2 * k_e$

   $k_s' = k_e$

2. $k_e' = 2 * k_e$

   $k_s' = k_e$

   $PTR' = PTR(\ \ ) + k_e * (E\$ + S\$)$

3. $k_e' = k_e + .008$

   $k_s' = .002$

   L_e' = 9.925, 9.026, 8.127, 7.228, 6.329, 6.329, 6.329 (annual values, (1973-1979)

   L_s' = 12.000, 10.600, 9.200, 7.800, 6.400, 6.400, 6.400 (annual values, 1973-1979)

   $\underline{C}CCA' = \underline{C}CCA + s * (D_A - D)$

   $PTR' = PTR(\ \ ) - u * (1-s) * (D_A - D)$

4. $k_e' = k_e + .16264$

5. $u' = u - .09815$

6. $k_e' = k_e + .012$

   $k_s' = .006$

   $L_e' = 8.486$

   $L_s' = 15.900$

   $\underline{C}CCA' = \underline{C}CCA + s * (D_B - D)$

   $PTR' = PTR(\ ) - u * (1-s) * (D_B - D)$

MPS

k_e = TCPD

k_s = TCPS

E$ = EPD$

S$ = EPS$

PTR = TPF$

L_e = SLPD

L_s = SLPD

CCCA = WADJC

u = UTC

WHARTON

1. $k_e' = 2 * k_e$

$k_s' = k_e$

$\hat{k}_j' = 2 * \hat{k}_j$

j = AG, MG, MFD, MFN, RGT, RGC48, RGU49, CM, BA

$(E/(E+S))' = (E/(E+S))$

2. $k_e' = 2 * k_e$

$k_s' = k_e$

$\hat{k}_j' = 2 * \hat{k}_j$

$(E/(E+S))' = (E/(E+S))$

$PTR' = PTR(\ \ ) + \sum_j \hat{k}_j' * I_j\$$

3. $k_e' = k_e + .008$

$k_s' = .002$

$\hat{k}_j' = \hat{k}_j + .006$

$L_{j'}' = L_{j'} * \gamma_{j',t}$

j' = AG, MG, MFD, MFN, RGT, RGC48, RGU49, CM

The $\gamma_{j',t}$'s are displayed in the last table in Appendix A.

Note $\gamma_{j',5} = \gamma_{j',6} = \gamma_{j',7}$.

$\underline{C}CCA' = \underline{C}CCA + s * (D_A - D)$

$PTR' = PTR(\ \ ) - u * (1-s) * (D_A - D)$

WHARTON

4. $k'_e = k_e + .16264$

$\hat{k}'_j = \hat{k}_j + .16264$

$CTR' = CTR(\ \ ) + .057 * I\$$

5. $u'_{j'} = u_{j'} - .098.5$

6. $k'_e = k_e + .012$

$k'_s = .006$

$\hat{k}'_j = \hat{k}_j + .006$

$L'_{j'} = L_{j'} * \gamma_{j'}$

The $\gamma_{j'}$'s are displayed in the last table in Appendix A.

$\underline{C}CCA' = \underline{C}CCA + s * (D_B - D)$

$PTR' = PTR(\ \ ) - u * (1-s) * (D_B - D)$

$CTR' = CTR(\ \ ) - .004 * I\$$

$k'_e = ITRN/100$

$k'_s = ITRS/100$

$\hat{k}_j = ITRA_j/100$

$E = IBFNE$

$S = IBFNS$

$PTR = TXCPF\$$

$I_j\$ = IA_j\$$

$L_{j'} = LNT_{j'}$

$\underline{C}CCA = CCAACP\$$

$CTR = TXCCF\$$

$u_j = TXRITEF_{j'}/100$