

**OVERVIEW OF REVENUE ESTIMATING PROCEDURES AND
METHODOLOGIES USED BY THE STAFF OF THE
JOINT COMMITTEE ON TAXATION**

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of the
JOINT COMMITTEE ON TAXATION



February 2, 2005
JCX-1-05

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INTRODUCTION

This document,¹ prepared by the staff of the Joint Committee on Taxation (“Joint Committee staff”), provides an overview of the current procedures used in the revenue estimating process. The emphasis is solely on methodology and issues associated with the preparation of conventional revenue estimates.² Part I provides an overview of the revenue estimating responsibilities of the Joint Committee staff. Part II discusses requirements, constraints, and conventions of the revenue estimating process. Part III presents estimating procedures and models.

¹ This document may be cited as follows: Joint Committee on Taxation, *Overview of Revenue Estimating Procedures and Methodologies Used by the Staff of the Joint Committee on Taxation*, (JCX-1-05), February 2, 2005.

² See Joint Committee on Taxation, *Overview of Work of the Staff of the Joint Committee on Taxation to Model the Macroeconomic Effects of Proposed Tax Legislation to Comply with House Rule X111.3.(h)(2)*, (JCX-105-03), December 22, 2003, for a discussion of how the Joint Committee staff provides supplemental macroeconomic analysis of certain tax proposals.

EXECUTIVE SUMMARY

Introduction

This document provides an overview of the current procedures used in the revenue estimating process. The emphasis is solely on methodology and issues associated with the preparation of conventional revenue estimates of proposed changes to the Internal Revenue Code. The report provides a summary of the revenue estimating responsibilities of the Joint Committee staff; discusses requirements, constraints, and conventions of the revenue estimating process; and presents the estimating procedures and models used by the Joint Committee staff in preparing revenue estimates. This summary provides a brief discussion of the principal topics covered in the report.

Overview of Revenue Estimating Responsibilities

The Joint Committee staff is nonpartisan and serves the entire Congress. The Congressional Budget Act of 1974 (“the Budget Act”), as amended, stipulates that revenue estimates provided by the Joint Committee staff will be the official estimates for all tax legislation considered by the Congress. The objective of the estimating process is to produce accurate, consistent, fair, and impartial estimates that can be relied upon by Members of Congress in making legislative decisions.

Any Member of Congress may request a revenue estimate for a tax proposal. There has been a significant growth in requests over time. In 1986, the Joint Committee staff received 474 requests. By 2004, this figure had increased to 3,580. The largest number of requests to date, 4,839, was received in 2003. While the majority of requests are for revenue estimates, the Joint Committee staff also receives requests for distributional, legal, and data analyses. All requests are treated as confidential. Generally, a response to a request is released only to the Member making the request and the response remains confidential unless the Member decides to make the information public. Confidentiality allows the Joint Committee staff to maintain its nonpartisan role in the legislative process.

When a revenue estimate has been included in a publicly available document (e.g., a revenue table summarizing a markup proposal or the result of a reported bill), the estimate is posted to the Joint Committee website. An estimate is also publicly released in circumstances where the information is of widespread and immediate interest by the Members of Congress (e.g., a tax bill about to be voted upon by the full House or the full Senate).

Background on Revenue Estimating and Budget Act Requirements

The starting point for a revenue estimate prepared by the Joint Committee staff is the Congressional Budget Office (“CBO”) 10-year projection of Federal receipts, referred to as the “revenue baseline.” The revenue baseline serves as the benchmark for measuring the effects of proposed tax law changes. The baseline assumes that present law remains unchanged during the 10-year budget period. Thus, the revenue baseline is an estimate of the Federal revenues that will be collected over the next 10 years in the absence of statutory changes. The Joint Committee staff is required to use the CBO revenue baseline in their revenue estimates.

In providing conventional estimates, the Joint Committee staff assumes that a proposal will not change total income and therefore holds Gross National Product (“GNP”) fixed. The use of fixed economic assumptions does not prevent the Joint Committee staff from taking into account possible shifts in economic activity across sectors or markets and/or changes in the timing of such activity in response to the proposed tax change, so long as GNP remains unaffected.

The Joint Committee staff uses confidential tax return information to prepare revenue estimates. The Statistics of Income Division (“SOI”) of the IRS provides large micro-level data sets consisting of carefully sampled and edited tax returns. SOI data provides the primary building block for revenue estimates. In the process of estimating a proposal, other information sources are used frequently. These sources include other government data, survey data, constituent data, and third-party data.

The Budget Window and Presentation of Estimates

The Joint Committee staff is required by the budget resolutions to present revenue estimates as point estimates (that is, present one dollar figure rather than a range of possibilities) calculated in nominal dollars. The current budget process also requires the Joint Committee staff to generate revenue estimates of tax legislative proposals over a 10-year period, often referred to as the “budget window.” Revenue estimates for each year within the budget window are fiscal year estimates. The budget resolutions require revenue estimates to be expressed in nominal dollars over a fixed period.

Behavioral Effects in Revenue Estimates

Although conventional revenue estimates are sometimes referred to as “static,” for more than a quarter of a century, Joint Committee staff revenue estimates have taken into account taxpayers’ likely behavioral responses to proposed changes in tax law. Behavioral effects can be broadly characterized as shifts in the timing of transactions and income recognition, shifts between business sectors and entity form, shifts in portfolio holdings, shifts in consumption, and tax planning and avoidance strategies. The report briefly presents a few specific examples that give a flavor for the issues the Joint Committee staff considers when accounting for behavioral effects in revenue estimates.

Compliance, Administration and Enforcement Costs

The Joint Committee staff attorneys, accountants, and economists working as a team examine compliance, administration, and enforcement issues that could affect the timing or amounts of revenues collected as part of the process of understanding how a proposal would operate. When these issues are likely to be important to a proposal, the Joint Committee staff accounts for their effects in the revenue estimate.

The Joint Committee staff uses a variety of sources to determine how compliance, administration, and enforcement issues might affect revenue. IRS compliance studies provide information for issues involving individual taxpayers. The Joint Committee staff also uses information provided by the IRS about their examination, enforcement, appeal, and litigation activities. In some areas, such as tax shelters, the Joint Committee staff is frequently briefed by

IRS personnel. Information provided at these meetings helps the Joint Committee staff gauge the likely compliance, administrative, and enforcement effects of particular proposals.

Indirect Tax Effects

In estimating the revenue effects of proposed changes to tax law, the Joint Committee staff incorporates the behavioral responses of taxpayers (within the fixed-GNP convention) and any indirect tax effects associated with that behavior. These secondary effects are not the direct result of tax changes. Instead, they arise from changes in taxable income induced by behavioral responses to tax changes.

Indirect tax effects are not limited to changes in tax law, however. Non-tax legislation, either by design or not, may cause changes in taxable income and thereby impact Federal tax receipts. The CBO has responsibility for scoring the budget effects of non-tax legislation, and over time CBO has developed general guidelines for when indirect tax effects are scored and by whom (often in consultation with the Joint Committee staff). Regardless of whether CBO or the Joint Committee staff scores the indirect tax effects, to the extent that these effects are accounted for they are included with the estimate of the bill.

Distributional Analysis

Distributional analysis is not a legally required task of the Joint Committee staff. However, upon request of Members or committee staff, distributions of certain tax changes are provided as background information. The Joint Committee staff has produced distributional analyses since the early 1970s. The current distribution methodology dates to 1994. Under this method, the Joint Committee staff provides a distribution by current income group, when sufficient information is available, for legislation affecting the individual income tax, Social Security and Medicare payroll taxes, and excise taxes. The current methodology does not distribute corporate income taxes and estate and gift taxes.

The measure used in the distributional analysis is the change in liability (taxes paid) for the taxable year. Liability is measured, whenever possible, after any behavioral response related to the tax change. Compliance issues are also taken into account in the measurement of liability.

The basic unit of analysis is the tax filing unit or return. Changes in tax liability are distributed to taxpayers according to their expanded income. This income classifier begins with Federal adjusted gross income and adds tax-exempt interest, employer contributions for life and health insurance, employer share of Social Security and Medicare payroll tax, workers' compensation, untaxed Social Security benefits, insurance value of Medicare benefits, alternative minimum tax preference items, and excluded income of U.S. citizens living abroad. Yearly distributions in nominal dollars are provided for the first five years of the 10-year budget window.

Tax Models

The Joint Committee staff uses several highly developed microsimulation tax models to estimate the revenue impact of changes in tax laws. These are the Individual Model, the Corporate Model, and the Estate and Gift Model. In addition, the staff is beginning to use

individual panel-based models. The primary source of tax data for the models comes from the SOI division within the IRS. Some of the models use large micro-data files, while others are smaller and spreadsheet based. Some models reside on a desktop computer, while others reside on “servers” and are simultaneously available to several staff members. The complexity and scope of a model are determined by several factors including the amount and type of data available, the level of interest in the model, and the level of complexity associated with the questions being asked of the model.

I. OVERVIEW OF REVENUE ESTIMATING RESPONSIBILITIES

The Joint Committee staff is nonpartisan and serves the entire Congress. Section 201(f) of the Congressional Budget Act of 1974 (“the Budget Act”), as amended, stipulates that revenue estimates provided by the Joint Committee staff will be the official estimates for all tax legislation considered by the Congress.

Any Member of Congress may request a revenue estimate for a tax proposal. The Joint Committee staff asks that these be written requests signed by the requesting Member.³ The Joint Committee staff also answers written requests from ranking staff members of the House Ways and Means Committee and the Senate Finance Committee. Although most requests come from the Members and staff of these committees, the Joint Committee staff receives and attempts to answer as many requests as possible from all Members. Requests are handled on a first-in, first-out basis to the greatest extent possible. However, the Joint Committee staff is forced to make adjustments to that policy based on the legislative timetable and committee and floor action.

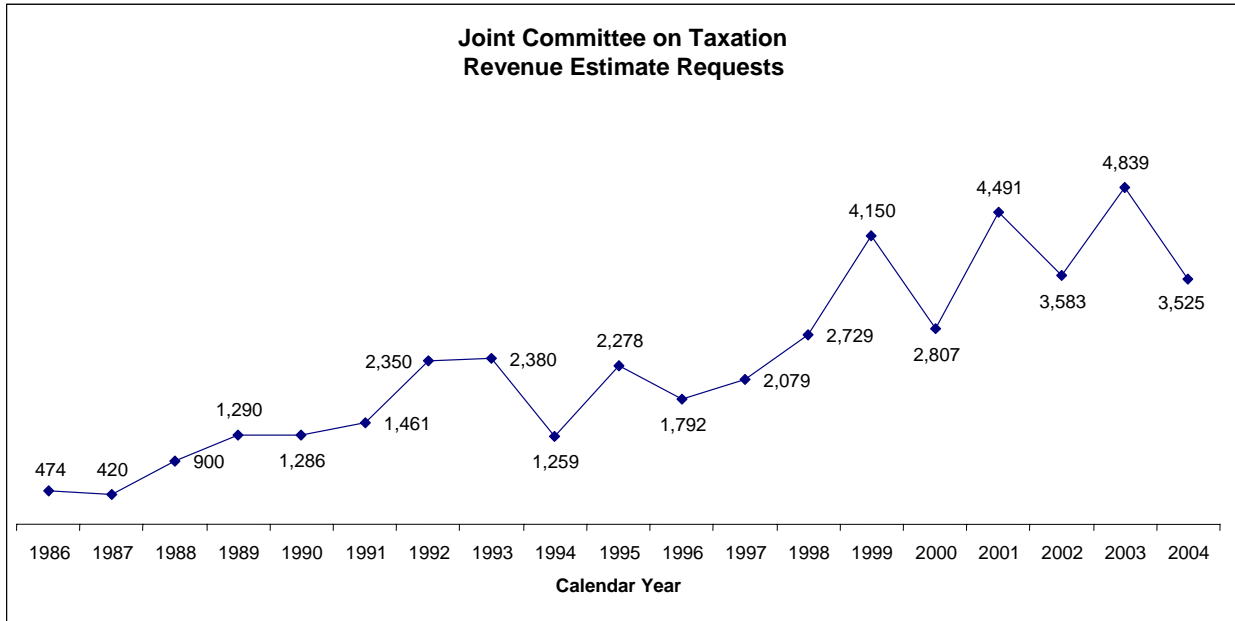
Figure 1 shows a graph of the numbers of requests received each year since 1986. The graph shows that there has been a significant growth in requests over time. Information from previous years, not shown, indicates that a very large portion of this growth comes from increased activity from the staffs of the tax-writing committees. Table 1 provides a breakdown of requests from various sources for the 2nd Session of the 108th Congress. This attachment also shows that over 90 percent of all requests received in 2004 have been closed. Over 75 percent were closed through written response.

While the majority of requests are for revenue estimates, the Joint Committee staff also receives requests for distributional, legal, and data analyses. All requests are treated as confidential. Generally, a response to a request is released only to the Member making the request and the response remains confidential unless the Member decides to make the information public. The confidential treatment of Member requests extends to the process of developing tax legislation, which may involve substantial consultation between a Member (and his or her staff) and the Joint Committee staff. Similarly, any information provided to the Joint Committee staff to help in the formulation of a revenue estimate is treated as confidential and is not released outside the Joint Committee staff. Confidentiality allows the Joint Committee staff to maintain its nonpartisan role in the legislative process.

When a revenue estimate has been included in a publicly available document (e.g., a revenue table summarizing a markup proposal or the result of a reported bill), the estimate is posted to the Joint Committee website. An estimate is also publicly released in circumstances where the information is of widespread and immediate interest by the Members of Congress (e.g., a tax bill about to be voted upon by the full House or the full Senate).

³ The Joint Committee staff makes presentations to new Congressional staff regarding Joint Committee services and procedures when time permits. A pamphlet describing Joint Committee services is also available (Joint Committee on Taxation, *Background Information Relating to the Joint Committee on Taxation*, JCX-12-00, January 12, 2000).

Figure 1



The Joint Committee staff uses confidential tax return information to prepare revenue estimates as well as to assist understanding of the tax law. Section 6103 of the Internal Revenue Code (“the Code”) provides that return and return information are confidential and not to be disclosed to anyone except as explicitly authorized in section 6103. Section 6103(f) authorizes the Joint Committee staff to receive confidential tax returns and return information from the Internal Revenue Service (“IRS”). The Joint Committee staff is not authorized to disclose confidential tax return information except in a limited number of circumstances enumerated in section 6103(f)(4). These situations arise only when the Joint Committee, the House Ways and Means Committee, or the Senate Finance Committee is meeting in closed executive session, or when the Chief of Staff of the Joint Committee appoints persons as agents.

The objective of the estimating process is to produce accurate, consistent, fair, and impartial estimates that can be relied upon by Members of Congress in making legislative decisions. The Joint Committee staff is dedicated to improving its estimating methodology to enhance the accuracy of its work product.

Twenty-five years ago, the estimating staff of the Joint Committee consisted of only seven economists. Currently, the estimating staff includes eighteen economists and two statistical analysts. In addition, three computer specialists support both the revenue estimating function and the rest of Joint Committee staff work. The Joint Committee staff economists have advanced degrees and substantial experience with computer modeling and quantitative methods of analysis relating to revenue estimation. As can be seen from Figure 1, the number of revenue requests increased by over sevenfold between 1986 and 2004. The estimating staff has doubled

in that time. Despite the increased workload, the Joint Committee staff has been able to maintain the quality of its estimates as a result of improved technology and other efficiency gains.

Table 1

REQUEST DATA RELATING TO THE 2ND SESSION OF THE 108TH CONGRESS [1]

Calendar Year 2004

Requestors	Requests Received	Requests Pending	Requests Closed	Percent Closed
Ways & Means Committee				
Republicans.....	842	66	776	92.2%
Democrats.....	188	19	169	89.9%
Senate Finance Committee				
Republicans.....	933	91	842	90.2%
Democrats/Independent.....	1,162	97	1,065	91.7%
House (Non Ways & Means Committee)				
Republicans.....	71	7	64	90.1%
Democrats/Independent.....	78	10	68	87.2%
Senate (Non Senate Finance Committee)				
Republicans.....	81	10	71	87.7%
Democrats.....	131	10	121	92.4%
Others.....	94	9	85	90.4%
TOTAL.....	3,580	319	3,261	91.1%

Joint Committee on Taxation

[1] Totals include both revenue and non-revenue requests.

II. REQUIREMENTS, CONSTRAINTS, AND CONVENTIONS OF THE REVENUE ESTIMATING PROCESS

A. Background on Revenue Estimating and Budget Act Requirements

1. Estimating mechanics

The starting point for a revenue estimate prepared by the Joint Committee staff is the Congressional Budget Office (“CBO”) 10-year projection of Federal receipts, referred to as the “revenue baseline.” The revenue baseline serves as the benchmark for measuring the effects of proposed tax law changes.⁴ The baseline assumes that present law remains unchanged during the 10-year budget period. Thus, the revenue baseline is an estimate of the Federal revenues that will be collected over the next 10 years in the absence of statutory changes. The Joint Committee staff is required to use the CBO revenue baseline in their revenue estimates.

Underlying the baseline revenue forecast is a 10-year forecast of macroeconomic conditions, which CBO produces at the beginning of each calendar year, and updates each August.⁵ Revenue estimates produced by the Joint Committee staff generally incorporate as underlying assumptions relevant parts of the CBO baseline macroeconomic forecast, including total output, investment, inflation and interest rates, and growth rates for specific income flows such as corporate profits and wages. The CBO baseline provides the anchor but not the many details necessary for analyses of Member requests. For this reason, the Joint Committee staff develops most of its own detailed baselines and models.⁶ In providing conventional estimates, the Joint Committee staff assumes that a proposal will not change total income and therefore holds Gross National Product (“GNP”) fixed.⁷ The use of fixed economic assumptions does not prevent the Joint Committee staff from taking into account possible shifts in economic activity across sectors or markets and/or changes in the timing of such activity in response to the proposed tax change, so long as GNP remains unaffected.

⁴ The revenue baseline is a component of the budget baseline prepared by CBO, which includes expenditures as well as receipts.

⁵ Although the CBO issues a mid-year revision of its forecast, the “official” forecast remains the one specified in the conference report accompanying the budget resolution and is the one used in revenue estimates. Generally that has been the January baseline.

⁶ For example, the CBO provides a baseline for investment in equipment but not for investment in transportation equipment. Thus, the Joint Committee staff must develop its own baseline to analyze proposals that affect transportation equipment.

⁷ GNP and Gross Domestic Product (“GDP”) are measures of U.S. production. GDP refers to production taking place in the United States and, as such, covers the goods and services produced by factors of production (labor and property) located in the United States. GNP includes those goods and services produced anywhere in the world by factors of production supplied or controlled by U.S. residents.

The Statistics of Income Division (“SOI”) of the IRS provides large micro-level data sets consisting of carefully sampled and edited tax returns.⁸ SOI data provides the primary building block for revenue estimates. In the process of estimating a proposal, other information sources are used frequently. These sources include other government data, survey data, constituent data, and third-party data.⁹ The tax data and tax models used by the Joint Committee staff are discussed in further detail in section III.D.

Although conventional revenue estimates assume that a proposal will not affect macroeconomic projections, the estimates anticipate and take into account the behavioral and other microeconomic effects of the proposal. The tax lawyers and accountants on the Joint Committee staff help the economists interpret statutory language and provide feedback regarding some of the ways in which taxpayers may respond to a particular proposal.

2. Estimating checks and balances

There are a number of checks and balances in the revenue estimating process. The Joint Committee staff, working as a team, provides internal checks of revenue estimates through a formal review process that includes attorneys who work on the relevant topic, both Deputy Chiefs of Staff, and the Chief of Staff. The Joint Committee staff uses a computerized document management system to keep track of requests, work in progress, the formal review process, and the ultimate processing of responses to Members.

Treasury, CBO, State estimators, academics, and private sector contacts may contribute to the dialogue before and after an estimate is provided, subject to confidentiality rules. Sometimes a proposal will exist for many years before it becomes law. For example, the proposals creating empowerment zones took almost 10 years to be enacted, and thus the economists had time to iteratively refine the models used to estimate the evolving proposals.

Although there is no formal process for the revisiting of estimates over time, each economist updates his or her revenue estimating models each year as part of updating assumptions to the new CBO baseline. To the extent that additional information has become available in that time period, it is incorporated into the updated model. The Joint Committee staff often uses this occasion to consult recent academic literature and to research modeling issues with colleagues and outside experts.

Comprehensive retrospective examinations are extremely difficult for a number of analytical reasons. One reason is that it is often impossible to tell what revenue collections would have occurred in the absence of a specific proposal, as receipts are affected by general economic conditions. In addition, estimates that become law are typically enacted as parts of large tax bills that contain many interacting provisions. Identifying the impact of a specific

⁸ The IRS has a wealth of other information relating to the administration and enforcement of the tax laws, and the Joint Committee staff draws upon this information as well.

⁹ Data from private sources is potentially valuable to the Joint Committee staff. For some proposals, this data provides the only information available. Any data received from outside sources is carefully screened before being used in the revenue estimating process.

provision is at best problematic, and often impossible. Revisiting the estimate of an entire tax bill, as opposed to individual provisions in the bill, also presents difficulties. Most large packages can be expected to result in behavioral effects that have allocative or sectoral consequences and may generate macroeconomic effects. Teasing out the portion of the economic changes caused by a specific tax law change is a challenging task. While the Joint Committee staff does not lack the expertise to engage in such econometric analyses, they require a considerable investment of staff time, and the results are always subject to debate.

3. Tax expenditures

The Budget Act mandates the Joint Committee staff to transmit annually to the House and Senate Budget Committees its estimates of tax expenditures for the next five years. Tax expenditures are defined under the Budget Act as “revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability.” Thus, tax expenditures include any reductions in income tax liabilities that result from special tax provisions or regulations that provide tax benefits to particular taxpayers.

Tax expenditures are analyzed relative to a concept of “normal income taxation,” which generally embodies taxing income as it is accrued, except when measurement of the accrual is deemed too difficult to administer (as in the case of unrealized capital gains or unexercised stock options). A tax expenditure is measured by the difference between tax liability under present law and the tax liability that would result from a re-computation of tax without benefit of the tax expenditure provision. Unlike revenue estimates, tax expenditure estimates do not include behavioral responses or possible interaction with other incentives.

Each year the Joint Committee staff updates the tax expenditure list to reflect any legislative changes that may have added or removed a tax preference during the year. Estimates are, of course, updated to reflect current economic conditions. After transmitting its report to the Budget Committees, the Joint Committee staff has traditionally published its list of tax expenditure estimates.¹⁰

¹⁰ The Joint Committee staff first prepared tax expenditure estimates in 1972 (*Estimates of Federal Tax Expenditures*, October 4, 1972) and has published tax expenditure pamphlets annually since 1975. See, for example, Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2005-2009*, JCS-1-05, January 12, 2005.

B. The Budget Window and Presentation of Estimates

1. The budget window

Impact of the budget window on legislative proposals

The current budget process requires the Joint Committee staff to generate revenue estimates of tax legislative proposals over a 10-year period, often referred to as the “budget window.”¹¹ Revenue estimates for each year within the budget window are fiscal year estimates. The Federal fiscal year covers the period from October 1 to September 30.

The use of a finite budget window provides proponents of legislation with two strategies to reduce the revenue cost of a proposal. A provision may be sunsetted before the end of the budget window or conversely may be phased-in gradually over the budget window so that the provision becomes fully effective years after the date of enactment or even outside the budget window. Under a Budget Act requirement, only sunsets of excise taxes dedicated to trust funds are assumed to continue (and not sunset). Revenue estimates prepared by the Joint Committee staff reflect the proposed changes in law no matter how unusual the pattern may be.

The sunseting of a provision can have behavioral, and therefore revenue, implications because taxpayers may have an incentive to modify their behavior in order to have tax-favored activity fall within the period of eligibility. A typical response is an acceleration of activity that would normally occur after the sunset. The effect of a phase-in is opposite that of a sunset: rather than accelerating taxpayer activity, it can delay taxpayer activity.

Taxpayer expectations also affect the behavioral response to sunset rules. For example, although a revenue estimate takes seriously the forthcoming sunsets of a provision, the estimates may also assume that taxpayers will view a provision that has a history of being temporarily extended as being permanent. In that case, the sunseting of the provision may result in very little or no behavioral changes.

Present discounted value and nominal versus real

Because the budget resolutions require revenue estimates to be expressed in nominal dollars over a fixed period (currently 10 years), the Joint Committee staff does not discount the revenue cost of proposals for the time value of money. In general, the effect of discounting within the budget window is to lower the revenue effect (either positive or negative). To provide a complete estimate of the present discounted value of a proposal that effects tax revenue into the future, the Joint Committee staff would be required to project the revenue effect of the proposal many years beyond the budget window to fully capture all costs and benefits. Currently, the economic forecast provided by CBO, which underlies the Joint Committee staff’s revenue estimates, only covers 10 years into the future. An economic forecast well beyond the budget window would be a necessary first step to providing estimates in present value terms. Another

¹¹ Under the Budget Resolution of 1994, the Senate requires presentation of estimates for each year of a 10-year budget period and totals summing (i) the first five-year and (ii) the entire 10-year period. The House requires estimates for each year of a five-year budget period.

practical issue is determining the correct discount rate. Even within a 10-year budget window, the discounted revenue effect of proposals will vary considerably with the choice of discount rate.

Although the response letters prepared by the Joint Committee staff do not provide estimates for revenue effects beyond 10 years, the letters often note that there will be revenue effects outside the budget window.

2. Presentation of estimates

The actual presentation of revenue estimates within a revenue table or letter to a Member of Congress is dictated by certain factors that the Joint Committee staff is required to conform to, and others that are subject to Joint Committee staff discretion. For example, the Joint Committee staff is required to present revenue estimates as point estimates (that is, present one dollar figure rather than a range of possibilities) calculated in nominal dollars. The Joint Committee staff has discretion in how to present interaction effects between components of a tax package. To the extent that these interaction effects have revenue costs, the consequences can either be incorporated into the revenue estimates of the individual proposals or expressed as a separate line item on a revenue table. The Joint Committee staff uses both techniques.

C. Offsets in Revenue Estimates

1. The income and payroll tax offset to changes in excise tax revenues

Introduction

In estimating the revenue effects of changes in excise taxes, the Joint Committee staff (along with staff at CBO and Treasury's Office of Tax Analysis ("OTA")) generally assumes that the net effect on total Federal tax receipts from an increase in Federal excise taxes is less than the increase in gross excise tax receipts. The difference between the change in excise tax receipts and the change in total Federal tax receipts is referred to as the "income and payroll tax offset." The difference arises from the fact that an increase (decrease) in excise taxes results in a decrease (increase) in income subject to Federal income and payroll taxation.

There are several channels through which the imposition of an excise tax can affect taxable income. If supply of the taxed product is perfectly inelastic, producers of the taxed product absorb the entire cost of the tax. While the gross receipts of the producers remain unchanged, net receipts after payment of the excise tax fall by the amount of excise tax collected. This decline in income for producers of the taxed good will be allocated among profits and wages, depending on market forces, and result in a decline in some combination of the payroll tax base, and the individual and corporate tax bases.

If, at the opposite behavioral extreme, demand is perfectly inelastic, consumers pay the entire tax. Producers of the taxed good will take in more revenue per unit of sale, but will subtract the excise tax as a cost of doing business leaving net revenue per unit sold and thus taxable income unchanged. However, if consumers now spend more on their purchases of taxed goods, consumer spending on non-taxed goods will fall, thus lowering the taxable income of producers of non-taxed goods. As in the previous case, this change in consumption will result in some combination of reduced payroll, corporate income, and individual income taxes in the affected industries.

Of course, for most taxed products, it is likely that neither of these two extreme cases would occur. Instead, it is expected that the reduction in taxable income due to the imposition of an excise tax will come from some combination of reduced taxable income to the taxed and non-taxed goods.

Measuring the Offset

The existence of the income and payroll tax offset for excise taxes has become an established, generally accepted component of revenue estimates for excise taxes. Because the incidence assumptions that would have to be made in calculating separate offset factors for each type of excise tax would be extremely time-consuming to determine and would, in any event, be subject to a substantial degree of uncertainty, revenue estimating staffs have settled on using a standard offset factor for most excise tax estimates. This factor may be thought of as an average

marginal tax rate on factors of production. For some years, estimating staffs (Joint Committee staff, OTA staff and CBO staff) have applied a 25 percent offset to most excise tax estimates.¹²

2. The income and payroll tax offset to changes in payroll tax revenues

In estimating the effects of changes in payroll taxes, the Joint Committee staff generally assumes that the net effect on Federal receipts is less than the change in payroll tax receipts. Payroll taxes include taxes under the Federal Insurance Contributions Act (“FICA”) and the Federal Unemployment Tax Act (“FUTA”). Because these taxes are levied on virtually all employees,¹³ there are no shifting opportunities for avoiding this tax. Consequently, it is assumed that payroll taxes are part of the cost of compensation. In addition, it is assumed that employees’ compensation is equal to their marginal product of labor, and that their marginal product of labor is not affected by changes in payroll tax law. Therefore, any change in payroll taxes will be offset by changes in other forms of compensation. While it is possible that this reallocation of compensation in response to a change in payroll taxes could occur over several years, in the interest of consistency and simplicity of implementation, the offset is applied as if the reallocation occurs in the first year of the policy change.

Using these assumptions, the offset is derived by allocating the change in other compensation across taxable and non-taxable compensation proportionately and applying an average marginal tax rate on wages to the taxable portion of the reallocation. This computation results in an offset of 10 percent of the estimated changes in payroll taxes.¹⁴ As with the income and payroll tax offset for excise taxes, the payroll tax offset has not been recomputed in recent years.

3. Indirect tax effects

In estimating the revenue effects of proposed changes to tax law, the Joint Committee staff incorporates the behavioral responses of taxpayers (within the fixed-GNP convention) and any indirect tax effects associated with that behavior. These secondary effects are not the direct result of tax changes. Instead, they arise from changes in taxable income induced by behavioral responses to tax changes.¹⁵

Indirect tax effects are not limited to changes in tax law, however. Non-tax legislation, either by design or not, may cause changes in taxable income and thereby impact Federal tax

¹² Adjustments are sometimes necessary in the application of the offset to excise taxes that are levied on products sold or purchased primarily by non-taxed entities, such as vaccines, for which the Federal government is a major purchaser.

¹³ There is an exception for FICA taxes for certain employees of State and local governments who were hired before April 1, 1986, and continuously employed by State or local governments who maintained retirement systems outside the Social Security system, and who were never part of the Social Security system.

¹⁴ This is the same offset used by CBO and OTA.

¹⁵ Behavioral responses are discussed in section III.A.

receipts.¹⁶ The CBO has responsibility for scoring the budget effects of non-tax legislation, and over time CBO has developed general guidelines for when indirect tax effects are scored and by whom (often in consultation with the Joint Committee staff). For example, when CBO scored President Clinton's health plan in 1994, they included indirect tax effects. The general argument for including these effects was that this major health reform would result in "significant" indirect tax effects. Today, in scoring the budget effects of non-tax health legislation, CBO includes indirect tax effects if such legislation is reasonably believed to affect health insurance premiums, even if the indirect tax effects would not be considered "significant" by some measures.¹⁷

Another general guideline for whether or not indirect tax effects are accounted for is whether the non-tax legislation appears to be aimed at affecting Federal tax rules or liability. For example, because the interest income on most State and local bonds is exempt from Federal taxation, legislation that promotes the use of tax-exempt bonds generally will result in a decline in taxable income and revenues.¹⁸ The Joint Committee staff provides the indirect effects associated with non-tax legislation that affects the issuance of tax-exempt bonds. Another example of a non-tax provision that would fall under this criterion is a proposed change in the priority of Federal tax liability relative to other obligations of the debtor in bankruptcy settlements.

CBO generally incorporates the indirect tax effects of regulatory bills that mandate the increased or decreased use of products that receive special tax treatment. For example, under current law, businesses are provided with a tax benefit equal to 52 cents per gallon of ethanol that is mixed with gasoline. Recent proposed legislation has mandated that oil companies increase the amount of ethanol that is blended with gasoline. If the proposal were enacted there would be an indirect tax effect equal to the additional ethanol used due to the mandate times the tax subsidy rate. CBO scores the indirect tax effects associated with this proposal.

Regardless of whether CBO or the Joint Committee staff scores the indirect tax effects, to the extent that these effects are accounted for they are included with the estimate of the bill. CBO currently does not score the indirect effects associated with certain outlays. In theory, any outlay could have indirect tax effects by altering the amount of taxable income in the economy. For many outlays, such effects would not exist under the general revenue estimating convention that nominal GNP remains fixed. However, with respect to outlays that are taxable income, such

¹⁶ By definition, the tax effects of non-tax legislation are indirect.

¹⁷ For instance, S. 1637 as passed by the Senate in the 108th Congress, includes an extension of the Mental Health Parity Act of 1996. In general, the Act required insurance companies to set the same annual and lifetime coverage limits for mental illness as for physical illness. The Joint Committee staff analysis of this provision was that it would result in increased premiums for employers who provide their employees with health insurance and thereby result in an increase in nontaxable fringe benefits. The effect of the proposal is to decrease Federal revenues by increasing non-taxable compensation and decreasing taxable wages and/or profits. CBO scored the revenue effects associated with this proposal.

¹⁸ Appropriation bills have included fairly specific guidance that grants be used to leverage tax-exempt bond financing. As a result, grants would reasonably be expected to result in net new additions to the stock of tax-exempt bonds and corresponding decreases in taxable income.

as Social Security and unemployment insurance benefits, the absence of an indirect tax effect could lead to some seemingly odd scoring results. For example, if Congress were to provide additional weeks of unemployment compensation (“UC”) benefits to individuals in all States who exhaust their regular UC benefits, CBO would not include the indirect tax effects in the estimated budget cost of such a proposal (the tax effects that result from an increase in taxable income in the amount of the extended UC benefits). Thus, if the proposal were to be signed into law on one day, and the next day legislation were proposed to exclude such payments from taxable income, because CBO had not offset the cost of the proposal with the additional tax receipts associated with the inclusion of the extended UC benefits in income, the Joint Committee staff would not show a revenue effect for a proposal to exclude these benefits from income. However, once CBO updated their baseline to include the tax revenues associated with including these benefits in income, the Joint Committee staff would then score any proposal to exclude them.

III. ESTIMATING PROCEDURES AND MODELS

A. Behavioral Effects

Although conventional revenue estimates are sometimes referred to as “static,” for more than a quarter of a century, Joint Committee staff revenue estimates have taken into account taxpayers’ likely behavioral responses to proposed changes in tax law. Because such responses are constrained by the fixed-macroeconomic convention (fixed GNP), they are sometimes referred to as microeconomic behavioral effects.

Behavioral effects can be broadly characterized as shifts in the timing of transactions and income recognition, shifts between business sectors and entity form, shifts in portfolio holdings, shifts in consumption, and tax planning and avoidance strategies. This section briefly presents a few specific examples that give a flavor for the issues the Joint Committee staff considers when accounting for behavioral effects in revenue estimates.

Probably the most well known example of timing shifts included in revenue estimates is the realization rate for capital gains. When estimating the effect of changes to the capital gains tax rate (or of other aspects of the tax law that may affect the incentive to realize capital gains), the Joint Committee staff assumes that taxpayers will respond by changing the timing of their decision to realize capital gains or losses out of their accrued gains or losses. For instance, in response to the separate rate structure on capital gains that was enacted in 1997, the Joint Committee staff assumed that there would be a relatively large short-term increase in realizations, followed by a smaller long-term increase. The revenues resulting from this dynamic response in realization behavior roughly offset the loss in revenues that would have resulted from applying the rate change to a static forecast of capital gains realizations. The magnitude of the response has been a topic of considerable debate. The Joint Committee staff has published some of its analysis of this issue.¹⁹

Another behavioral response that has received significant attention from public finance economists is the response of individuals to changes in marginal tax rates. When estimating the effect of changes to marginal tax rates, the Joint Committee staff assumes that taxpayers will respond by changing the form, and in some cases the timing, of their income. For example, in response to an anticipated tax rate increase, taxpayers may shift some future compensation into the current period and take more of their compensation as non-taxable (or deferred-taxable) fringe benefits. Taxpayers may shift their portfolios in the direction of less-taxed sources of income, such as tax-exempt bonds, and towards activities that result in itemized deductions. At the same time, businesses may shift organizational form between C-corporations and S-Corporations.

The Joint Committee staff applies behavioral response measures that are based on the empirical estimates available from the extant economics literature and in-house research. However, direct application of empirical evidence from the academic literature is often problematic. Sometimes there is little consensus in the literature on the size of a behavioral

¹⁹ Joint Committee on Taxation, *Explanation of Methodology Used to Estimate Proposals Affecting the Taxation of Income from Capital Gains*, JCS-12-90, March 27, 1990.

response. Even where there is some agreement on the magnitude of the response, it is not always straightforward to apply published empirical estimates for a number of reasons. The estimates are often measured using tax law changes that are of a different scale than the proposals being considered by the Joint Committee staff. The elasticities may have been estimated based on large tax changes whereas the proposals are small, or vice versa. Further, estimates found in the academic literature typically do not distinguish between microeconomic and macroeconomic effects. This is problematic given the fixed GNP convention used in Joint Committee staff estimates and requires that the staff reinterpret the estimate before it is applied. Finally, estimates from the academic literature sometimes apply to more simplified forms of tax policy changes than the types of proposals that are actually under consideration by Congress.²⁰

²⁰ For more information on how the Joint Committee staff accounts for possible taxpayer behavior in preparing revenues estimates see Joint Committee on Taxation, *Methodology and Issues in the Revenue Estimating Process*, JCX-2-95, January 23, 1995. See also pages 4-5 of Joint Committee on Taxation, *Written Testimony of the Staff of the Joint Committee on Taxation at a Hearing of the Subcommittee on Oversight of the House Committee on Ways and Means Concerning Modeling the Economic Effects of Changes in Tax Policy*, JCX-36-02, May 6, 2002.

B. Compliance, Administration and Enforcement

The Joint Committee staff attorneys, accountants, and economists working as a team examine compliance, administration, and enforcement issues that could affect the timing or amount of revenue collected as part of the process of understanding how a proposal would operate. When these issues are likely to be important to a proposal, the Joint Committee staff accounts for their effects in the revenue estimate.

Compliance issues are present in a variety of situations. The Joint Committee staff considers the types of taxpayers affected by a proposal and whether some types of taxpayers (e.g., high-income individuals, low-income individuals, corporations, self-employed, etc.) might more easily comply with its requirements than others. Proposals may require taxpayers to perform a variety of compliance activities including completing complicated calculations, self-reporting amounts of income, and determining the value of an asset without a specific market transaction. The Joint Committee staff investigates the types of information the taxpayer would need to comply and the types of errors they may make when attempting to comply.

The Joint Committee staff considers the clarity of the underlying concepts in a proposal. As an example, when different tax rates were applied to interest and dividend income as part of the Jobs and Growth Tax Relief Reconciliation Act in 2003, the Joint Committee staff assessed how difficult it might be for payors to properly distinguish between each type of income so that taxpayers could report them correctly. Because the distinction between interest and dividend income amounts did not affect the determination of liability prior to the proposal, and because business systems would need to be redesigned to separately track these amounts under the proposal, it became important to allow for a period of uncertainty about the reporting of these amounts. As a result of the difficulty in complying with this provision, payors of dividends and taxpayers were provided a safe-harbor for reporting amounts paid during 2003. This significantly affected the revenue estimate.

Enforcement issues center around the verification of liability (both during and after filing) and the collection of assessments. For example, the Joint Committee staff considers the types of taxpayers affected by the proposal, how easily these same taxpayers can be identified, how quickly the IRS can determine liability, and the level of effort required by the IRS to enforce a proposal. Unless evidence would suggest otherwise, enforcement issues are limited to the groups of taxpayers directly affected. The effectiveness of the applicable penalty regime and the IRS enforcement posture (i.e., whether the IRS routinely waives penalties for a particular issue and how frequently they audit an issue) that would be associated with a proposal are also taken into account. Particular attention is paid to how a penalty regime would likely affect taxpayer behavior and how IRS procedures may accommodate, or negate, the effectiveness of a penalty in compelling compliance. To this end, the Joint Committee staff determines how the IRS administers existing provisions in the tax code to guide their judgments. The Joint Committee staff does not assume that proposed legislation will require the IRS to undertake new enforcement actions or result in a reallocation of resources at the IRS.

Mechanical aspects of proposals may also affect enforcement and are taken into consideration in the revenue estimating process. For instance, proposals that allow self-reporting

tend to have lower compliance and more enforcement issues than proposals that require reporting by disinterested parties.

After determining that compliance, administration, or enforcement issues would likely be present in a proposal, the Joint Committee staff uses a variety of sources to determine how revenue might be affected. The 1988 Taxpayer Compliance Measurement Program (“TCMP”) provides information for issues involving individual taxpayers. Although dated, the file still contains useful information on a number of compliance issues. While the Code has changed significantly since 1988, current compliance and enforcement issues do have analogs to those of earlier years. As a result, the rich detail of the 1988 TCMP continues to have utility for the analysis of proposals. In addition, the Joint Committee staff regularly use the results from more recent compliance studies such as the IRS 2002 compliance study with regard to the Earned Income Credit.

Often the Joint Committee staff uses existing operational information provided by the IRS about their examination, appeal, and litigation activities. On occasion, the Joint Committee staff will acquire issue-specific enforcement information directly from the IRS.²¹ In some areas, such as tax shelters, the Joint Committee staff is frequently briefed by IRS personnel and provided with much confidential information. This information helps the Joint Committee staff gauge the likely compliance, administrative, and enforcement effects of particular proposals.

²¹ For example, the Joint Committee staff recently acquired information from the IRS Art Advisory Panel to better understand proposals that address the valuation of works of art.

C. Distributional Analysis

Distributional analysis is not a legally required task of the Joint Committee staff. However, upon request of Members or committee staff, distributions of certain tax changes are provided as background information. The Joint Committee staff has produced distributional analyses in various forms since the early 1970s. The current distribution methodology dates to 1994. Under this method, the Joint Committee staff provides a distribution by current income group, when sufficient information is available, for legislation affecting the individual income tax, Social Security and Medicare payroll taxes, and excise taxes. Corporate income taxes and estate and gift taxes are not distributed.²²

The measure used in the distributional analysis is the change in liability (taxes paid) for the taxable year. Liability is measured, whenever possible, after any behavioral response related to the tax change. Thus, if a cigarette excise tax rate increase were to reduce cigarette consumption sufficiently, the distribution analysis may actually show a reduction in liability. In addition, liability is measured in nominal amounts over a limited number of years. Although a traditional IRA and a Roth IRA are equivalent in terms of the present value of the tax benefit, their distribution profiles would be significantly different. Finally, as is the case with revenue estimates, the liability measure takes compliance issues into account.

The basic unit of analysis is the tax filing unit or return. Omitted from the analysis are dependent filers and returns with negative income. Changes in tax liability are distributed to taxpayers according to their expanded income. This income classifier begins with Federal adjusted gross income and adds the following:

- Tax-exempt interest;
- Employer contributions for life and health insurance;
- Employer share of Social Security and Medicare payroll tax;
- Workers' compensation;
- Untaxed Social Security benefits;

²² The methodology focuses on who has the legal responsibility to pay a tax. In certain cases, the person or entity that is statutorily liable for certain types of tax payment may be able to shift the cost of that tax to someone else. For taxes for which the incidence shifting between taxpayers is widely accepted, the Joint Committee staff assigns the liability according to that shift. For example, the employer share of payroll taxes is assumed to be borne by employees. In certain cases, it may be clear that the incidence of a tax does not coincide with the person or entity that remits the payment to the Federal government, but there may be substantial uncertainty (or disagreement) as to which taxpayers bear the incidence of the tax. For instance, some economic analysis suggests that corporations may in the long run be able to shift a portion of the corporate tax burden to their employees. However, there is some uncertainty as to the timing and extent of such a shift. For this reason, the Joint Committee staff does not distribute the corporate tax. As far as the estate and gift tax is concerned, it is unclear whether the burden of this tax lies with the decedent or the decedent's heirs. In addition, the base file of the Joint Committee model does not identify which taxpayers died during the year and who their heirs might have been. As with all revenue estimating assumptions and practices not dictated by the budget law, these methodologies are subject to review and potential modification with the availability of new data or based on additional research.

- Insurance value of Medicare benefits (net of Part A Health Insurance tax contributions and Part B premiums paid);
- Alternative minimum tax preference items; and,
- Excluded income of U.S. citizens living abroad.

Yearly distributions are provided for the first five years of the 10-year budget window.²³ The dollar amount distributed for each year includes the effects of phase-ins and phase-outs. In each year the nominal income breakpoints are adjusted based on the forecasted GDP deflator. From time to time the Joint Committee staff has provided distributions by percentiles in addition to standard nominal income categories. A sample distribution analysis of a tax reform follows. These tables show the distributional effects of the conference agreement for H.R. 1836, the Economic Growth and Tax Relief Reconciliation Act of 2001, for calendar years 2001-2006 (Public Law 107-16).

The Joint Committee staff publishes tables showing the distribution of tax liability and of selected tax expenditures under current law annually in the tax expenditure pamphlet.²⁴

²³ In 1993, the Joint Committee staff produced distribution tables that presented five-year annuitized benefits. Prior to 1993, the Joint Committee staff published one-year fully phased in distribution tables. See, for example, Joint Committee on Taxation, *Estimated Budget Effects of the Revenue Provisions of H.R. 2264 (The Omnibus Budget Reconciliation Act of 1993) As Agreed to by the Conferees*, JCX-11-93, August 4, 1993.

²⁴ See, for example, Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2005-2009*, JCS-1-05, January 12, 2005.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2001

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
	Millions	Percent	Billions	Percent	Billions	Percent	Present Law	Proposal
							Percent	Percent
Less than \$10,000	-\$ 75	-1.0	\$ 7	0.4	\$ 7	0.4	8.7	8.6
10,000 to \$20,000	-2,989	-11.5	26	1.5	23	1.4	7.5	6.7
20,000 to 30,000	-5,790	-9.4	62	3.5	56	3.3	13.4	12.2
30,000 to 40,000	-5,674	-6.4	89	5.1	83	4.9	16.1	15.1
40,000 to 50,000	-5,490	-5.4	102	5.9	97	5.7	17.4	16.4
50,000 to 75,000	-11,546	-4.5	256	14.6	244	14.4	19.1	18.3
75,000 to 100,000	-8,488	-3.5	244	13.9	235	13.9	21.7	21.0
100,000 to 200,000	-10,488	-2.6	408	23.3	397	23.5	24.2	23.6
200,000 and over.....	-6,997	-1.3	555	31.7	548	32.4	27.8	27.4
Total, All Taxpayers	-\$57,536	-3.3	\$1,748	100.0	\$1,690	100.0	21.4	20.7

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates a 10-percent bracket, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductible IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest; [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers and taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2002

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
	Millions	Percent	Billions	Percent	Billions	Percent	Present Law	Proposal
							Percent	Percent
Less than \$10,000	-\$ 75	-1.0	\$ 7	0.4	\$ 7	0.4	9.2	9.1
10,000 to \$20,000	-3,596	-13.3	27	1.5	23	1.3	7.6	6.6
20,000 to 30,000	-7,124	-11.3	63	3.4	56	3.2	13.5	12.0
30,000 to 40,000	-6,849	-7.6	91	4.9	84	4.8	16.1	14.8
40,000 to 50,000	-6,198	-5.8	106	5.8	100	5.7	17.5	16.5
50,000 to 75,000	-13,251	-5.0	267	14.5	254	14.4	19.0	18.0
75,000 to 100,000	-10,227	4.0	255	13.9	245	13.9	21.7	20.8
100,000 to 200,000	-14,416	-3.3	442	24.1	427	24.3	24.2	23.4
200,000 and over.....	-16,557	-2.9	578	31.5	562	32.0	27.9	27.1
Total, All Taxpayers	-\$78,294	-4.3	\$1,836	100.0	\$1,758	100.0	21.5	20.6

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates, a 10-percent, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductible IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers and taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2003

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
			Billions	Percent	Billions	Percent	Present Law	Proposal
	Millions	Percent	Billions	Percent	Billions	Percent	Percent	Percent
Less than \$10,000	-\$ 83	-1.1	\$ 8	0.4	\$ 8	0.4	9.7	9.6
10,000 to \$20,000	-3,516	-12.9	27	1.4	24	1.3	7.6	6.6
20,000 to 30,000	-7,135	-11.0	65	3.3	58	3.1	13.6	12.1
30,000 to 40,000	-6,946	-7.5	93	4.8	86	4.6	16.0	14.8
40,000 to 50,000	-6,155	-5.7	108	5.6	101	5.5	17.4	16.4
50,000 to 75,000	-13,554	-4.9	279	14.4	266	14.3	18.9	18.0
75,000 to 100,000	-10,553	-4.0	265	13.7	255	13.8	21.7	20.8
100,000 to 200,000	-15,487	-3.2	479	24.8	464	25.1	24.2	23.4
200,000 and over.....	-17,453	-2.9	609	31.5	591	31.9	28.1	27.3
Total, All Taxpayers	-\$80,882	-4.2	\$1,933	100.0	\$1,852	100.0	21.5	20.6

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates, a 10-percent bracket, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductible IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers and taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2004

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
			Billions	Percent	Billions	Percent	Present Law	Proposal
	Millions	Percent	Billions	Percent	Billions	Percent	Percent	Percent
Less than \$10,000	-\$ 69	-0.9	\$ 8	0.4	\$ 8	0.4	10.0	9.9
10,000 to \$20,000	-3,429	-12.6	27	1.3	24	1.2	7.6	6.6
20,000 to 30,000	-7,121	-10.8	66	3.3	59	3.1	13.6	12.2
30,000 to 40,000	-6,964	-7.3	96	4.7	89	4.6	16.0	14.8
40,000 to 50,000	-6,320	-5.8	110	5.4	103	5.3	17.4	16.4
50,000 to 75,000	-15,049	-5.2	288	14.2	273	14.2	18.7	17.8
75,000 to 100,000	-12,913	-4.6	279	13.8	266	13.8	21.5	20.5
100,000 to 200,000	-22,095	-4.3	512	25.2	490	25.3	24.1	23.0
200,000 and over.....	-21,671	-3.4	642	31.6	620	32.1	28.2	27.3
Total, All Taxpayers	-\$95,630	-4.7	\$2,028	100.0	\$1,932	100.0	21.6	20.6

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates, a 10-percent bracket, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductible IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2005

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
			Billions	Percent	Billions	Percent	Present Law	Proposal
	Millions	Percent	Billions	Percent	Billions	Percent	Percent	Percent
Less than \$10,000	-\$ 76	-1.0	\$ 8	0.4	\$ 8	0.4	10.1	10.0
10,000 to \$20,000	-3,867	-14.0	28	1.3	24	1.2	7.6	6.5
20,000 to 30,000	-7,937	-11.6	68	3.2	60	3.0	13.7	12.1
30,000 to 40,000	-7,720	-7.9	98	4.6	90	4.4	16.0	14.7
40,000 to 50,000	-6,945	-6.2	112	5.3	105	5.2	17.2	16.2
50,000 to 75,000	-16,630	-5.5	303	14.2	286	14.1	18.7	17.6
75,000 to 100,000	-14,709	-5.1	287	13.5	273	13.5	21.4	20.3
100,000 to 200,000	-24,654	-4.5	547	25.7	522	25.8	24.0	22.9
200,000 and over.....	-21,182	-3.1	678	31.9	657	32.4	28.3	27.4
Total, All Taxpayers	-\$103,720	-4.9	\$2,129	100.0	\$2,025	100.0	21.6	20.6

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates, a 10-percent bracket, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductibles IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

DISTRIBUTIONAL EFFECTS OF THE CONFERENCE AGREEMENT FOR H.R. 1836⁽¹⁾

Calendar Year 2006

Income Category ⁽²⁾	Change in Federal Taxes ⁽³⁾		Federal Taxes ⁽³⁾ Under Present Law		Federal Taxes ⁽³⁾ Under Proposal		Effective Tax Rate ⁽⁴⁾	
			Billions	Percent	Billions	Percent	Present Law	Proposal
	Millions	Percent	Billions	Percent	Billions	Percent	Percent	Percent
Less than \$10,000	-\$ 76	-0.9	\$ 8	0.4	\$ 8	0.4	10.4	10.3
10,000 to \$20,000	-3,789	-13.6	28	1.2	24	1.1	7.6	6.6
20,000 to 30,000	-7,853	-11.4	69	3.1	61	2.9	13.7	12.2
30,000 to 40,000	-7,839	-7.9	99	4.4	91	4.4	16.0	14.7
40,000 to 50,000	-7,570	-6.5	116	5.2	108	5.2	17.2	16.0
50,000 to 75,000	-18,755	-6.0	313	14.0	294	14.0	18.6	17.5
75,000 to 100,000	-17,212	-5.8	297	13.3	280	13.3	21.3	20.0
100,000 to 200,000	-30,208	-5.1	588	26.3	558	26.6	23.9	22.7
200,000 and over.....	-44,177	-6.1	719	32.1	675	32.1	28.3	26.6
Total, All Taxpayers	-\$137,476	-6.1	\$2,238	100.0	\$2,100	100.0	21.7	20.3

Source: Joint Committee on Taxation
Detail may not add to total due to rounding.

- (1) Includes provisions affecting the child credit, individual marginal rates, a 10-percent bracket, limitation of itemized deductions, the personal exemption phaseout, the standard deduction, 15-percent bracket and EIC for married couples, deductibles IRAs, and the AMT.
- (2) The income concept used to place tax returns into income categories is adjusted gross income (AGI) plus: [1] tax-exempt interest, [2] employer contributions for health plans and life insurance, [3] employer share of FICA tax, [4] worker's compensation, [5] nontaxable Social Security benefits, [6] insurance value of Medicare benefits, [7] alternative minimum tax preference items, and [8] excluded income of U.S. citizens living abroad. Categories are measured at 2001 levels.
- (3) Federal taxes are equal to individual income tax (including the outlay portion of the EIC), employment tax (attributed to employees), and excise taxes (attributed to consumers). Corporate income tax and estate and gift taxes are not included due to uncertainty concerning the incidence of these taxes. Individuals who are dependents of other taxpayers with negative income are excluded from the analysis. Does not include indirect effects.
- (4) The effective tax rate is equal to Federal taxes described in footnote (3) divided by: income described in footnote (2) plus additional income attributable to the proposal.

D. Tax Models and Updates

The Joint Committee staff uses a wide variety of economic and statistical models to estimate the revenue impact of changes in tax laws. The primary source of tax data for the models comes from the SOI division within the IRS. However, the Joint Committee staff receives data from multiple sources from both government agencies and non-government organizations. For example, the staff receives the Survey of Income and Program Participation and the Current Population Survey from the Bureau of the Census. An example of a non-government source is information on insurance companies compiled by A.M. Best.

Some of the models use large micro-data files, while others are smaller and spreadsheet based. Some models reside on a desktop computer, while others reside on “servers” and are simultaneously available to several staff members. The complexity and scope of a model are determined by several factors including the amount and type of data available, the level of interest in the model, and the level of complexity associated with the questions being asked of the model. Ultimately, the complexity of a model resides in the discretion and best judgment of the Joint Committee staff.

The Joint Committee staff uses several highly developed microsimulation tax models. These are the Individual Model, the Corporate Model, and the Estate and Gift Model. In addition, the staff is beginning to use panel-based models of individual taxpayers.

1. The individual model

The largest model used by the Joint Committee staff is the individual model. This model is a microsimulation model based on a stratified sample of individual tax returns submitted to the IRS. A tax model simulation works by applying the tax laws and parameters to each return on the sample to recreate that return’s Federal individual income tax liability for a given year. The model calculates regular tax liabilities and alternative minimum tax liabilities when appropriate. In addition, the model calculates liabilities from FICA and Self-Employment Contribution Act (“SECA”) taxes. The model generally assumes that taxpayers make optimal choices regarding such decisions as claiming itemized deductions or claiming credits. Then, by changing rules or parameters reflected by a tax proposal, each return’s liability is recalculated. This produces an estimated change in liability for that proposal.

The current version of the individual model is based on the 2001 Individual and Sole Proprietorship file produced by SOI. The stratified sample contains approximately 192,000 individual tax returns that, when weighted, represent the 130.6 million individual tax returns filed with the IRS for 2001.

Each record in the sample contains nearly all of the information from a return’s Form 1040 and any accompanying forms and schedules. Added to each record are several additional data items. The year-of-birth and gender for each taxpayer and dependent is obtained from an exact match to data from the Social Security Administration. The staff augments the data with exact links to several Information Return types. The most important of these links is to W-2 Information Returns. In addition to W-2s, the individual model contains Social Security benefits received by individuals from an exact link to SSA-1099 and RRB-1099 Information Returns.

Information on IRA accounts is obtained from links to 5498 Information Returns. Links to other information return types are possible and are performed when needed.

The individual model contains, through statistical imputations, several additional pieces of information. The tax data is augmented with statistically matched data from the Current Population Survey.²⁵ In particular, the statistical match provides data on health insurance coverage, income or benefits from non-taxable sources, and other demographic information. In addition, the match imputes non-filers to the model.²⁶ Itemized expenses only appear on returns that claimed itemized deductions on Schedule A, these expenses are imputed to non-itemizers. The staff also imputes expenses for higher education and amounts for IRA contributions that would be made under alternative limits. Finally, as explained further below, the data (tax and non-tax) is extrapolated to reflect forecasted income and expenses during the budget period (currently 2005 to 2015).

The current individual model is based on data from 2001 individual tax returns. Given the amount of time needed to build an individual model, it would not be prudent to build a new model each time a new cross-section data file is received. Further, OTA does the direct matching of SOI and Social Security databases, as well as other developmental work for a new tax model; the Joint Committee staff builds on OTA's development efforts. It is therefore necessary to coordinate choice of model years with OTA.²⁷

The extrapolation process

Typically, the Joint Committee staff receives from the CBO new economic assumptions for the upcoming budget period in December of each year. In particular, CBO provides forecasted estimates of National Income and Product Account ("NIPA") variables for each year in the budget window, including baseline individual income tax receipts. In addition, CBO provides an estimate of positive capital gains (in AGI) and an estimate of total individual Federal income tax liability. The Joint Committee staff also obtains demographic estimates from the Census Bureau. The Social Security Administration provides estimates of certain items relating to FICA and SECA taxes, as well as estimates of Social Security benefits received.

²⁵ Tax proposals often require information about the population that is not reported on tax returns. For example, to estimate a tax proposal designed to enhance health insurance coverage would require information on health insurance currently being purchased or obtained. One common method for dealing with this "missing" information is statistical matching. This procedure involves taking records on the base data file (e.g., the sample of tax returns) and statistically linking or matching them to records on another data file that contains the desired information (e.g., the Current Population Survey). The income and demographic information common to both files is used to do the linking.

²⁶ In general, non-filers are (usually) people with incomes below the filing requirement threshold.

²⁷ In selecting a model year to serve as the base for the individual models, estimating staffs generally try to take into account whether the year is likely to be typical or "atypical" with respect to the business cycle. From this perspective, 2001 may not seem to be an ideal year; however, the 2001 SOI file contains specially constructed samples for a number of recently enacted tax credit provisions.

The Joint Committee staff takes these assumptions and generates new growth rates and targets for key variables on the individual tax model, such as wages in adjusted gross income. As a general statement, the extrapolation process is designed to produce a file of tax returns that would be expected in a future year. For example, the Joint Committee staff targets the number of tax returns by filing status. The Joint Committee staff targets four income items separately by income class: wages, dividends, interest, and positive capital gains. Additional income targets include total Schedule C income and losses, total Schedule E income and losses, and total Social Security and Railroad Retirement income. The Joint Committee staff currently fits the individual model to 138 economic and demographic targets. The final targets are consistent with the economic forecasts from CBO. By the end of January, the extrapolation process is complete and the individual tax model is ready for processing.

2. The corporate model

The corporate model is a microsimulation model that derives taxable income, income tax, tax credits, and the alternative minimum tax for all corporations. The data is derived from the SOI corporate files that include all corporate income tax forms including S corporations, RICs and REITS. The sample is a stratified sample statistically derived to represent the overall corporate sector when weighted. The sampling rate increases with asset size and reaches 100 percent for corporations with assets in excess of ten million dollars. The sample size varies from year to year from approximately 80,000 in 1988 to over 140,000 in 2001.

The corporate model is similar in design and structure to the individual model. The model simulates the corporate income tax by calculating the current law and proposed law corporate tax liabilities across a sample of tax returns. Unlike the individual model, the corporate model can be run on either a full cross-section of sampled returns, or on a panel of corporate returns for any combination of tax years from the period 1987 to 2001. The panel aspect of the model is important for capturing the inter-temporal nature of the corporate income tax. For example, the model can capture amounts of net operating losses that are carried forward or carried back.

Many changes that affect corporate taxation also affect other forms of business entities. For example, changes in depreciation rules can affect all forms of business. As a result, the corporate model is supplemented with a variety of modules and databases. The supplemental sources include a depreciation model, a file of partnership returns, and data on sole proprietors and farmers.

3. The estate and gift model

The estate and gift model consists of an estate tax calculator applied to a sample of estate tax returns. The estate tax returns, provided by SOI, represent the population of those returns filed in 2001. The returns report on estates of decedents who died during 2000 and 2001. The returns are adjusted each year in the budget period to track demographic profiles and wealth targets for the expected estate tax filing population. The stratified sample contains approximately 10,800 estate tax returns that when weighted represent the approximately 108,000 estate tax returns filed with the IRS in their 2001 processing year. Each record in the sample contains all of the items reported on the estate tax return.

4. Individual panel models

To facilitate estimating certain inter-temporal aspects of individual tax laws and changes to those laws, the Joint Committee staff has a copy of an individual income tax panel model developed by OTA and SOI. The model consists of a panel of tax returns from 1987 to 1996. The panel started with approximately 88,000 non-dependent returns filed for tax year 1987. SOI then tried to capture the individual tax returns, if any, filed by these same taxpayers in 1988 and in every subsequent tax year through 1996. SOI has started to build a new panel of individual tax returns beginning with the 1999 tax year. The panel is currently being used by the Joint Committee staff and contains records through 2001.

E. Technical Corrections

From time to time enacted tax legislation may not exactly reflect the intent of the legislators. When this occurs, legislators may seek a technical correction to fix the statutory language.

The Joint Committee staff defines a technical correction as legislation that is designed to correct errors in existing law in order to fully implement the intended policies of previously enacted legislation. The principal factor in determining whether a provision is technical is the original intent of the underlying legislation. Once it is determined that the existing statute does not properly implement legislative intent, and that the proposed change conforms to and does not alter the intent, the provision is deemed to be technical.²⁸

The Joint Committee staff does not provide estimates of the revenue effect of technical corrections. This convention stems from the view that the original revenue estimate reflects the intent of the legislation. Therefore, an estimate of the correcting provision would be a double counting of the effect of the original policy. Technical corrections occurring many years after the enactment of the original legislation receive the same treatment as technical corrections for recent legislation.

While the Joint Committee staff does not estimate the effect of technical corrections for the purposes of the legislative process, it recognizes that the persistence of an uncorrected error will cause actual receipts to deviate from that which would have been predicted given the original intent. The correction for this deviation should be properly reflected in the projections of the annual budget baseline. Subsequent enactment of the technical correction would then result in an opposite movement in the budget baseline.

²⁸ It is not relevant to the determination whether the underlying error is one of commission or omission or whether it is substantive or merely clerical. The determination involves the House Ways and Means Committee and Senate Finance Committee tax staffs, the Joint Committee staff, and the Treasury staff. The IRS staff may also be involved. A simple example of a technical error occurs when the enacted statutory language is in conflict with both the markup document used in committee deliberation and with the committee or conference report that accompanied the passage of the bill.