1 A GUIDE TO INTERPRETING THE DYNAMIC ELEMENTS OF REVENUE ESTIMATES

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I. INTRODUCTION

Over the three year period 1984 through 1986 the Department of the Treasury's Office of Tax Analysis (OTA) was responsible for analyzing several broad approaches to reforming the Internal Revenue Code and countless proposals to enact changes to specific provisions. One of the outputs of the process was a series of revenue estimates associated with each proposal or group of proposals. Summaries of the revenue estimates were published in both of the Department of the Treasury's tax reform volumes, Tax Reform for Fairness, Simplicity, and Economic Growth ("Treasury I")[1] and The President's Tax Proposals to the Congress for Fairness, Growth, and Simplicity ("Treasury II").[2] The Administration's summary estimates of the enacted tax reform bill were released in the Administration's Fiscal Year 1988 budget (a more detailed version is included as an appendix to this paper).[3] Similar estimates were released by the Joint Committee on Taxation.[4] This paper is intended as a guide for those seeking a better understanding of how to accurately portray and interpret these and similar revenue estimates. It outlines the major principles and assumptions that go into such estimates. It also responds to criticisms about the "static" nature of revenue estimates by presenting examples of several major tax reform provisions for which behavioral responses were a significant consideration in making the estimates.[5]

In Section II the overall approach to making revenue estimates is described. Major assumptions underlying revenue estimates are discussed in Section III. Issues in formatting and presenting a table of revenue estimates and in interpreting the resulting totals are discussed in Section IV.

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Section V includes examples of major behavioral responses included in revenue estimates. Section VI comments on the accuracy of the methodology and assumptions used by OTA and Section VII summarizes.

II. OVERALL DESCRIPTION OF REVENUE ESTIMATES

The Office of Tax Analysis (OTA) has primary responsibility for producing forecasts of unified budget receipts for inclusion in the Administrations' budget submissions and internal reviews and for estimating the effect on collections of enacted or proposed changes in tax laws. These estimates generally include projections of receipts under current law and/or proposed law for the next five years. To the fullest extent possible, the Department's estimates are based on the Administration's economic forecast. This forecast, which consists of an integrated set of GNP accounts and other subsidiary economic series, is circulated to all Executive Department agencies for use in preparing receipt and outlay estimates for each major budget exercise.[6] This serves to ensure consistency across all estimates and as a check on overall magnitudes; it also ensures that all of the pieces "add up" and that aggregate income is consistent with aggregate demand, including government purchases.

For each budget exercise, forecasts of receipts by source (e.g., individual income taxes, corporate income taxes, deposits by the Federal Reserve system, etc.) are generally based on models comprised of time series regression equations used to forecast aggregate tax liability, form of payment (such as withheld taxes, estimated taxes, and additional taxes paid as a result of audits), and the relationship between form of payment and the actual timing of collections.

As a result of the frequent modification of tax laws since 1975, the basic approach used in receipts estimating is to forecast "constant law" tax liabilities and add on separate estimates of the impact of changes since the base year. These separate (revenue) estimates are generally those derived at the time the tax bills were under consideration, modified as necessary for changes in economic conditions and additional information since the initial estimates were made.

Each revenue estimate consists of a series of summary statistics indicating the expected change in calendar year liability and/or fiscal year tax collections as a result of enacted or proposed changes in tax law.

Ideally each revenue estimate is based on:

- A forecast of economic activity directly relevant to the proposal (e.g., investment by businesses in plant and equipment to estimate the effect of changes in depreciation rules);
- A set of tax rules governing the recording of the transactions for purposes of measuring taxable income;
- The applicable marginal tax rates; and.

° A set of rules for making tax payments and a forecast of taxpayer response to these rules.

In general, revenue estimates associated with changes in tax law are generated using micro-simulation models of actual tax returns, recalibrated to reflect the aggregate economic forecast. The principle micro level models are the Individual Tax Model and the Corporate Tax Model. Examples of other models used by the Office of Tax Analysis include a depreciation model (see Gerardi, et al., this volume), banking tax model (see Neubig and Sullivan, this volume), and an insurance company tax model.

III. ASSUMPTIONS AND GUIDELINES UNDERLYING REVENUE ESTIMATES

A. Proposals Developed in Conjunction with the Administrations' Budget – Consistency With the Economic Forecast

The Administration's economic forecast is used, to the fullest extent possible, to forecast the relevant economic activity. This not only ensures consistency across estimates, it also serves as the way in which second-order effects are taken into account in estimates for budget purposes. That is, in those instances where tax policy initiatives included in the budget are held to have measurable effects on aggregate economic activity, those effects are built into the final forecast. The process by which this is accomplished is an iterative one in which Treasury first makes estimates of a proposal using a base forecast and then transmits the results to the Council of Economic Advisors who, in turn, use the results as inputs to rerun the overall forecast. Treasury then uses the next forecast as a revised input for the revenue estimate. During preparation of the President's annual budgets two or three interactions of this sort are all that are necessary to approximate a simultaneous macroeconomic model solution.

B. Assumptions When New Proposals Are Estimated

Estimates of proposals not developed as part of a comprehensive budget process are based on the most recent Administration forecast, in which the major elements of the forecast remain unchanged. The working assumption is that, over the five-year budget horizon, the aggregate production of goods and services–and associated incomes from current production–are determined by real variables interacting with the Administration's fiscal policy decisions. However, it is specifically recognized that although aggregate levels may be relatively fixed, the composition of the variables underlying the totals will change much more quickly. To the extent possible, revenue estimates take these compositional shifts into account. The following section lists some of the economic variables in the forecast that are held constant, those that may change depending in the proposal and those–not explicitly part of the forecast–that may also be changed.

Items Held Constant. Specific elements of the economic forecast that are generally held constant across all revenue estimates include:

- Total GNP;
- Interest rates;
- Total employee compensation arising in the production of goods and services (wages, salaries, and supplements);
- Total gross private domestic investment;
- Overall price index; and
- Total level of state and local taxes.

Items That May Change. Examples of elements of the economic forecast that are changed as appropriate include:

- The composition and level of nonwage personal income (proprietors' income, rental income, dividend income, and interest income);
- The mix of employee compensation;
- The mix of state and local tax revenues;
- The mix of gross private domestic investment between equipment and structures; and
- Distribution of income between corporate and noncorporate forms of business.

Items Not Part of the Forecast. Other economic variables that are not specifically part of the economic forecast that are taken into account in revenue estimates include (examples can be found in Part IV):

- Changes in holdings of financial assets;
- Changes in activity not includable in the GNP accounts (taxable activities that are not a result of the production of goods and services); and
- Accounting changes in the recording of transactions for tax purposes.

C. Other Assumptions

Several other assumptions underlying revenue estimates should be noted:

1. Compliance and Enforcement

In general, overall levels of compliance and enforcement are held constant from those implicit in base line receipts estimates. Proposed changes in tax law are assumed to be accompanied by the resources necessary to ensure their effectiveness. This is generally assumed to be accomplished by reallocation of existing resources. Of course, estimates are made for specific proposals, such as increasing the number of IRS personnel or additional reporting requirements, which are directly intended to increase audit coverage and/or taxpayer compliance over the historic norm. Estimates of these and similar proposals will include estimates of the direct effect of the proposal on tax collections and, to a much more limited extent, additional revenues associated with some taxpayer compliance response to the proposal.

A major exception to the general practice in this area was made in the case of the estimates of the tax reform bill: the large reduction in individual tax rates is projected to have a positive net effect on overall individual compliance levels despite the base broadening and tax-shelter provisions of the tax reform bill (which have the opposite effect since they raise tax payments by individuals utilizing such preferences). (See Item V.K. in the tax reform summary table in the Appendix).

2. Payroll Taxes

Although tax base broadening proposals may also increase the tax base for determining payroll (OASDHI) taxes, revenue estimate tables generally exclude changes in payroll tax revenues under the assumption that OASDHI rates will be set in the future to offset changes in the payroll tax base (in effect assuming that there is a target revenue level that the trustees have set). An exception is made for proposals which purposely alter the tax rate or base (the assumption is that such proposals are aimed at altering the target trust fund balances).

3. Taxpayer Options

In many instances the Tax Code allows taxpayers options in accounting for a transaction and for satisfying payment requirements. Revenue estimates will generally reflect past taxpayer practice even though that practice does not appear to minimize current tax payments. For example, collections data indicate that many individual taxpayers deliberately chose to be overwithheld or to overpay estimated taxes despite the existence of options and safe-harbor rules which would permit lower payments. This pattern is reflected in revenue estimates.

However, where there are no data to indicate otherwise, OTA generally assumes that taxpayers maximize their after-tax income, even though taxpayer-specific conditions may exist such that a taxpayer would choose an alternative option over the revenue horizon. For practical purposes tax-minimizing behavior is assumed to consist of accelerating deductions and delaying recognition of taxable income to the fullest extent possible. For example, a taxpayer may have an option to deduct or to capitalize a given expenditure. Absent other information, the revenue estimate is made assuming that the taxpayer will fully deduct the expenditure in the earliest period possible.

4. Pre-Enactment Effects

One problem that occurs in assessing the impact of a tax proposal is the issue of how to account for pre-enactment effects. Taxpayers, of course, react in anticipation of changes in tax laws and these reactions affect tax deposits. These effects remain no matter what ultimately happens to the law. For example, there is evidence that taxpayers accelerated their payments of estimated taxes and audit taxes from future years into FY 1986 to avoid possible underpayment penalties and to stop accrual of potentially nondeductible interest. Another example is the accelerated purchase of business equipment in 1985 in anticipation of the repeal of the investment tax credit widely speculated to occur on January 1, 1986 (which the new law eventually did). These effects are reflected in both recent GNP totals and in collections data, and they become part of budget receipts equations. As a result, these effects are generally incorporated in the base budget receipts forecast and are not included in a revenue estimate table.

5. Post-Enactment Effects

Revenue estimates assume continuation of tax law as enacted (or as proposed) and, in keeping with the economic forecast, do not include assumptions as to taxpayers' anticipations of the course of future tax policy. For example, termination of a tax credit for a tax-favored economic activity might be expected to generate accelerated (additional) expenditures in the year or two prior to expiration. This behavioral response would be taken into consideration in making an estimate of the net cost of the credit. Alternatively one might argue that taxpayers fully anticipate continuation of a popular credit and no such "bunching" prior to expiration would occur. This anticipation is not included as part of a revenue estimate.

Capital gains estimates are another example. If realizations are a function of, among other things, taxpayers' anticipations as to the course of future tax rates, then the levels of realizations will change over the course of the year as expectations change. Again, revenue estimates take the tax system implicit in the initial Administration forecast as the one that actually is in effect over the budget period. It is therefore, by implication and for all practical purposes, also the one that taxpayers would be expected to anticipate as each year progresses.

6. Other Tax-favored Activities

Revenue estimates will reflect any anticipated shifting of income and/or deductions towards alternative known tax-favored activity. For example, revenue estimates of eliminating one form of tax-deferred personal income payments will include offsets due to shifting to other remaining deferral devices. However, revenue estimates do not assume the creation and use of new, as yet unknown, "shelters". In the absence of clear alternatives, any shift in the tax base as a result of tax law changes is assumed to be from or to fully-taxable activity.

IV. ISSUES IN FORMATTING AND INTERPRETING A TABLE OF REVENUE ESTIMATES

Before discussing some of the specific areas where behavioral assumptions played a significant role in estimating the revenue effects of tax reform, it is useful to note problems associated with producing and interpreting a table that contains more than one revenue estimate, such as the one for the Tax Reform Act of 1986 in the Appendix. Users of revenue estimates will frequently misinterpret the meaning of revenues attributed to specific provisions and, as a result, assume that the estimate excludes components they believe should be included (or vice versa).

Stacking Order Issues. The most difficult issue facing the creator of a table of revenue estimates is the determination of the level of aggregation and the "stacking order" that is used to present results to the user. There are three main possibilities for presenting line-by-line estimates. First, each proposal could be estimated in isolation against current law with a separate line for displaying interactions among proposals (a "stacked first" table). Second, each proposal could be estimated assuming all other proposals are already in the law, again with a separate line for displaying interactions among proposals (a "stacked last" table). Finally, the proposals can be displayed using a sequential stacking order whereby each estimate assumes all prior proposals are already in the law (a "stack-up" table).

Assume an extreme example of a package with three separate proposals, each of which has the effect of closing the same "tax loophole" and generating $100 of additional tax payments. In a "stacked first" table each proposal might be shown to generate $100, and the table would include a line showing an interaction effect of -$200. In a "stacked last" table each proposal would show a zero revenue effect and the interaction line would show a positive $100 revenue effect. Finally, a "stack-up" table would attribute the $100 of revenue gain to the first proposal listed, zero to the other two proposals, and would have no entry in the interaction line.

As a result of the sequence through which Treasury I and Treasury II were developed, revenue estimates were made and presented in the summary tables following a specific "stack-up" format. The general pattern was to repeal credits first, estimate base-broadeners second, estimate the effect of rate reductions third, and estimate the effect of changes in the minimum tax last. The tax reform revenue estimate table prepared for use in the Administration's FY 1988 Budget has most individual provisions stacked last. These estimates are shown in the Appendix table. Thus, this table has an interaction term (Item I.A.7). Provisions affecting corporations continue to be stacked following a specific sequence (see introductory text in the Appendix).

It is obvious that line entries will vary from table to table depending on the stacking order used and that they will represent answers to different questions. No single table format covers all possible options. Some of the confusion surrounding revenue estimates can be minimized if users analyzing and interpreting specific entries on a table first determine what is–or is not–included in the line of interest.

Interpretational Issues. As mentioned earlier, a revenue estimate is a summary measure of the change in tax payments over a selected budget period. As such it is a cash flow measure whose primary use is to indicate the extent to which borrowing or other fiscal policies must change. Revenue estimate tables combine the effects of timing proposals (such as changes in the rules for making estimated payments) with the effects of permanent changes in the tax system (such as rate reductions). Analysts must therefore be careful in interpreting revenue estimates of deferral items. Those who combine the revenue effect of timing proposals with the revenue effects of permanent changes have a correct revenue estimate but run the risk of misunderstanding or misrepresenting what has actually changed as the result of a tax proposal. For instance, repeal of the bad debt reserve method for non-financial corporations and "large" banks (Items III.E and IV.A.1) had a large one-time revenue effect from ending deferral on existing reserves with a small permanent pickup.

Another problem with interpreting revenue estimates exists when taxpayers pay "implicit taxes" in the form of lower pre-tax rates of return. After-tax incomes do not necessarily change by the amount of the revenue estimate. For example, changes in the deductibility of interest by commercial banks may result in their substituting taxable for tax-exempt securities with individuals doing exactly the opposite. A revenue estimate table would then show an increase in tax payments by corporations and a decrease in individual payments. Due to higher yields on taxable securities, after-tax incomes in both sectors may remain essentially unchanged. (Item IX.B.)

V. SPECIFIC EXAMPLES OF BEHAVIORAL ASSUMPTIONS THAT ARE INCLUDED IN OTA REVENUE ESTIMATES

This section discusses examples of behavioral responses that are typically included in Treasury revenue estimates (with emphasis on tax reform estimates). In some instances explicit modeling of taxpayer responses is necessary because the economic forecast either does not or cannot effectively take them into account. Examples include proposals affecting capital gains realizations (which do not arise from current production and are therefore excluded from GNP accounts) and the effects of proposals not included in the original budget compilation.

In other instances estimating taxpayer responses is quite clearly a necessary step in more accurately portraying the ultimate effect of a tax proposal on tax receipts. Examples include shifting of portfolio holdings by individuals, additional or altered borrowing patterns, and effects on mergers and acquisitions in response to changes in tax law.

Examples of behavioral responses included in tax reform estimates (item references are to entries in Table 1.1 in the Appendix):

A. Payment responses

One of the more important (and frequently overlooked) components of a revenue estimate is the assumption as to taxpayers' "payment response" to proposed changes in tax law. Variations in payment patterns can significantly affect the timing of collections over a forecast period. The problem is that there are several options available to taxpayers in the tax code for satisfying requirements for making timely payments of estimated taxes and final tax liability. Revenue estimators must take these options into account. At the same time, changes in tax law–particularly major changes–will be accompanied by an adjustment period in which taxpayers move along a "learning curve" and gradually adapt to the new law, overstating and understating tax payments until the desired level is reached. Revenue estimates also include assumptions as to how quickly taxpayers will move along this curve.[7]

A particularly difficult estimating problem involves withholding of individual income taxes under tax reform. In the past most individual taxpayers employed a process of incrementally adjusting their withholding allowances to reach a satisfactory and stable level of withholding. As a result of tax reform taxpayers must review and revise their withholding allowances by October 1, 1987. If they do not, they will face additional mandatory withholding amounts that may create a heavy penalty for misstatement. It is not possible to anticipate the kinds of responses that a massive new review will entail, so tax reform estimates continue to reflect historical patterns (see introductory text in the Appendix).

The subsequent release and modification of new withholding forms has added a further element of uncertainty to revenue estimating. Taxpayer response to these new forms will not be known for quite some time. One result will be that it will be extremely difficult to interpret collections experience for several years.

B. The "Stagger" Effect (Item I.A.1)

Faced with a phased reduction in tax rates over the next two years (the "stagger" effect"), taxpayers will defer income and accelerate deductions to minimize taxes. Nonwage personal income subject to such shifting was reviewed and net tax liability on individual tax returns for calendar year 1986 was estimated to be lower by $12 billion as a result of the stagger. Of course, calendar year 1987 (and to a lesser degree CY 1988) returns will have higher incomes and taxes as a result, but these will be taxed at lower rates. The total budget period effect of the shifting could be as high as -$3 billion. Items considered likely to be shifted are essentially discretionary items, such as charitable contributions, partnership incomes, bonuses, prepaid expenses, etc.

It should be noted that there is a limit to the extent to which shifting can occur. In many instances, the two parties to a transaction will be on opposite sides of the issue. For example taxpayers trying to accelerate deductions into 1986 may be trying to make payments to taxpayers who are themselves trying to defer income until 1987.

C. Capital Gains (Item IV.A.).

Treasury estimates of the effect on revenues from changes in the (net) tax on long-term capital gains realized by individuals include substantial behavioral responses. Faced with future capital gains rate increases, taxpayers will, in the short run, accelerate realizations; in the long run they will increase their holding periods over what they would otherwise have been. One effect of extended holding periods will be that more gains will pass into estates (and thus escape tax altogether). These effects are taken into account in the revenue estimates.

The elasticities used (relating realizations to the tax price) range from about -1 in the short run to -0.5 in the long run. On net, approximately 80% of the "static" gain in revenue from the change in tax rates applicable to long term capital gains as a result of tax reform is not included over the budget period due to behavioral changes (see Treasury Capital Gains Report).

D. State and Local Taxes (Item I.D.1.)

Treasury estimates of the revenue effect of denying or limiting the deductibility of selected state or local taxes assume that these entities will change their laws to reduce the effect on their constituents. The estimates assume that between 15% and 20% of the "static" effect of disallowing sales taxes as an itemized deduction will be lost over the five year budget period as states and localities shift to other (deductible) taxes. (See Kenyon (1986) Deductibility of State and Local Taxes).

E. Passive Losses (Item XVI.A.)

In assessing the impact of the passive loss provisions of the tax reform bill, interactions with other tax reform provisions, such as the minimum tax and the investment interest limitation, were taken into account. The estimates reflect taxpayer behavior in the following areas: a) changes in holding periods for existing investments, b) induced selling of assets, c) changed investment plans for taxpayers in the future, d) increased investment by corporations in these activities, and e) shifting from debt to equity financing (see Section IV.B. of Burman, Neubig, and Wilson (1987), this volume).

F. Corporate Minimum Tax (Item XIII.B.)

In analyzing the possible effects of the new corporate minimum tax, substantial offsets to initial static model output were made to reflect responses such as additional mergers, sales of assets, additional leasing, and changes in the discretionary elements that comprise financial statement income. The offsets represented as much as $7 billion (or two-thirds of the static $10 billion total) in 1991.

G. Limits on Consumer Interest Deductions (Item XII.A.)

Estimates of the revenue effect of proposals limiting consumer interest deductions include substantial offsets to reflect shifting of consumer portfolios towards tax-preferred assets. The prime example is increased home mortgage levels in a regime where mortgage interest on first and second homes remains deductible. The TRA '86 estimates include offsets for taxpayers who dispose of assets to pay off debt.

H. Investment in Equipment and Structures (Item II.A.)

Changes in the cost recovery rules affect the cost of capital and thereby change the relative demand for equipment and structures. To generate a more realistic portrayal of the impact on receipts of such proposals, the mix of depreciable investments was reallocated (while holding total investment constant) as a result of the proposal. Available evidence in the economics literature is limited and mixed on the extent to which this shifting would take place. For Treasury II, approximately $35 billion of investment in equipment was transferred to structures between 1986 and 1990. This represented less than 1 percent of total gross private domestic investment over the same period. The shifting is much less pronounced as a result of final tax reform provisions. (See Fullerton, Henderson, and Mackie, this volume).

I. Individual Retirement Accounts (Item XIV.A.)

Estimates of the effect of changes in the deductibility of contributions to IRAs (and the deferral element) take into account the substitutability of these for other tax-preferred savings vehicles, such as 401K plans. Roughly 20% of the disallowed IRA deductions were assumed to flow into cash or deferred accounts.

J. Bank Carrying Costs for Tax-Exempt Bond Holdings (Item IX.B.)

The extent to which revenue estimates are affected by changes in the financial behavior of taxpayers is especially apparent in provisions affecting financial institutions. The disallowance of interest deductions by banks on funds borrowed to purchase tax-exempt securities affects the behavior of banks in their role as lenders and in their role as borrowers. Because many banks will find tax-exempt securities less attractive, their demand for tax-exempt securities will be reduced. As a result of adjustments in the portfolios of the nonbank sector, more tax-exempt securities will be held directly by the nonbank sector. This reduces the taxable income of the nonbank sector thereby offsetting much of the additional tax revenue from banks created by the provision. (See Neubig and Sullivan (1987), this volume).

K. Information Reporting (Item V.C.)

The anticipated revenue gain from the information reporting requirements in tax reform includes revenue that is the direct result of document matching. In addition, the revenue estimates include amounts resulting from an expected increase in voluntary compliance (since taxpayers are aware of the new document matching possibilities and are expected to accelerate payment of tax due rather than waiting to be audited).

L. Repeal of "General Utilities" Rule (Item VI.F.)

The total revenue effect of this provision over the fiscal year 1987 - 1991 period is less than -$300 million. This relatively small amount masks large offsetting changes in corporate and individual income tax payments over the period. Some of this offset is due to the expected behavioral responses to the changed "tax prices" of completing certain distributions that were built into the estimates. These responses included estimating the number of "base-case" transactions that would take place anyway, the number of transactions that would take place with a carryover basis, and the number of transactions that would no longer occur.

M. ESOP/Estate Tax (Item XIV.C.)

The large negatives shown for this item in the Appendix table reflect the anticipated actions by taxpayers and estate executors to eliminate much of the estate tax that would otherwise be due. As a result of the newly enacted ESOP provisions, taxpayers are expected to build portfolios such that their estate can then sell eligible stock to ESOPs to obtain the estate tax deductions.

The list could be extended with other examples. However, it is not intended as a catalogue of behavioral assumptions included in estimates, but, instead, as indicative of the range and type of adjustments that are routinely considered in calculating revenue estimates.

It should be noted that the extent to which behavioral responses are included in revenue estimates depends in part on the scope of the proposal. Company-specific proposals (which include most transition rule proposals) are likely to reflect only changes in the tax accounts of the affected taxpayers. Such estimates are occasionally based on detailed information supplied by the taxpayer with no indication of alternative behavior that might be undertaken. It is also unlikely that the individual taxpayers response will have any measurable effect on economic variables (one test of when behavior should be taken into account). Estimates of proposals that affect larger aggregations of taxpayers (e.g., steel industry, farm sector) are more likely to include behavioral responses for two reasons: a) there are measurable effects and b) published studies and analysis of the effects may be available to the estimator. Finally, estimates of proposals affecting all taxable units in the economy (e.g., taxpayers, nonfilers) or overall legal forms of business (e.g., corporations, partnerships) will reflect the full range of effects that the estimator has been able to incorporate in the models.

Of course, there are several difficulties with estimating behavioral responses, the most obvious of which is the lack of data and/or the necessary empirical work to determine relevant elasticities. In other instances there may be both empirical research and theory to indicate the direction and magnitude of response to a proposal, but information on the pattern and timing of the response over the budget period is lacking. In such cases, where behavioral responses are a major element in forecasting the revenue effect of a proposal, the estimator combines any associated information with past experience and best judgment to produce an estimate.

The fact that certain aggregate economic variables are modified and others are held constant in revenue estimating is not intended to suggest that no further changes in those that are held constant are possible. It is, instead, an approach to revenue estimating which is designed to hold to a minimum the use of uncertain behavioral responses attributed to tax policy initiatives. Much of the criticism of this practice is by analysts who assume large behavioral effects that work in their preferred direction and who minimize tax effects that work in the other direction. Treasury's intent is to err, if at all, on the side of not underestimating potential deficit effects.

Finally, it should be noted with regard to all of the recent tax reform proposals, that they were not designed primarily as fiscal stimulus measures but were instead designed as efficiency and fairness measures. The changes in tax law were intended as improvements in incentives for long-term growth. Further near-term improvements in such factors as labor supply, savings and investment levels, addition of taxpayers to the tax roles, and efficiency in the use of resources were all hoped-for effects of tax reform but were not depended upon for ensuring revenue neutrality.

VI. COMMENTS ON THE ACCURACY OF THE METHODOLOGY

It is difficult, if not impossible, to directly assess the reliability of the assumptions and methods underlying revenue estimates. One needs only list possible major sources of error to sense the difficulty the analyst has in retroactively comparing actual results with projected results. These errors may occur in:

- The economic forecast.
- Determining the tax base given the economic base.
- Translating a proposal into changes in all relevant tax laws.
- Translating the changes in tax law into initial effects on the taxpayer's tax return before behavioral assumptions.
- Assumptions as to behavioral responses.
- Interactions with other tax provisions.
- Tax payment responses.
- Differences in the implementation of tax laws from initial assumptions.

A (limited) source of confidence in the methodology and assumptions used in making revenue estimates is the ability of OTA to accurately forecast total near-term tax collections. As described in Section II, receipt estimates combine both aggregate time series equations and data with revenue estimates of changes in tax law generated using the methods and principles discussed above. The resulting totals have been found to be accurate and dependable inputs for use in anticipating Federal borrowing needs over the near-term. A review of the Fiscal Year 1977 through 1987 Budgets shows that the mean error in total receipts estimates for the first fiscal year in each submission was 0.22 percent. The mean error for the second year was only 2.6 percent, despite the fact that the receipt total potentially included all sources of error mentioned above.[8]

Of course, most tax code changes have delayed effects on budget receipts, with their full impact on receipts occurring only after two or three years, so that accuracy over the short term is only indicative.

In a 1981 study of OTA's methods, the Congressional Budget Office found that, after abstracting from differences between actual economic conditions and the Administration forecast and from differences between proposed and actual tax law changes, the OTA was remarkably accurate in forecasting total budget receipts. The overall error for the 1963 - 1978 period was about 1%.[9]

As noted in Section II, OTA's general approach to forecasting income tax receipts for inclusion in the Administration's budget is to add estimates of changes in tax law to a "constant law" tax liability. This approach forces frequent reconsideration of many revenue estimates associated with tax law changes enacted after the base year, a reconsideration which includes review of all inputs to the estimates. New information, in particular the results of tax return tabulations, is thus incorporated into the estimating methodology. Similarly, the results of studies and analysis by economists in other organizations are reviewed and, when appropriate included in the revenue estimating process. This constant internal and external review serves to increase the overall accuracy of the estimates.

VII. SUMMARY

This paper has outlined some of the major elements and assumptions that go into revenue estimates. These include the role of the Administration's underlying economic forecast, the models used to determine initial revenue effects, assumed behavioral responses, items not included in estimates, and the format used to summarize the estimates, all of which are possible reasons for differences between estimates produced by different economists. The fundamental message is that there is a set of logical steps in the economic analyses underlying all revenue estimates. One of the steps is the incorporation of significant behavioral responses where economic theory and empirical evidence provide sufficient guidance to make reasonable estimates.

APPENDIX

The estimates in Table 1.1 are drawn from revenue estimates supplied to the Congressional tax writing committees by OTA on January 9, 1987. They are based on the Fiscal Year (FY) 1988 budget forecast. In general, the effects of each individual provision are estimated assuming enactment of all other provisions. Corporate provisions were estimated in the following sequence: 1) rate changes; 2) changes in credits; 3) changes in capital recovery provisions; 4) base broadeners; and 5) minimum tax provisions.

The individual estimates assume that the relationship between collections and tax liability is unchanged from current law. Fiscal year revenue effects may be significantly altered depending on the taxpayers' response to changes in withholding tables and rules governing payment of estimated taxes.

Table 1.1 **REVENUE ESTIMATES – TAX REFORM ACT OF 1986**

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
I. INDIVIDUAL INCOME TAX PROVISIONS						
A. Basic Rate Structure						
1. Tax rates of 15% and 28% (does not include capital gains)	-26011	-38149	-50926	-57676	-63745	-236507
2. Increase in standard deduction	-	-4433	-6449	-7004	-7566	-25452
3. Increase personal exemption to $2000 with phase-out based on taxable income	-16406	-28592	-28188	-29259	-30287	-132732
–Revise treatment of the elderly & blind	485	781	1001	1268	1581	5116
–Disallow personal exemption by new dependent filers	65	196	194	194	194	843
4. Round down inflation adjustment to $50 multiple	0	0	204	932	1471	2607
5. Repeal two-earner deduction	1500	6018	6194	6670	7138	27520
6. Repeal income averaging	450	1731	1837	1979	2115	8112
7. Interaction among individual tax provisions	-314	421	858	934	397	2296

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
	($ Millions)					
B. Revise earned income credit, Individual[a]						
Receipts	-	-356	-852	-1054	-1279	-3541
Outlays	-52	-1535	-2649	-2719	-2764	-9719
C. Exclusions from Income						
1. Repeal partial exclusion of unemployment compensation benefits	320	1045	984	945	920	4214
2. Scholarships and fellowships	57	209	273	288	296	1123
3. Limit present law exclusion for certain prizes and awards	*	2	2	2	2	8
D. Deductions for Personal Expenditures						
1. Itemized deduction for State & local sales taxes						
Individual	794	5185	4580	4555	4681	19795
Capitalization Rule for state and local taxes						
Individual	47	119	96	78	59	399
Corporate	488	738	603	521	351	2700
2. Medical expense deduction– Increase floor under such deductions to 7.5 percent of AGI	223	1504	1590	1599	1607	6523
3. Adoption expenses repealed[b]	1	2	2	2	2	9
4. Deductibility of mortgage interest and taxes allocable to certain housing allowances	*	*	*	*	*	*
E. Expenses for Business or Investment						
1. Meals, travel, and entertainment expenses						
Restrict deduction of business meals expenses and business entertainment expenses to 80%						
Individual	367	625	700	784	857	3333
Corporate	888	1467	1615	1833	2022	7825
FICA and SECA	63	112	133	149	180	637
Limit deductions for luxury water travel						
Individual	1	3	3	3	3	13
Corporate	*	*	*	*	*	*
No deductions for educational travel						
Individual	4	13	14	14	14	59
Corporate	*	*	*	*	*	*
No deductions for investment seminars						
Individual	1	3	3	3	3	13
Corporate	*	*	*	*	*	*
Charitable Travel						
Individual	*	*	*	*	*	*
2. Employee business expenses, investment expenses and other miscellaneous itemized deductions subject to 2% floor	716	4781	4903	5354	5801	21555
3. Limit home office expense & hobby loss deductions						
Home office expenses, Individual	*	*	*	*	*	*
Hobby losses, Individual	*	*	*	*	*	*
F. Political Contributions Tax Credit Repealed	-	275	293	288	295	1151
SUBTOTAL						
Individual	-37700	-48617	-62684	-69101	-75441	-293543
Corporate	1376	2205	2218	2354	2373	10525
FICA and SECA	63	112	133	149	180	637
Outlays	-52	-1535	-2649	-2719	-2764	-9719
SUBTOTAL, INDIVIDUAL INCOME TAX	-36313	-47836	-62982	-69317	-75652	-292100
II. CAPITAL COST PROVISIONS						
A. Cost Recovery: Depreciation; ITC; Finance Leases						
1. Depreciation and expensing						
Modify Accelerated Cost Recovery System						
Individual	-617	-1220	-594	421	1943	-67
Corporate	-1727	-2179	-786	1951	6068	3327

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
			($ Millions)			
2. Regular Investment Tax Credit						
Repeal investment tax credit effective Jan. 1, 1986						
Individual	5249	5158	5656	6098	6801	28961
Corporate	19379	17867	21865	25304	28823	113237
Reduce transition ITCs & carryforwards by 35%						
Individual	60	199	270	191	95	815
Corporate	252	1447	1624	1081	583	4987
3. Repeal finance lease rules effective January 1, 1987						
Corporate	-	121	325	436	431	1313
Limit on Business Credits (75%)						
Individual	*	*	*	*	*	*
Corporate	984	385	251	148	85	1853
15 year carryback of unused ITCs for steel						
Corporate	0	-565	23	51	82	-409
15 year carryback of unused ITCs for farmers						
Individual	0	-234	0	18	30	-186
SUBTOTAL						
Individual	4692	3903	5332	6728	8869	29523
Corporate	18888	17076	23302	28971	36072	124308
SUBTOTAL, ACRS AND ITC	23580	20978	28634	35699	44941	153831
III. ACCOUNTING ISSUES						
A. Deny the Use of the Cash Method of Accounting by Financial Institutions (Including Finance Companies)						
Corporate	395	712	762	787	484	3140
B. Simplified Dollar Value LIFO Method for Certain Small Businesses						
Individual	0	-4	-9	-9	-7	-29
Corporate	-11	-124	-212	-191	-136	-674
C. Limit Use of the Installment Method						
Deny for sales under revolving credit plan, portion of sales by dealers in personal property, sales of publicly traded property						
Individual	19	50	36	36	37	178
Corporate	1271	1663	1345	1358	1395	7032
D. Uniform Capitalization Rules						
Require capitalizing both direct and indirect production costs for manufacturing, construction, and development						
Individual	280	643	679	680	653	2935
Corporate	5947	8246	7820	6992	6608	35613
E. Disallow Reserve Method for Bad Debts Other than Selected Financial Institutions						
Individual	32	95	91	92	92	402
Corporate	992	1536	1475	1489	1491	6983
F. Repeal Election to Deduct Qualified Discount Coupons						
Corporate	0	47	37	38	39	161
G. Solvent Taxpayers Required to Recognize Income from Cancellation of Indebtedness						
Individual	2	4	3	3	2	14
Corporate	57	79	62	52	43	293
H. Conform Taxable Years of Partnerships, S Corporations, and Personal Service Corporations to Owners						
Individual	0	536	370	377	278	1561
I. Public Utility Billing Rule						
Corporate	191	356	384	387	200	1518

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
			($ Millions)			
J. Pre-1984 Rules for Depreciation Recapture – Installment Sales of Farm Irrigation Equipment						
Individual	*	*	*	*	*	*
Corporate	*	*	*	*	*	*
K. Contributions in Aid of Construction						
Corporate	66	126	152	177	201	722
SUBTOTAL						
Individual	333	1324	1170	1179	1055	5061
Corporate	8908	12641	1825	11089	10325	54788
SUBTOTAL, ACCOUNTING ISSUES	9241	13965	12995	12268	11380	59849
IV. CAPITAL GAINS						
A. Repeal Long-term Capital Gains Exclusion for Individuals	12518	-1495	-59	3364	7442	21770
B. Corporate Capital Gains Alternate Capital Gain Rate of 34%	526	904	1034	1211	1250	4925
C. Liberalize Incentive Stock Options						
Individual	-**	-**	-**	-**	-**	-**
D. Straddles						
Individual	-	12	*	*	*	12
SUBTOTAL						
Individual	12518	-1483	-59	3364	7442	21782
Corporate	526	904	1034	1211	1250	4925
SUBTOTAL, CAPITAL GAINS	13044	-579	975	4575	8692	26707
V. COMPLIANCE AND ADMINISTRATION						
A. Increase Penalties						
Individual	49	279	376	384	393	1481
Corporate	28	76	110	112	115	441
Excise	1	8	9	10	10	38
Estate and Gift	0	5	7	7	7	26
B. IRS Interest Provisions[a]						
Individual	34	98	177	258	351	918
Corporate	65	177	303	418	554	1517
Outlays	-35	-140	-144	-111	-114	-544
C. Information Reporting						
Individual	250	763	1081	1103	1157	4354
Corporate	0	70	5	5	5	85
D. Tax Shelters						
Individual	*	*	*	*	*	*
E. Estimated Payments						
1. By Individuals (90%)						
Individual	1580	-3	48	113	86	1824
2. Tax-exempt Orgs. (Unrelated Business Income)						
Corporate	35	2	2	2	2	43
3. Private Foundations (Net Investment Income)						
Excise	125	17	5	7	10	164
F. Tax Litigation and Tax Court						
User Fees	*	*	*	*	*	*

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
			($ Millions)			
G. Tax Administration Provisions						
Individual	-	-	-	-	-	-
Corporate	-	-	-	-	-	-
H. Waiver of Criminal Penalties if Voluntary Disclosure						
Individual	*	*	*	*	*	*
Corporate	*	*	*	*	*	*
I. Modify Withholding Schedules						
Individual	239	-487	-22	-20	-19	11
J. Increase in Voluntary Compliance						
Individual	58	490	693	652	668	2561
Corporate	-23	-54	-65	-66	-68	-276
SUBTOTAL						
Individual	2210	1140	2353	2490	2636	10829
Corporate	105	271	355	471	608	1810
User Fees	0	0	0	0	0	0
Excise	126	25	14	17	20	202
Estate and Gift	0	5	7	7	7	26
Outlays	-35	-140	-144	-111	-114	-544
SUBTOTAL, COMPLIANCE	2406	1301	2585	2874	3157	12323

VI. CORPORATE AND GENERAL BUSINESS TAXATION

	1987	1988	1989	1990	1991	Total 1987-91
A. Corporate Tax Rates[c]						
Revise corporate rates and graduated structure (top rate to 34%)						
Corporate	-6629	-19092	-27562	-31760	-35189	-120232
B. Dividends Received Deduction						
Reduce corporate dividend received deduction to 80%						
Corporate	126	209	222	241	257	1055
C. Repeal $100 Dividend Exclusion for Individuals						
Individual	87	576	568	586	604	2421
D. Redemption of Stock Payments						
Repeal deductibility of "greenmail" payments						
Corporate	**	**	**	**	**	**
E. Special Limitations on Net Operating Loss Carryovers						
Corporate	9	29	39	38	29	144
F. Repeal "General Utilities" Rule						
Individual	-342	-1404	-1474	-1548	-1625	-6393
Corporate	228	1057	1336	1622	1887	6130
G. Allocation of Purchase Price in Certain Sales of Assets						
Individual	-6	-7	-7	-7	-7	-34
Corporate	71	68	85	101	114	439
H. Extraordinary Dividends Received						
Corporate	30	52	54	57	60	253
I. Repeal Various Rapid Amortization Elections						
Repeal 5 year amortization for trademark expenses						
Individual	0	3	8	15	23	49
Corporate	2	6	15	26	38	87
Amortization of railroad tunnels and bores						
Corporate	*	*	*	*	*	*
Five year write off of bus operating rights						
Corporate	-20	-	-	-	-	-20

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
J. Other Capital Related Costs						
Limit Marine CCF						
Corporate	3	4	5	6	6	24
K. Tax Regulated Investment Companies on Calendar Year Basis and Eliminate "Spillover" Dividends						
Individual	406	471	26	27	27	957
Excise	-	6	6	6	7	25
L. Mortgage-Backed Securities--REMICs						
Corporate	-2	-6	-13	-23	-32	-76
SUBTOTAL						
Individual	145	-361	-879	-927	-978	-3000
Corporate	-6182	-17673	-25819	-29692	-32830	-112196
Excise	0	6	6	6	7	25
SUBTOTAL, CORPORATE AND GENERAL BUSINESS TAXATION	-6037	-18028	-26692	-30613	-33801	-115171

VII. ENERGY, AGRICULTURE, TIMBER, AND NATURAL RESOURCES

	1987	1988	1989	1990	1991	Total 1987-91
A. Agriculture						
1. Limit Soil and Water Conservation Expenditures and Repeal Expenditures for Clearing Land						
Individual	29	25	25	25	25	129
Corporate	15	11	11	11	11	59
2. Restrict Prepayments of Farming Expenses Over 50% of Annual Expenses						
Individual	50	5	2	2	2	61
3. Extend Scope of Expensing of Costs of Replanting						
Individual	-1	-6	-10	-13	-13	-43
Corporate	-*	-*	-*	-*	-*	-*
4. Discharge of Indebtedness Treatment of Farmers						
Individual	-9	-10	-8	-7	-5	-39
5. Capitalization of Preproductive Expenditures						
Individual	56	160	147	141	146	650
Corporate	41	61	55	53	53	263
B. Energy and Natural Resources						
1. Domestic Production						
Percentage Depletion Offset for Coal & Iron Ore Royalties Due to Deletion of Capital Gains Rates						
Individual	-7	-17	-17	-18	-19	-78
Corporate	-1	-2	-2	-2	-3	-10
Oil and Gas (except foreign IDCs)						
Individual	19	52	59	68	77	275
Corporate	56	104	125	136	118	539
Hard Minerals E&D and Percentage Depletion						
Individual	0	0	0	0	0	0
Corporate	20	30	28	27	26	131
2. Foreign Exploration & Development Costs and IDCs						
Corporate	4	6	5	5	1	21
3. Extend Energy Related Credits and Incentives at Reduced Rates						
Extend solar, geothermal, biomass, wind, and ocean credits						
Individual	-*	-*	-*	-*	-*	-*
Corporate	-380	-87	11	22	15	-419
4. Allow Residential Energy Credits to Expire						
Individual	-	-	-	-	-	-
5. Reduce Gas Exemption for Methanol to $.06						
Individual	-*	-*	-*	-*	-*	-*
Corporate	-*	-*	-*	-*	-*	-*
Excise	-*	-*	-*	-*	-*	-*

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
6. Deny Duty-Free Treatment to Ethyl Alcohol from CBI Unless CBI is Source						
Individual	-*	-*	-*	-*	-*	-*
Corporate	-*	-*	-*	-*	-*	-*
Excise	*	*	*	*	*	*
Customs	*	*	*	*	*	*
7. Gift & Estate Tax Deductions for Conservation Easements						
Individual	-*	-*	-*	-*	-*	-*
Estate and Gift	-*	-*	-*	-*	-*	-*
SUBTOTAL						
Individual	137	209	198	198	213	955
Corporate	-245	123	233	252	221	584
Excise	0	0	0	0	0	0
Estate and Gift	0	0	0	0	0	0
Customs	0	0	0	0	0	0
SUBTOTAL, ENERGY, AGRICULTURE, TIMBER, & NATURAL RESOURCES	-108	332	431	450	434	1539
VIII. EMPLOYMENT AND EXCISE TAXES						
A. Employment Taxes						
Ministerial Reelection into FICA						
FICA	*	*	*	*	*	*
FUTA for Indian Tribes	-*	-*	-	-	-	-
B. Excise Taxes						
Medivac Helicopters						
Excise	-*	-*	-*	-*	-*	-*
SUBTOTAL						
Individual	0	0	0	0	0	0
Excise	0	0	0	0	0	0
FICA	0	0	0	0	0	0
FUTA	0	0	0	0	0	0
SUBTOTAL, EMPLOYMENT AND EXCISE TAXES	*	*	*	*	*	*
IX. FINANCIAL INSTITUTIONS						
A. Reserve for Bad Debts						
1. Commercial banks, Corporate	195	560	878	1163	588	3384
2. Thrift institutions, Corporate	60	90	100	110	130	490
B. Interest On Debt to Purchase Or Carry Tax-exempt Obligations						
Individual	-56	-299	-676	-1059	-1448	-3538
Corporate	85	384	776	1156	1535	3936
C. Allow NOL's of Thrifts to Eight Year Carryforward						
Corporate	0	-60	-100	-100	-80	-340
D. Reorganizations of Financially Troubled Thrifts						
Corporate	0	0	50	100	160	310
E. Losses on Deposits in Insolvent Financial Institutions						
Individual	-3	-1	-1	-1	-1	-7
SUBTOTAL						
Individual	-59	-300	-677	-1060	-1449	-3545
Corporate	340	974	1704	2429	2333	7780
SUBTOTAL, FINANCIAL INSTITUTIONS	281	674	1027	1369	884	4235

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
	($ Millions)					
X. FOREIGN TAX PROVISIONS						
A. Foreign Tax Credits						
Separate Foreign Tax Limitations						
Corporate	279	445	430	457	488	2099
Credit for high withholding taxes on interest						
Corporate	111	174	158	258	409	1110
Treatment of losses						
Corporate	9	21	24	25	27	106
Deemed-paid credit						
Corporate	6	20	61	88	99	274
B. Source Rules						
Sales of inventory and property						
Corporate	*	*	*	*	*	*
Transportation income						
Corporate	8	16	19	25	31	99
Dividends and interest of 80/20's						
Corporate	*	*	*	*	*	*
Allocation of interest expenses						
Corporate	143	381	602	820	1002	2948
Allocation of expenses other than interest and R&D						
Corporate	58	92	97	102	107	456
C. Foreign Corporations of U.S. Taxpayers						
Expand subpart F income						
Corporate	110	184	179	196	216	885
De minimis tax have income rule						
Corporate	40	67	68	77	81	333
Use of deficits in E&P						
Corporate	14	22	22	26	27	111
D. Special Tax Provisions						
Possesions tax credit						
Corporate	42	69	68	75	82	336
Transfers of intangibles						
Corporate	24	60	83	110	140	417
Foreign investment companies						
Corporate	10	17	16	19	21	83
E. Foreign Taxpayers						
Branch level tax						
Corporate	*	*	*	*	*	*
Insurance: capative insurance companies						
Corporate	25	64	88	115	146	438
Income of foreign governments						
Corporate	23	44	49	55	60	231
Dual residence companies						
Corporate	73	126	132	140	151	622
F. Foreign Currency Exchange Gains and Losses						
Corporate	*	*	*	*	*	*
G. Reduce Section 911 Exclusion to $70.000						
Individual	23	44	49	55	60	231
SUBTOTAL						
Individual	23	44	49	55	60	231
Corporate	975	1802	2096	2588	3087	10548
SUBTOTAL, FOREIGN TAX PROVISIONS	998	1846	2145	2643	3147	10779
XI. INSURANCE PRODUCTS AND COMPANIES						
A. Life Insurance Products and Companies						
Repeal $1.000.00 exclusion of interest income on death benefits						
Individual	*	*	*	*	*	*

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
Allow NOLs for one insolvent life insurance company to offset distributions from policyholder surplus accounts						
Corporate	-*	-*	-*	-*	-*	-*
Tax Blue Cross-Blue Shield and certain other tax-exempt insurance companies under special tax rules						
Corporate	88	162	193	187	176	806
Tax structured settlement company investment income (except for settlements arising out of physical injury or sickness)						
Corporate	*	*	*	*	*	*
Repeal 20% life insurance company deduction						
Corporate	393	699	751	807	864	3514
Exempt certain burial insurance contracts from the statutory definition of life insurance						
Individual	-*	-*	-*	-*	-*	-**
Disallow deductions for interest payments on certain corporate policyholder loans						
Corporate	*	*	*	*	*	*
Disallow deductions for certain insured losses						
Corporate	*	*	*	*	*	*
B. Property and Casualty Insurance Companies						
Include 20% of annual increase in unearned premium reserves as taxable income (10% for bond insurance)						
Corporate	230	318	255	234	245	1282
Include 20% of existing unearned premuim reserve as taxable income (10% for bond insurance income) over next 6 years						
Corporate	254	432	469	512	495	2162
Reduce deductions for losses incurred by a specified proportion of tax-exempt interest & dividends received						
Corporate	19	74	156	258	358	865
Pretax discounting of loss reserves						
Corporate	374	667	757	714	566	3078
Repeal protection against loss account						
Corporate	58	76	68	44	24	270
Adopt single, small company provision						
Corporate	-14	-33	-27	-25	-24	-123
SUBTOTAL						
Individual	0	0	0	0	0	0
Corporate	1402	2395	2622	2731	2704	11854
SUBTOTAL, INSURANCE PRODUCTS & COMPANIES	1402	2395	2622	2731	2704	11854
XII. INTEREST EXPENSE						
A. Nonbusiness Interest Limits						
Disallow consumer interest						
Individual	1095	2785	4056	5161	6056	19153
Limit investment interest						
Individual	145	351	495	638	768	2397
B. Disallow deduction for interest to fund IRA's						
Individual	*	*	*	*	*	*
SUBTOTAL						
Individual	1240	3136	4551	5799	6824	21550
SUBTOTAL, INTEREST EXPENSES	1240	3136	4551	5799	6824	21550
XIII. MINIMUM TAX						
A. Individual Minimum Tax (21%)						
Individual	1377	3656	948	-487	-1016	4478

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
B. Corporate Minimum Tax (20%)[d]						
Corporate	2717	4649	4760	4225	3532	19883
SUBTOTAL						
Individual	1377	3656	948	-487	-1016	4478
Corporate	2717	4649	4760	4225	3532	19883
SUBTOTAL, MINIMUM TAX	4094	8305	5708	3738	2516	24361
XIV. PENSIONS AND EMPLOYEE BENEFITS						
A. Pensions						
Limit IRA deduction for individuals not covered by retirement plans						
Individual	211	4758	4576	4609	4797	18951
Limit deferrals of employee cash or deferred arrangements, and tax-sheltered annuities to $7000. Additional $2500 deferral if invest in employer securities						
Individual	276	393	491	614	768	2542
Apply nondiscrimination tests of CODA's to all employer matching contributions						
Individual	**	**	**	**	**	**
Permit tax-exempt employers to maintain CODA's						
Individual	-**	-**	-**	-**	-**	-**
Modify coverage tests and vesting requirements of qualified plans						
Individual	**	**	**	**	**	**
10% additional income tax on early withdrawls						
Individual	499	263	231	259	290	1542
Replace 10 year averaging with 5 year treatment						
Individual	95	277	211	284	344	1211
Define normal retirement age as social security age and adjust early retirement assumption						
Individual	600	900	1000	1200	1343	5043
Delay indexing of dollar limits to defined contribution plans						
Individual	0	1	2	4	5	12
10% excise on qualified plan reversions						
Excise	250	125	20	20	20	435
Phase out 3 year recovery rule						
Individual	1899	2100	1977	2049	2050	10075
Special rules for Simplified Employee Plans						
Individual	-15	-35	-40	-45	-50	-185
B. Employee Benefits						
Exclude educational assistance with cap						
Individual	-126	-38	-	-	-	-164
FICA	-69	20	-	-	-	-89
Exclude group legal benefits						
Individual	-109	-38	-	-	-	-147
FICA	-42	-10	-	-	-	-52
Exclude campus lodging						
Individual	-*	-*	-*	-*	-*	-*
Allow self-employed to deduct 25% of health insurance premiums						
Individual	-126	-244	-307	-114	-	-791
Modify non-discrimination tests for health plans, group-term life insurance, and establish uniform definition of highly compensated employees						
Individual	-	75	132	144	156	507
Modify tangible prizes and awards treatment						
Individual	-17	-48	-51	-53	-56	-225
Modify accrued vacation pay						
Individual	5	8	2	2	2	19
Corporate	80	59	16	17	14	187

Table 1.1 REVENUE ESTIMATES (continued)

	1987	1988	Fiscal Year 1989 ($ Millions)	1990	1991	Total 1987-91
C. Employee Stock Ownership Plans (ESOP's)						
Repeal present law effective January 1, 1987						
Corporate	1220	1055	408	215	80	2978
Non-credit ESOP changes						
Corporate	-140	-188	-248	-293	-338	-1207
Estate and Gift	-666	-646	-1239	-1890	-2581	-7022
SUBTOTAL						
Individual	3192	8372	8224	8953	9649	38390
Corporate	1160	926	176	-61	-244	1958
Excise	250	125	20	20	20	435
FICA	-111	-30	0	0	0	-141
Estate and Gift	-666	-646	-1239	-1890	-2581	-7022
SUBTOTAL, PENSIONS AND EMPLOYEE BENEFITS	3825	8747	7181	7022	6844	33620
XV. RESEARCH AND DEVELOPMENT PROVISIONS						
A. Extend & Modify R&D Credit Thru 1988 at 20% Rate						
(Increase incentives for university research)						
Individual	-17	-15	-12	-6	-3	-53
Corporate	-1383	-1072	-739	-399	-245	-3838
B. Adopt Rule for Allocating R&D Expenditures						
Between U.S. and Foreign Income						
Corporate	-257	-138	0	0	0	-395
C. Exception for Personal Holding Company Rules in						
Developing Computer Software						
Corporate	-40	-10	-9	-7	-6	-72
D. Augmented charitable deduction for the donation						
of scientific equipment						
Corporate	*	*	*	*	*	*
SUBTOTAL						
Individual	-17	-15	-12	-6	-3	-53
Corporate	-1680	-1220	-748	-406	-251	-4305
SUBTOTAL, R & D PROVISIONS	-1697	-1235	-760	-412	-254	-4358
XVI. TAX SHELTERS AND REAL ESTATE						
A. Tax Shelters						
Limit Nonparticipatory Losses & Credits (Passive Losses)						
Individual	841	3486	5856	8274	10352	28809
Corporate	-40	-269	-707	-1134	-1636	-3786
B. Real Estate						
1. At-risk Rules Extended to Real Estate						
(Except third party non-recourse debt)						
Individual	*	*	*	*	*	*
2. 20% Credit for Historic Structures and 10% Credit						
for Other Rehabilitation Expenditures						
Individual	61	222	343	410	472	1508
Corporate	42	122	174	205	232	775
3. New Credit for Low Income Rental Housing						
Individual	-80	-297	-535	-707	-798	-2417
Corporate	-7	-26	-47	-62	-71	-213
4. Modify Taxation of Real Estate Investment Trusts						
Corporate	20	17	-8	-11	-14	4
SUBTOTAL						
Individual	822	3411	5664	7977	10026	27900
Corporate	15	-156	-588	-1002	-1489	-3220
SUBTOTAL, TAX SHELTERS AND REAL ESTATE	837	3255	5076	6975	8537	24680

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
	($ Millions)					
XVII. TAX-EXEMPT BONDS						
A. Restrict arbitrage and limit nongovernmental use						
Individual	173	596	922	1181	1427	4299
Corporate	299	521	481	350	193	1844
B. Modify Refunding Rules for Tax-Exempt Bonds						
Individual	14	70	167	270	342	863
Corporate	*	*	*	*	*	*
C. Extend Information Reporting Requirements to all tax-exempt bonds						
Individual	*	*	*	*	*	*
Corporate	*	*	*	*	*	*
SUBTOTAL						
Individual	187	666	1089	1451	1769	5162
Corporate	299	521	481	350	193	1844
SUBTOTAL, TAX-EXEMPT BONDS	486	1187	1570	1801	1962	7006
XVIII. TAXATION OF TRUSTS, ESTATES, AND MINOR CHILDREN						
A. Unearned Income of Children Under Age 14 Tax unearned income of children under age 14 at parent's top marginal rate						
Individual	92	254	208	224	234	1012
B. Compress Present Law Rate Schedule for Income Estates						
Individual	5	21	32	34	35	127
Trusts						
Individual	30	124	194	203	214	765
C. Modified Taxation of Grantor Trusts						
Individual	**	**	**	**	**	100
D. Generation-skipping Transfer Tax						
Estate and Gift	-*	-*	-*	-*	-*	-*
E. Shorten Holding Period for Special Recapture Tax on Heirs						
Individual	*	*	*	*	*	*
F. Extension of Time to Supply Information on Certain Estate Tax Returns						
Individual	-*	-*	-*	-*	-*	-*
G. Decrease Period of Tax Deferral for Trusts						
Individual	1150	128	133	135	137	1683
H. Payment of Income Taxes of Estates						
Individual	361	257	29	31	32	710
SUBTOTAL						
Individual	1638	784	596	627	652	4297
Estate and Gift	0	0	0	0	0	
SUBTOTAL, TAXATION OF TRUSTS AND ESTATES	1638	784	596	627	652	4297
XIX. MISCELLANEOUS PROVISIONS						
A. Extend/Modify Targeted Jobs Credits for 3 Years (40% rate for first year employment and no credit for second year employment)						
Individual	-22	-36	-39	-23	-14	-134
Corporate	-145	-240	-198	-111	-58	-752

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year 1987	1988	1989	1990	1991	Total 1987-91
	($ Millions)					
B. Extend Expensing Costs for Removing Barriers to Handicapped						
Individual	-2	-1	-1	-1	-2	-7
Corporate	-21	-12	-14	-16	-18	-81
C. Tax Relief for Vietnam MIA Spouses						
Individual	-*	-*	-*	-*	-*	-*
D. Exempt and Nonprofit Organizations						
Rentals of membership lists						
Corporate	-4	-8	-7	-8	-9	-36
Tax exemption for certain title holding companies						
Individual	-2	-7	-11	-19	-29	-68
Corporate	-3	-13	-22	-36	-57	-131
Exempt trade show income						
Corporate	-4	-8	-12	-16	-22	-62
Exception to membership organization deduction rules						
Corporate	0	-*	-*	-*	-*	-*
Excise	0	-*	-*	-*	-*	-*
Tax-exempt status for technology transfer organization						
Corporation	-*	-*	-*	-*	-*	-*
Distribution of Low-Cost Articles by Charities						
Corporation	-	-*	-*	-*	-*	-*
E. Diesel Tax at Wholesale Level						
Excise	5	*	*	*	*	5
F. Allocation of Co-op Housing Interest and Taxes						
Corporate	-*	-*	-*	-*	-*	-*
G. Change in Gasoline Excise Tax						
Individual	-	-12	-19	-19	-19	-69
Corporate	-	-2	-3	-3	-3	-11
Excise	-	300	200	200	200	900
H. Foster Care Payment						
Individual	-5	-8	-9	-11	-12	-45
I. Reindeer Related Income						
Individual	-*	-*	-*	-*	-*	-*
J. Treatment of Certain Technical Personnel						
Individual	-*	-*	-*	-*	-*	-*
FICA	*	*	*	*	*	*
SECA	-*	-*	-*	-*	-*	-*
FUTA	*	*	*	*	*	*
SUBTOTAL						
Individual	-31	-64	-79	-73	-76	-323
Corporate	-177	-283	-256	-190	-167	-1073
Excise	5	300	200	200	200	905
FICA	-*	-*	-*	-*	-*	-*
SECA	-*	-*	-*	-*	-*	-*
FUTA	-*	-*	-*	-*	-*	-*
SUBTOTAL, MISCELLANEOUS PROVISIONS	-203	-47	-135	-63	-43	-491

XX. TECHNICAL CORRECTIONS TO RECENTLY ENACTED LEGISLATION

	1987	1988	1989	1990	1991	Total 1987-91
SUBTOTAL						
Individual	-	-	-	-	-	-
Corporate	-175	-	-	-	-	-175
Customs	-	-	-	-	-	-
Excise	-	-	-	-	-	-
Estate and Gift	-	-	-	-	-	-
FICA	-	-	-	-	-	-
FUTA	-	-	-	-	-	-
SECA	-	-	-	-	-	-

Table 1.1 REVENUE ESTIMATES (continued)

	Fiscal Year					Total
	1987	1988	1989	1990	1991	1987-91
			($ Millions)			
SUBTOTAL, TECHNICAL CORRECTIONS	-175	-	-	-	-	-175
SUMMARY, TAX REFORM ACT OF 1986, BY SOURCE OF ESTIMATED REVENUE:						
TOTALS:						
Individual	-9294	-24196	-34216	-32833	-29768	-130306
Corporate	28252	25155	23395	25320	27717	129838
Excise	381	456	240	243	247	1567
Customs	0	0	0	0	0	0
Estate and Gift	-666	-641	-1232	-1883	-2574	-6996
FICA and SECA	-48	82	133	149	180	496
FUTA	0	0	0	0	0	0
Outlays	-87	-1675	-2793	-2830	-2878	-10263
TOTAL UNIFIED BUDGET EFFECT	18538	-819	-14473	-11834	-7076	-15664
Less Outlays	-87	-1675	-2793	-2830	-2878	-10263
TOTAL UNIFIED BUDGET RECEIPTS EFFECT	18625	856	-11680	-9004	-4198	-5401

Notes:

Five year (1987-1991) totals may not add due to rounding.

* = less than $5 million

** = less than $50 million

-* = loss less than $5 million

0 indicates a rounded number greater than zero but less than $50 million

\- indicates orginal entry is zero

[a] Outlays shown as negatives.

[b] A direct expenditure program under Social Security is expected to offset the revenue increases.

[c] Does not include the Blue Cross/Blue Shield effect, which is included in a separate provision.

[d] Does not include any effect of Tax Reform on corporate estimated payments made during FY 1986.

FOOTNOTES

[1] *Tax Reform for Fairness, Simplicity, and Economic Growth, Volume 1: Overview*, November, 1984, U.S. Department of the Treasury, pp. 245-254.

[2] *The President's Tax Proposals to the Congress for Fairness, Growth, and Simplicity*, The White House, May, 1985, pp. 453-461.

[3] *Budget of the United States Government for FY 1988: Supplement*, The Office of Management and Budget, January, 1987, pp. 4-15 - 4-17.

[4] For an example see *The Tax Reform Act of 1986, Conference Report*, Volume II, pp. II-861, II-885.

[5] Much of the criticism of the "static" nature of revenue estimates—in the sense that they were assumed to exclude taxpayer responses to changes in tax law—was published in news media editorials and letters during the course of the tax reform debates. For example, see the April 3-15, 1985 series of Wall Street Journal editorials on reform referring to the static nature of Treasury estimates.

[6] The baseline forecast, which is generated by the Council of Economic Advisors, is grounded in the quarterly econometric model created by the Bureau of Economic Analysis. Deviations from the model output occur as the initial forecast is reviewed and revised by the Treasury Department, the Office of Management and Budget, and the Council of Economic Advisors. The most recent version of the model is described in *The BEA Quarterly Econometric Model of the U.S. Economy*: 1985 Version, Bureau of Economic Analysis Staff Paper 44, U.S. Department of Commerce, July, 1986.

[7] A major problem for revenue estimators is that the revised withholding tables that would normally accompany changes individual income taxes are almost never available until long after the revenue estimate is made. Initial estimates of provisions subject to withholding must therefore be made assuming that historical patterns continue to hold. This is the fundamental reason for Note B in the attached table of revenue estimates (to the effect that the estimates assume that the relationship between collections and tax liability is unchanged from current law). In fact, if withholding more closely mirrors actual liabilities, an element of interest free borrowing from taxpayers will be reduced.

Based on internal tabulations, aggregate (historical) "rules-of-thumb" for translating changes in liability to changes in payments of income taxes are listed below. These ratios show the fraction of a change in calendar year liability that will show up as a change in collections for the same fiscal year and for the next fiscal year. Users should note that the ratios are intended as guides only, that they imply a "normal" pattern of economic activity during the course of a year and that they exclude "startup" effects of changes in law (which are often quite different).

	FY	*FY+1*
	(percentages)	
Individuals: Proposals to change tax rates	55	45
Proposals to change business income	37.5	62.5
Proposals to change minimum taxes:		
Pre-tax reform	0	100
Post-tax reform	33	67
Corporations: Proposals other than minimum tax	60	40
Proposals to change minimum tax:		
Pre-tax reform	0	100
Post-tax reform	60	40

[8] Source, unpublished OTA data.

[9] A *Review of the Accuracy of Treasury Revenue Forecasts*, 1963-1978, Staff Working Paper, Congressional Budget Office, February 1981.

REFERENCES

Kenyon, Daphne, *Federal Income Tax Deductibility of State and Local Taxes*. Federal-State-Local Fiscal Relations: Technical Papers, Volume 1, U.S. Department of the Treasury, 1986.

U. S. Department of the Treasury, Office of Tax Analysis. *Report to Congress on the Capital Gains Tax Reductions of 1978*. Washington, DC: Government Printing Office, 1985.