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MODELING THE ECONOMIC EFFECT OF CHANGES IN TAX POLICY

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS
HOUSE OF REPRESENTATIVES

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MODELING THE ECONOMIC EFFECT OF CHANGES IN TAX POLICY

TUESDAY, MAY 7, 2002

HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON OVERSIGHT,
Washington, DC.

The Subcommittee met, pursuant to notice, at 2:02 p.m., in room 1100 Longworth House Office Building, Hon. Amo Houghton (Chairman of the Subcommittee) presiding.

[The advisory announcing the hearing follows:]

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS

SUBCOMMITTEE ON OVERSIGHT

FOR IMMEDIATE RELEASE
April 30, 2002
No. OV–11

Contact: (202) 225–7601

Houghton Announces Hearing on Modeling the Economic Effect of Changes in Tax Policy

Congressman Amo Houghton (R–NY), Chairman, Subcommittee on Oversight of the Committee on Ways and Means, today announced that the Subcommittee will hold a hearing on modeling the economic effect of changes in tax policy. **The hearing will take place on Tuesday, May 7, 2002, in the main Committee hearing room, 1100 Longworth House Office Building, beginning at 2:00 p.m.**

In view of the limited time available to hear witnesses, oral testimony at this hearing will be from invited witnesses only. Witnesses will include Lindy Paull, Chief of Staff of the Joint Committee on Taxation (JCT) and the Honorable R. Glenn Hubbard, Chairman of the Council of Economic Advisers. However, any individual or organization not scheduled for an oral appearance may submit a written statement for consideration by the Committee and for inclusion in the printed record of the hearing.

BACKGROUND:

The JCT and the U.S. Department of the Treasury, Office of Tax Analysis (OTA), provide revenue estimates to inform policymakers' decisions on contemplated changes in tax policy. Prior to reporting a tax legislative measure to the U.S. House of Representatives, the Committee on Ways and Means must obtain a revenue estimate of each proposal.

The JCT and OTA economists rely on sophisticated economic models and assumptions about future economic conditions to arrive at conclusions about the revenue effect of tax legislative proposals up to 10 years into the future. The workings of these models and the nature of economists' assumptions are therefore important to understanding the tax legislative process. These offices generally rely on the work of the Congressional Budget Office or the Office of Management and Budget, as well.

Some economists have argued that it would improve the accuracy of the estimating process if the JCT and OTA took into account certain macroeconomic effects that are likely to result from changes in tax rates on businesses and individuals. Others have argued that it would be too difficult to model these effects with an acceptable degree of accuracy.

In announcing the hearing, Chairman Houghton stated: "Looking into the future is next to impossible. However there are trends and economic roadmaps we can use to more scientifically tell us probabilities. To have an understanding of legislation one must use these methods. There is no alternative other than to fly blind."

FOCUS OF THE HEARING:

The Subcommittee will review the economic models and assumptions that are used for the current estimating process, and explore ways to improve overall forecasting and analysis regarding legislation before the Committee on Ways and Means and Congress.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:

Please Note: Due to the change in House mail policy, any person or organization wishing to submit a written statement for the printed record of the hearing should send it electronically to *hearingclerks.waysandmeans@mail.house.gov,* along with a fax copy to (202) 225–2610 by the close of business, Tuesday, May 21, 2002. Those filing written statements who wish to have their statements distributed to the press and interested public at the hearing should deliver their 200 copies to the Subcommittee on Oversight in room 1136 Longworth House Office Building, in an open and searchable package 48 hours before the hearing. The U.S. Capitol Police will refuse sealed-packaged deliveries to all House Office Buildings.

FORMATTING REQUIREMENTS:

Each statement presented for printing to the Committee by a witness, any written statement or exhibit submitted for the printed record or any written comments in response to a request for written comments must conform to the guidelines listed below. Any statement or exhibit not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

1. Due to the change in House mail policy, all statements and any accompanying exhibits for printing must be submitted electronically to *hearingclerks.waysandmeans@mail.house.gov,* along with a fax copy to (202) 225–2610, in Word Perfect or MS Word format and MUST NOT exceed a total of 10 pages including attachments. Witnesses are advised that the Committee will rely on electronic submissions for printing the official hearing record.

2. Copies of whole documents submitted as exhibit material will not be accepted for printing. Instead, exhibit material should be referenced and quoted or paraphrased. All exhibit material not meeting these specifications will be maintained in the Committee files for review and use by the Committee.

3. Any statements must include a list of all clients, persons, or organizations on whose behalf the witness appears. A supplemental sheet must accompany each statement listing the name, company, address, telephone and fax numbers of each witness.

Note: All Committee advisories and news releases are available on the World Wide Web at *http://waysandmeans.house.gov*.

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call (202) 225–1721 or (202) 226–3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Chairman HOUGHTON. Good afternoon, ladies and gentlemen. We are delighted to have you here, Ms. Paull, Mr. Hubbard.

I would like to make a few comments, and then my associate, Mr. Coyne, will make his comments.

As we all know, despite the fact that I used to be in the glass business, looking into a crystal ball is not the easiest thing in the world. However, there are trends and there are economic road maps we can use to more scientifically tell us the probabilities. So to have an understanding of legislation, you got to use all sorts of different methods. There is no alternative other than to just fly blind, and, of course, we don't want to do that.

Certainly, it is not realistic to expect that tax revenue estimates will faithfully predict the precise outcome of every tax proposal. That is just not going to happen. It is understood that your estimates represent the best judgment of experienced tax professionals and economists on your staffs, and they are not crystal ball predictions of the future. Nevertheless, the methods that are used to arrive at these estimates fundamentally affect tax policy for all of us. It makes sense to use the best tools available to make the best possible predictions.

So because of the importance of your predictions in forming tax policy, it is also important that the methods behind them are publicly disclosed to the fullest extent possible. I understand you have disclosed a great deal of information about the estimating process, and I want to specifically acknowledge your willingness to work with congressional staff to understand individual estimates where the need arises.

So today we will hear from Ms. Paull—we are delighted to have you here—the Chief of Staff of the Joint Committee on Taxation. I don't think there is anyone in the city who understands these issues better than you, Ms. Paull. You may disagree with me, but I feel that very strongly.

In addition, we are honored by the presence of Glenn Hubbard, the Chairman of the President's Council of Economic Advisers (CEA). Mr. Hubbard was the Chief Economist in charge of estimating tax proposals for the U.S. Department of the Treasury during the first Bush administration and is wonderfully qualified to address this issue.

So, we are delighted that you are here, and I would like now to yield to Mr. Coyne.

[The opening statement of Chairman Houghton follows:]

Opening Statement of the Hon. Amo Houghton, a Representative in Congress from the State of New York, and Chairman, Subcommittee on Oversight

Looking into the future is next to impossible. However there are trends and economic roadmaps we can use to more scientifically tell us probabilities. To have an understanding of legislation one must use these methods. There is no alternative other than to fly blind.

Certainly, it is *not* realistic to expect that the tax revenue estimates will faithfully predict the precise outcome of every tax proposal. It is understood that your estimates represent the best judgment of experienced tax professionals and economists; they are not crystal ball predictions of the future. Nevertheless, the methods that are used to arrive at these estimates fundamentally affect tax policy. It makes sense to use the best tools available to us to make the best possible predictions.

Because of the importance of your predictions in forming tax policy, it is also important that the methods behind them be publicly disclosed to the fullest extent possible. I understand that you have disclosed a great deal of information about the estimating process, and I want to specifically acknowledge your willingness to work with Congressional staff to understand individual estimates where the need arises.

Today we will hear from a familiar face, Lindy Paull, the Chief of Staff of the Joint Committee on Taxation. Although she is not an economist, by training, I doubt there is anyone in this city who understands this issue better than you, Ms. Paull. In addition, we are honored by the presence of Glenn Hubbard, the Chairman of the President's Council of Economic Advisors. Mr. Hubbard was the chief economist in charge of estimating tax proposals for the Treasury Department during the first Bush Administration, and he is eminently well qualified to address this issue.

I am pleased to yield to our ranking Democrat, Mr. Coyne.

Mr. COYNE. Well, thank you, Mr. Chairman, and thank you for holding these hearings today.

Revenue estimates are prepared by the Joint Committee for tax bills approved by the Committee on Ways and Means. These revenue estimates measure the anticipated changes in Federal receipts that result from proposed legislative changes in the Internal Revenue Service (IRS) Code. This information is very important to the development of tax policy, as we all know.

It has been suggested that in making revenue estimates the Joint Committee should take into account the projected macroeconomic effects that would result from a particular tax proposal. As we explore this issue today, I think we will find that the dynamic scoring may sound good in theory but that it would be extremely problematic in practice.

I look forward to the testimony of the Chief of Staff of the Joint Committee on Taxation on this issue and also the views of the administration. I know that we all benefit from the in-depth understanding of the methodology used by the Joint Committee in creating the revenue estimates that the Committee uses in marking up tax bills.

Thank you, Mr. Chairman.

[The opening statement of Mr. Coyne follows:]

Opening Statement of the Hon. William Coyne, a Representative in Congress from the State of Pennsylvania

Thank you, Mr. Chairman, for holding these hearings. Revenue estimates are prepared by the Joint Committee on Taxation for tax bills approved by the Committee on Ways and Means. These revenue estimates measure the anticipated changes in Federal receipts that result from proposed legislative changes to the Internal Revenue Code. This information is very important to our development of tax policy.

It has been suggested that, in making revenue estimates, the JCT should take into account the projected macroeconomic effects that would result from a particular tax proposal.

As we explore this issue today, I think we will find that "dynamic" scoring may sound good in theory but that it would be extremely problematic in practice. I look forward to the testimony of the Chief of Staff of the Joint Committee on Taxation, Lindy Paull, on this issue and also the views of the Administration.

I know that we all benefit from an in-depth understanding of the methodology used by the JCT in creating the revenue estimates that the Committee uses in marking-up tax bills. Thank you, Mr. Chairman.

Chairman HOUGHTON. Thank you very much, Mr. Coyne. Well, now we will call our panel, Ms. Paull and Mr. Hubbard. Will Mr. Hubbard begin?

STATEMENT OF HON. R. GLENN HUBBARD, CHAIRMAN, COUNCIL OF ECONOMIC ADVISERS

Mr. HUBBARD. Sure. Thank you very much, Mr. Chairman.

I will be relatively brief and make a few observations about dynamic scoring in my experience as a Treasury Department official and then also the Administration's view on dynamic scoring.

As you know, the staff of the Joint Committee and of the Treasury Department has for many years looked at behavioral effects of tax policy. That is not in and of itself easy. Having been the chief stargazer on that at the Treasury Department, I can attest to that.

What I would like to do today is spend the time on the issue that you teed up in your remarks, and Mr. Coyne did as well, which is the issue of macroeconomic or aggregate effects, what I think popularly goes by the term dynamic scoring. Here, I think what economists usually have in mind is, can we somehow adjust revenue estimates that incorporate changes in the level of output in the economy and how that filters through the tax system, through the tax basis for earned income, for corporate profits, dividends, and so on?

I would really just like to make five simple observations with you, and let me start with the simplest but perhaps most important.

At a conceptual level, it is very hard to argue against having dynamic scoring. The idea is, in and of itself, correct, that if we are trying to do the best possible job of providing information to you as decisionmakers, we need to give you all of the information that we can. That would mean evaluating the economic growth effects of tax proposals and trying to suggest to you how we think those tax proposals would affect receipts through economic growth.

Give you an example. If we were to tear up the current Tax Code and move to a broad-based consumption tax, I think most economists would suggest that would improve economic performance. A consensus estimate might be a level increase once and for all in Gross Domestic Product (GDP) of about 4 percent. That would mean that every year we would have more wages, we would have more dividend and interest income and so on, and generate additional revenue. It is difficult to estimate these things, as Mr. Coyne himself teed up, but that doesn't invalidate the basic point.

A second point, dynamic scoring, I think of as simply representing additional information about the tax policy process. In all of your minds as you think about tax policy, you are interested in no small part because you believe it will affect economic activity. You believe it will affect incentives to work, to save, to invest, to start a business, and so on. To be specific, I think it is straightforward to conduct a revenue estimate using existing methods, i.e., what the Joint Committee does now or the Treasury Department would do for us in the Administration, but to supplement those estimates with what I call, for lack of a better term, an impact statement that would give to you our views as economists of what the aggregate consequences are for the economy and for revenue.

So, point one, it is conceptually correct. Point two, we need an impact statement. Now, what is point three? Dynamic scoring simply doesn't make sense for every proposal. I don't know how many proposals the Joint Committee estimates for revenue in a year, maybe 1,000, over 4,000. I am sure the Treasury Department would have similarly large numbers. Many policy changes, while they may be very important, arguably have a trivial impact on the economy. So if you were to think about dynamic scoring as something useful, you would want to restrict it to quite major exercises like, for example, the tax cut the President proposed and you enacted. I think of this as nothing more than a benefit cost test: Do the dynamic scoring to provide you information when you think the benefits of that information exceed the cost.

The fourth simple observation I would like to offer you really just builds on the previous two that I gave you. Because not every proposal you are going to consider actually requires or would benefit from dynamic scoring and because macro-consequences are really a supplement to, not a substitute for, the revenue estimates you get from the Joint Committee. I don't believe there is a need to imbed dynamic scoring in the budget process itself.

Now let me be specific there. If we had PAY–GO rules, which we don't at the moment, but if we did I would suggest you don't want

dynamic scoring for PAY–GO per se. However, what you wanted is information for you in deciding which proposals to accept.

The final observation I would offer you is obvious, although many things economists say fall into that category perhaps. Dynamic scoring is actually quite hard. When you think about the methodologies that economists use, there are many different approaches to modeling tax policy, and while each of these models may have some strong attributes, they may have to give different answers. I would think that it is quite important for you to give a flavor for that and consider a range of estimates.

To give you an example, suppose we were to imagine a proposal that would eliminate the double taxation of dividend incomes and suppose that we were to decide that this proposal were to be enacted this year but not become effective for two more years. We would want a model that somehow took into effect the announcement effect of that policy on asset prices, on savings and investment, and GDP. Quite frankly, many models used for commercial purposes don't do that. I think it is very important to acknowledge that different modeling strategies would give you different answers, but I still see great value for you in having a range of estimates that inform your decisions.

So just revisiting these five simple observations, I think dynamic scoring is something you should take very seriously as a concept. I think you have to realize that it can't and should not be done all the time. I think you need to take into account the fact that there are different models that might give slightly different answers. What you really need is an impact statement that helps you make the decisions that you do. I would refer you to work, that you are already I am sure well aware of, the Joint Committee's exercise in the mid-nineties that led to a 1997 Joint Committee pamphlet, and the current work being done by the Joint Committee and by this Committee on modeling.

Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Hubbard follows:]

Statement of the Hon. R. Glenn Hubbard, Chairman, Council of Economic Advisers

Chairman Houghton and members of the Subcommittee, it is a pleasure to appear before you today to discuss the important issue of budget scoring for tax proposals. Under current practice, the Joint Committee on Taxation (JCT)—the provider of revenue estimates to the U.S. Congress for tax legislation either enacted or under consideration—and the Department of the Treasury—which has a comparable role for the Administration—takes into consideration a wide variety of behavioral microeconomic responses to the incentives resulting from tax policies. The JCT examines the effect on realizations of a change in capital gains tax rates, or the shift in consumption of gasoline in response to gasoline excise taxes.

The purpose of my remarks today is to discuss the notion of expanding the scope of the revenue estimating process to include in some way the effect of tax policy on the macroeconomy itself—sometimes called "dynamic scoring"—including any such macroeconomic effects on receipts. Under a dynamic scoring approach, revenue estimates would explicitly incorporate not just individual or firm-level responses to tax-based incentives, but also changes in the overall scale of economic activity as a result of the tax policy. That is, revenue estimates for tax changes might incorporate current and future changes in the level of Gross Domestic Product and tax bases such as aggregate earned income, aggregate corporate profits, dividends, and so forth.

Five observations frame the debate over dynamic scoring. First, the idea of dynamic scoring is conceptually correct. The basic notion in revenue estimation is to calculate the yearly revenue—from all relevant sources—over the appropriate budg-

et window under current law. To do so requires evaluating the economic activity that would prevail using current tax rules, redoing the calculation using the tax code as modified by the proposal (which clearly requires knowing the economic activity—including all relevant tax bases—under the alternative tax rules), and comparing—on a year-by-year or other basis—the revenue in the latter to the revenue in the former. In doing so, changes in revenues from *all* sources would enter the revenue estimate without constraints such as a fixed macroeconomic baseline. So, for example, if one were to switch to a broad-based consumption tax, some economists estimate that the capital stock would rise by 14 percent over the first eight years, with GDP rising by 4 percent. The increase in wage, dividend, interest, and other sources of income embodied in these macroeconomic changes would be one source of additional revenue. Of course, in practice estimating these steps is fraught with difficulty. Still, these operational challenges, to which I will return below, should not disguise the basic objectives.

The second observation is that dynamic scoring represents additional information about the tax policy process. As you know, a cost of the tax system is the distortion that taxes cause to incentives to undertake a wide range of economic activities—work, saving, investment, and so forth. The distortion causes GDP to be lower than it would be in the absence of the tax system, or at least lower than it would be in the presence of a more efficient tax system. Accordingly, a dynamic scoring process would reflect the reduction in deadweight loss (the economic activity foregone due to tax distortions) and increase in GDP as one part of the revenue consequences of the tax policy. For this reason, adding this information aids policymakers in making the right choices for the economy, and policy decisions should reflect economic effects as well as revenue effects.

More mechanically, it is straightforward to conduct a revenue estimate using existing methods *and* supplement these estimates with an "impact statement" that shows the macroeconomic consequences and the possible related revenue effects.

The third observation is that dynamic scoring does not make sense for every tax proposal. For certain tax policy changes—substantial reductions in marginal tax rates, broad-based investment incentives, *etc*.—there are likely to be shifts in aggregate labor supply, saving, entrepreneurial ventures, composition of compensation, investment, and so forth substantial enough to alter both the path of the economy, and the level and time path of receipts. As an economist, I think of this in a benefit-cost framework. Dynamic scoring is harder, and thus more "costly" in some general sense. For this reason it should be restricted to those circumstances in which it has real costs for the macroeconomy. We should examine the impact on the macroeconomy in those circumstances in which conventional scoring rules can reasonably be expected to give a misleading picture of both the overall revenue effects over the relevant budget window, and the growth or transition of revenues on a year-by-year basis.

The fourth observation builds on the previous two: Because not every proposal merits full-blown dynamic scoring, and because the macroeconomic consequences can be viewed as a supplement to (as opposed to a substitute for) current procedures, there is no need to embed dynamic scoring in the existing budget process. Instead, for those proposals that meet the two criteria discussed earlier, the conventional scoring can be supplemented with an impact statement. This will be useful in two ways: Policies that merit an impact statement will stand out from other tax changes, and the impact statement will be useful in guiding priorities and decision-making. Accordingly, inclusion of an impact statement will likely have a real effect on the policy process.

The final observation is that dynamic scoring of tax proposals is difficult. The empirical tax and economic modeling capability necessary is quite demanding. To get a flavor of the challenge, consider dynamic scoring of a proposal to eliminate the double-taxation of dividend income. Specifically, suppose that the policy were to be enacted this year, but not become effective for two years. And, suppose further that full implementation of the proposal was phased in over a period of several years.

A model suitable for dynamic scoring would necessarily need to permit the *announcement* of the policy to affect corporate financial policy and investment, household saving and portfolio decisions, and the resulting macroeconomic consequences for interest rates, equity prices, saving, investment, and GDP. Further, the model necessary would distinguish between the ultimate effect when the policy had been fully phased in, and the transition path as the policy is incrementally implemented. Economic projections informing the revenue consequences on a year-by-year basis should reflect households' and businesses' judgments regarding the timing of their activities in response to not only the tax incentives, but also the economic environment—which, of course, is in part influenced by their decisions. Obviously, this is

a difficult task. (Of course, the ease of a calculation does not make it correct; the difficulty of dynamic scoring is a not, per se, an indictment of its desirability.)

Given the inherent difficulties, one can anticipate that different modeling strategies will yield alternative estimates. Some view this as an insurmountable impediment to the entire notion. In contrast, I see no reason why multiple impact statements might not be produced using a variety of modeling techniques for any single tax proposal.

Revisiting the conventions used for evaluating tax proposals is a valuable exercise. I thank the committee for holding this hearing. More generally, I think it is important to recognize the history of efforts in this area by this committee, the Committee on Ways and Means, the Joint Committee on Taxation through its 1997 Symposium on Tax Modeling, and many others. The Administration looks forward to working with Congress on this issue.

Thank you, Mr. Chairman, and I look forward to discussing with you this important topic.

Chairman HOUGHTON. Thank you, Mr. Hubbard. Ms. Paull?

STATEMENT OF LINDY L. PAULL, CHIEF OF STAFF, JOINT COMMITTEE ON TAXATION

Ms. PAULL. Thank you, Chairman Houghton, Mr. Coyne, Members of the Committee. Thank you for inviting us to visit with you today on the subject of dynamic scoring.

I have fairly lengthy written testimony that I would like to summarize for you and have the entire testimony submitted for the record.

This is one of those unusually obscure subjects, kind of an inside-the-Beltway type topic which involves the methodology we use to generate revenue estimates of proposed changes in the tax law. The Joint Committee staff is responsible for making those estimates under the Budget Act, and in recent years we have been estimating over 4,000 proposals a year.

The staff is continuously striving to improve the revenue-estimating process, and in doing that we tend to be guided by three principles: one, to produce a process that is going to provide consistently accurate estimates, a process that is viewed as fair and impartial, and the challenge of our staff is to keep abreast of the latest economic work and improve our methodology based on the consensus view of that economic work.

An area of our work that has produced much confusion is the extent to which our estimates incorporate behavioral effects. We have always incorporated behavioral effects into our microeconomic estimates. That is to say, our estimates, our revenue estimates take into account numerous behavioral effects, and they are not static from that standpoint. For example, if we were to estimate a proposal to increase excise taxes, we would incorporate into that estimate the behavioral effect that sales of the product would diminish. So from that standpoint, our estimates are not static.

It is worth repeating because we often get labeled as having static estimates, but the further step of incorporating macroeconomic effects into our estimates is not something that we have been doing, and that is the kind of effects that Mr. Hubbard was describing. That is, for example, the possible impact of a major tax proposal on the overall economy or on investment and savings and whether or not somebody would work more.

Since 1997, the Joint Committee staff has been working on developing a macroeconomic growth model for this purpose. We have gained access to several other models, macroeconomic models, which we have described more fully in my written testimony.

It is just worthy to note, however, that there are significant uncertainties that remain with respect to our ability to provide the type of information that Mr. Hubbard was describing that we would like to provide to you as a supplement to our revenue estimates, but we still have a number of uncertainties that need to be addressed further in order to be able to provide that information.

Our goal is to be able to comply with the House rule and to be capable of providing a supplemental analysis of what the macroeconomic effects would be for a major—not a, you know, run-of-the-mill kind of tax law change, one that would have significant change in revenues. At the request of Chairman Thomas, we have invited a wide spectrum of economists with significant macroeconomic estimating and modeling experience to review our work, evaluate our model, and to make recommendations for its use and to make recommendations also on the kind of supplemental information that might be generated by this model. This effort will take the bulk of this year to accomplish.

We are presently planning two meetings, one in June and one in September, and we will ultimately publish the results of the work of this panel of advisers.

In summary, I would like to reiterate a couple of points.

The revenue-estimating process should provide Members with consistently accurate estimates of their proposals. Difficult issues are presented in developing the ability to incorporate macroeconomic effects into revenue estimates, and these difficulties should not be minimized. While the staff remains committed to improving the revenue-estimating process by assessing the potential macroeconomic effects of major tax legislation, these issues must be addressed in a manner that is accepted by expert economists. To do otherwise would undermine the integrity of the revenue-estimating process and could reduce rather than enhance the accuracy of our staff's revenue estimates.

With that, that ends the summary of my testimony.

[The prepared statement of Ms. Paull follows:]

Statement of Lindy L. Paull, Chief of Staff, Joint Committee on Taxation

I. INTRODUCTION

My name is Lindy Paull. As Chief of Staff of the Joint Committee on Taxation, it is my pleasure to present the testimony of the Joint Committee on Taxation ("Joint Committee") staff at this hearing of the Subcommittee on Oversight concerning modeling the economic effects of changes in tax policy.[1]

Under the Congressional Budget and Impoundment Control Act of 1974, the revenue estimates of the Joint Committee are required to be used for purposes of all revenue legislation that is considered or enacted by the Congress. To satisfy this requirement, the Joint Committee staff prepares estimates for Members of Congress on the effects of revenue proposals on budget receipts. These estimates help Members determine whether specific legislation fits within targets set during the budget resolution process.

[1] This document may be cited as follows: 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.

The Joint Committee staff is constantly reviewing and updating the models used to prepare revenue estimates. In addition, since 1995, the Joint Committee staff has been engaged in ongoing and extensive efforts to improve the Joint Committee's revenue estimating capabilities by evaluating the feasibility of incorporating, to the extent appropriate, the macroeconomic effects of tax legislation.[2] Three Joint Committee staff economists have devoted significant amounts of their time to this effort. The Joint Committee staff has utilized the services of economic consultants with macroeconomic expertise. Significant progress has been made, but significant work remains to be done.

This testimony provides a brief overview of the Joint Committee revenue estimating process and discusses the status of the Joint Committee staff's investigation of the possible role of macroeconomic feedback analysis in revenue estimating. This discussion includes a summary of the Joint Committee staff's past research efforts, a description of the macroeconomic models that the Joint Committee staff is currently using, a discussion of the strengths and weaknesses in the current state of the art of macroeconomic analysis, and a description of the Joint Committee staff's plans for future work on macroeconomic analysis.

II. OVERVIEW OF THE REVENUE ESTIMATING PROCESS

In general

Revenue estimates measure the anticipated changes in Federal receipts that result from proposed legislative changes to the Federal tax laws (or other Federal laws). A revenue estimate is simply the measure of revenue projected to be collected if a particular legislative change is enacted compared to the revenue that is projected to be collected under present law. The starting point for a revenue estimate is the estimate of the receipts generated by the affected tax provisions under present law. Estimates of present-law receipts are based on the macroeconomic aggregates and growth rates projected by the Congressional Budget Office ("CBO") as part of its budget forecasts. Estimates of projected revenues under a proposal are calculated based on assumptions about (1) the changes in tax liability intended to occur under the proposal, and (2) likely taxpayer responses to these tax liability changes.

Proposals for which the Joint Committee staff prepares revenue estimates range from those affecting broad groups of taxpayers (e.g., proposals to reduce all individual income tax rates or to provide a tax credit for minor children) to those affecting a narrow class of taxpayers (e.g., proposals to change the excise tax on bows and arrows or to exclude parsonage allowances from gross income). For most estimates of broad proposals, the Joint Committee staff uses large computerized models of the Federal income tax system and the economy. The primary data source for most models is samples of the tax returns filed by individuals, partnerships, corporations, and fiduciaries compiled by the Internal Revenue Service ("IRS") Statistics of Income Division. The models combine the most recently available taxpayer information with forecasts of the aggregate level of national income provided by the CBO. For estimates of narrow proposals, the Joint Committee staff creates more targeted models based on data from a variety of surveys and other sources.

Efforts to improve the revenue estimating process are guided by certain principles. First, the revenue estimating process should consistently produce accurate estimates on which Members of Congress can rely in making legislative decisions. Second, the revenue estimating process must be viewed as fair and impartial. Third, revenue estimating methodologies should be improved whenever possible to enhance the accuracy of the work product.

History of revenue estimating process

Although the basic formula by which a revenue estimate is calculated has not changed over time, the process of preparing revenue estimates undergoes frequent changes and improvements. These changes and improvements have enabled the Joint Committee staff to produce more accurate and timely estimates of proposals for Members of Congress.

In the mid-1970s, the Joint Committee staff employed 5 economists who were responsible for preparing revenue estimates of all tax legislation; only 2 of these economists had computer training. The Joint Committee bought computer time from the Treasury Department and the Department of Commerce. Most of the revenue estimates prepared by the Joint Committee staff were done on adding machines.

[2] Attachment A to this testimony provides a listing of Joint Committee publications that address issues relating to the revenue estimating process, including publications prior to 1995.

In 1986, when the Congress was considering the Tax Reform Act, the Joint Committee staff relied on a Treasury Department mainframe computer to do large individual tax model runs. A model run to calculate a revenue estimate for a proposal for one year took more than one hour and out year effects were then calculated manually. During 1986, the Joint Committee staff responded to 474 revenue estimate requests.

In 2001–2002, the Joint Committee staff employs 20 professionals involved in preparing revenue estimates: 15 Ph.D. level economists, 3 computer specialists, and 2 statistical analysts. The Joint Committee staff has its own mainframe computer to do individual tax model runs yielding results for each year in the 10-year budget period. Each run can now be completed in less than 3 minutes and multiple runs take advantage of economies to shorten the average time per run. Each Joint Committee staff economist has a desktop computer that is more powerful than the large mainframe computers used in 1986. In 2001, the Joint Committee staff responded to 4,491 revenue estimate requests.

In addition to these tangible measures of improvements in the revenue estimating process, the Joint Committee staff incorporates methodological and technological advances in the study of economics and public finance to further improve the reliability of its revenue estimates. For example, the Joint Committee staff has improved its individual tax model by using a new extrapolation technique based on linear programming that allows for a more precise targeting of future levels of specific variables. This improvement gives the Joint Committee staff better ability to match present-law baseline projections provided by the CBO, which is especially useful in analyzing the out-year effects of a proposal.

Behavioral effects

The extent to which behavioral effects are taken into account in calculating the revenue effects of proposed tax legislation seems to cause the greatest confusion concerning the revenue estimating process. Commentators from time to time incorrectly argue that revenue estimates under existing methodologies are static and fail to incorporate behavioral effects. It is important to understand the differences between the significant behavioral effects that are taken into account under the current revenue estimating methodologies employed by the Joint Committee staff and potential macroeconomic effects.

One of the most significant elements of Joint Committee staff revenue estimates is the assumed effect of a proposal on taxpayer behavior. In general, a revenue estimate prepared for any proposal that changes the treatment of an item of expense or income, or the rate of tax on certain types of income or consumption, will incorporate behavioral effects. For example, some of the common behavioral effects include the following: excise tax increases are assumed to result in lower sales of the taxed items; a reduction in the taxation of sales of capital assets is assumed to increase capital gains realizations; temporary tax cuts are assumed to accelerate some affected taxable transactions; temporary tax increases are assumed to delay some affected taxable transactions; and changes in individual income tax rates are assumed to affect portfolio management decisions. The estimates may also assume that employment and investment may shift among sectors or industries, depending on the nature of the tax proposal. In this sense, Joint Committee revenue estimates are not static, but incorporate many microeconomic behavioral effects. However, under existing revenue estimating methodologies, revenue estimates do not incorporate possible effects of tax law changes on economic aggregates such as gross domestic product and gross national product (i.e., macroeconomic effects).

III. MACROECONOMIC EFFECTS OF TAX LAW CHANGES

It is generally agreed that certain major tax proposals, such as a proposal to eliminate the Federal income tax and replace it with a consumption tax, would not only affect Federal tax receipts, but would also affect certain macroeconomic aggregates, such as gross domestic product. Certain changes in tax policy may be expected, and in some cases may be designed, to affect the strength or growth of the national economy. For such proposals, a standard revenue estimate may not convey the complete picture of the long-term budgetary impacts of the proposal. The Joint Committee staff has been working to analyze the feasibility of incorporating both the long-term growth and short-term cyclical effects of such proposals so that additional analysis of potential macroeconomic effects can be provided along with the revenue estimates of these proposals.

A. History of Joint Committee Staff Work on Macroeconomic Modeling

In January 1995, the Joint Committee staff testified before a joint hearing of the House and Senate Budget Committees on the revenue estimating process. In that testimony,[3] the Joint Committee staff discussed some of the issues that arise in considering whether to modify the revenue estimating methodology to take into account macroeconomic effects. The consensus of the expert economists who testified at the hearing was that economists had not yet developed models of the economy that could predict the timing and magnitude of macroeconomic effects with sufficient accuracy to justify including them in revenue estimates.

In 1996, the Joint Committee staff convened a group of macroeconomic modelers who had used forecasting or simulation models of the U.S. economy to predict the macroeconomic effects of major tax reform. The group was asked to work together on a modeling experiment that would help the Joint Committee staff to identify the sources of variation in their predictions, as well as the strengths of each type of model. This experiment required all of the modelers to start with the same present-law baseline forecast of the economy, and to estimate the same tax reform proposals. The results spanned a wide range of outcomes. They were made public in a symposium held in January 1997.[4]

All of the models used in the 1996 study projected that tax restructuring in the form of a consumption tax ultimately would produce higher economic growth. However, the models produced considerable variation in the magnitude and time path of the growth effects. The variations in the responses arose from both major structural differences in the models and from differences in assumptions about key behavioral parameters.

Some significant factors that explained the differences in modeling results were attributable to assumptions about the strength of behavioral responses to tax incentives, the operations of international financial markets, and the actions of the Federal Reserve Board. Each of these factors significantly influenced the outcomes predicted by the different models. Several less obvious, but equally important factors, also contributed to the differences in model predictions. Because the present-law tax Code is quite complex, the modeling of the present-law tax system was quite different among the models. As a result, the estimation of the magnitude of tax-induced changes in after-tax investment returns and after-tax wage rates, which are the major factors that influence taxpayer behavior, varied significantly among the models. In addition, certain structural features of the different models that were chosen to facilitate the mathematical solutions of the models significantly affected the predicted outcomes of certain types of tax policy. Finally, each variation in the tax reform proposal being analyzed required weeks of new modeling effort to accommodate a reasonably accurate representation of that change.

Since the 1997 symposium, the Joint Committee staff (1) has worked to develop a model that could be used in conjunction with detailed tax return data to provide accurate estimates of the effects of specific tax proposals on different groups of taxpayers (the model is discussed in more detail below); (2) has conducted a review of existing empirical studies that have estimated the size of behavioral responses to tax policy changes; and (3) is in the process of testing the basic structure and performance of the Joint Committee staff model.

The significant challenge in developing a macroeconomic model is to keep the solution mechanisms of the basic macroeconomic model flexible enough to allow for the analysis of several versions of a tax proposal without major recalibration of the model. In addition, the model must be capable of utilizing input from the Joint Committee microsimulation tax models to provide the necessary detail to simulate tax policy proposals within the macroeconomic models. As explained below, the Joint Committee staff has devoted much effort to creating analytic links between Joint Committee microsimulation tax models and the Joint Committee macroeconomic model.

The Joint Committee staff review of existing empirical studies has focused in particular on studies that provide behavioral information about specific types of taxpayers, so that appropriate behavioral assumptions can be applied to each group. The two main growth-related responses that have been estimated by multiple studies, and that are explicitly built into the Joint Committee macroeconomic model, are the decisions by individuals to work more or less, and the decisions by businesses

[3] Joint Committee on Taxation, *Written Testimony of the Staff of the Joint Committee on Taxation Regarding the Revenue Estimating Process* (JCX–1–95), January 9, 1995.

[4] The models, the proposals, and the results are summarized in Joint Committee on Taxation, *Joint Committee on Taxation Tax Modeling Project and 1997 Tax Symposium* Papers (JCS–21–97), November 20, 1997.

to invest more or less in response to changes in tax policy. In addition, the decision to consume or save, which affects both short-run demand fluctuations and long-term capital growth, is an important behavioral parameter that has been the subject of much study. The Joint Committee staff has attempted to identify near-consensus assumptions and to use those in its modeling efforts.

Finally, the Joint Committee staff has been testing the basic structure and performance of the Joint Committee macroeconomic model by simulating different large tax policy changes, varying key underlying solution equations and behavioral assumptions, and analyzing the results for internal inconsistencies and sensitivity to different assumptions. Several important issues remain to be addressed including the appropriate modeling of the policy of the Federal Reserve Board and international capital flows. These two issues can cause large swings in short-run economic activity and, therefore, the uncertainties surrounding their appropriate treatment lead to a high level of uncertainty in short-run forecasts.

B. Description of Macroeconomic Models Available to the Joint Committee Staff

The Joint Committee staff is developing an in-house model for use in analyzing the macroeconomic effects of tax proposals. This model, the macroeconomic equilibrium growth ("MEG") model, is a computational equilibrium model with neoclassical foundations that can be used to analyze both long-run growth effects and short-run disequilibrium adjustments resulting from proposed tax changes. The Joint Committee staff also subscribes to two commercially marketed econometric models and has access to an intertemporal general equilibrium model with overlapping generations and forward looking agents.[5]

It is important to note that each of the models described below is well designed to examine a set of the issues that are critical to understanding the effects of tax policy changes, but none of the models is designed to address all of the issues that arise in the macroeconomic analysis of tax policy changes. For this reason, the Joint Committee staff employs a variety of models to gain an understanding of the contributions and limits of current state of the art macroeconomic modeling in tax policy analysis.

Macroeconomic Equilibrium Growth ("MEG") Model

The MEG model has been developed with the help of an outside contractor. The MEG model has the following features: (1) a neoclassical growth foundation in which long-run economic growth is determined by labor supply, investment and savings, and total factor productivity growth; (2) a tax sector calibrated to the Joint Committee staff's microsimulation models of the Federal tax system; and (3) a flexible structure that facilitates running simulations in several different equilibrium modes and to allow short-run disequilibrium adjustments in response to changes in fiscal policy.

Labor supply is determined by taxpayer responses to changes in the average and marginal after-tax wage rates, and by general demographic trends. Capital resources are determined by the stock of undepreciated capital from previous periods plus investment in the current period. Total investment is determined by the responses of domestic savings and international capital flows to tax changes. The amount of domestic investment in the current period is responsive to proposed tax changes through the effect of the changes on the after-tax rate of return on investment. The amount of international investment is responsive to changes in demand for imports. The Joint Committee staff uses its microsimulation individual and corporate income tax models to determine the effects of a tax proposal on changes in effective and marginal tax rates on the following sources of income: wages, dividends, interest, rent, and capital gains. This information is used as input into the behavioral equations in the MEG model. Behavioral parameters in these equations are drawn from empirical economic literature.

The MEG model is designed to simulate the transition path to the long run equilibrium in the economy using several different solution methods. Equilibrium solution methods require that all markets clear during each period in the transition from the initial steady state to the new long run steady state. Equilibrium solutions for simulations of changes in tax policy require mechanisms to negate any changes in aggregate demand that the tax change could be expected to stimulate. One such mechanism is to model an "omniscient" Federal Reserve monetary policy, which

[5] These models are the Washington University Macroeconomic Model ("WUMM"), provided by Macroeconomic Advisers, Inc, and the DRI econometric model, formerly provided by Standard and Poors, Inc., but now provided by Global Insight Inc.

changes interest rates each period to offset changes in demand. Another such mechanism is to balance any net change in tax revenues with an offsetting lump sum change in government expenditure (set at levels designed to neutralize the "balanced budget" multiplier effect). These two equilibrium approaches yield different implications for the interim growth effects of a given tax proposal. A third approach requires the model to use "potential" output rather than actual output in deriving investment responses to tax changes, which mitigates the short-run disequilibrium movements of variables in the model, and thus can be used to isolate supply side growth effects.

The MEG model can also simulate the transition path to the new long run equilibrium using a short run disequilibrium system that converges to a long run equilibrium that is consistent with neoclassical growth theory. A lag structure is in place for most of the behavioral decisions so that movements toward desired levels of investment, labor supply, and output take place over periods of several quarters. Several different Federal Reserve monetary reaction functions can be incorporated into these disequilibrium simulations. In addition to providing information on the range of short run responses the economy may have to specific tax proposals, this analytic framework is useful for comparing MEG results to results from commercial econometric models.

As part of the Joint Committee's ongoing work to refine the MEG model, the Joint Committee staff has used the model to simulate the effects of various tax proposals to analyze the model's performance. These simulations have revealed areas in which the model has needed substantial alteration. As a result, the MEG model is still in development in a number of areas. The Joint Committee staff is in the process of expanding the number of labor supply and investment income equations in the MEG model in order to improve the linkages between this model and the detailed microsimulation models used by the Joint Committee staff. Measures of taxpayer response to tax changes within the MEG model continue to be the subject of substantial scrutiny and ongoing research. There is also substantial uncertainty as to the appropriate modeling of monetary policy of the Federal Reserve Board and the likely responsiveness of international capital markets to U.S. tax changes.

Intertemporal model

The Joint Committee staff has access to an intertemporal general equilibrium model with forward looking agents (that is, consumers and firm managers who make decisions based on their expectations about the future). Individual behavior is modeled using an overlapping generations framework that consists of fifty-five cohorts, denoted by ages that range from zero to 54, as the model's individual life span is known (with certainty) to be 55 years. Each generation is represented by a single individual, who has an economic life span of fifty-five years, works for the first forty-five of those years, and is retired for the last ten. Consistent with the life-cycle theory, the model assumes that individuals borrow money in the early years of life, pay back their debts and save for retirement in their prime working years, and draw down their savings during retirement. Under this theory, an individual's lifetime consumption path is flatter than his lifetime earnings pattern. In addition, the model includes the following features: tax deferred savings, a simple bequest motive, a model of the Social Security system, payroll taxes, and progressive tax rates on wages. The income tax is modeled as a progressive tax on labor income coupled with flat rate taxes on capital income. Capital income is taxed at flat rates on dividends, on interest, and on capital gains. The tax rate on capital gains is an effective annual accrual rate, taking into account the benefits of deferral of tax until gains are realized and tax exemption of gains transferred at death.

On the production side, the model assumes that firm managers act to maximize the value of the firm in a perfectly competitive environment in the absence of uncertainty. The approach utilized is based on Tobin's "q" theory of investment, as extended to include adjustment costs.[6] It is similar to the firm modeling approaches used by several others.[7] The economy has a single production sector in which firm values are calculated explicitly. Firms finance new investment through retained earnings, issuing debt and issuing new shares of equity. Firms pay dividends equal to constant fraction of after-tax profits net of economic depreciation, and new debt issues are a constant fraction of net investment. For tax purposes firms are allowed to depreciate capital more rapidly than the economic rate of depreciation. The model

[6] Hayashi, F., "Tobin's Marginal q and Average q: A Neoclassical Interpretation," *Econometrica 50* (1982), pp. 213–224.

[7] See, for example, Auerbach, A. and Kotlikoff, L. (1987). *Dynamic Fiscal Policy*, Cambridge, MA: Harvard University Press; and Goulder, L. and Summers, L., "Tax Policy, Asset Prices, and Growth," *39 Journal of Public Economics* (1989), pp. 265–296.

distinguishes between the present value of depreciation deductions on existing and future capital. In addition, the model includes a quadratic adjustment cost function that increases the cost of investing in and installing new capital goods.

The model assumes that the resources in the economy are fully employed in each year and therefore does not account for short-run disequilibria (i.e., cyclical movements in the economy) in the markets for labor, capital, or other goods that would occur during transition periods.

Other models

The Joint Committee staff subscribes to two commercially available macroeconomic models (WUMM and DRI) to provide a range of possible transition scenarios in analyzing the effects of proposed tax changes. The models simulate the effects of proposals assuming different Federal Reserve Board and international responses. Because of the uncertainty inherent in making such assumptions, these types of simulations are best used to provide information about the possible range of outcomes and the degree of sensitivity of the estimated ranges to the assumptions used. A general description of the WUMM model is provided in the following paragraphs. The DRI model is similar to the WUMM model.

WUMM is a large-scale structural macroeconometric model. In the long run, the equilibrium is determined by equations that are derived from neoclassical microeconomic foundations. The long-run level of output depends on prevailing tax rates since long-run output is determined by the stock of capital and labor supply and households and firms decisions depend explicitly on after-tax prices and rates of return. In the short run, the resources in the economy are less than fully employed as prices and wages adjust slowly to their equilibrium values. Model parameters and behavioral responses are estimated using post-war quarterly data.

WUMM's consumption function is based on the life-cycle theory of consumption. Consumer spending depends on the average age of the consuming population, labor income, asset income, transfer payments and net worth. Business fixed investment in equipment and structures is derived using the neoclassical theory developed by Jorgenson. The demand for capital is derived from a production function with a unitary elasticity of substitution between labor and capital. Housing demand depends on demographics, disposable income, and the user cost of housing. The real exchange rate and the relative price of domestic and foreign goods determine net exports. Government spending is exogenous except for interest payments on the national debt.

In general, the price level is modeled as a markup over smoothed labor costs. In the short run, the markup equation and the relationship between unemployment and inflation determine prices. In the short run, the real interest rate is determined by the supply and demand for money or by a function that describes the Federal Reserve Board's monetary policy. In the long run, the real interest rate is equal to the value that equates savings and investment.

C. Issues and Problems With the Use of Macroeconomic Analysis in Revenue Estimates

While substantial progress has been made to develop a model that willassess the potential macroeconomic effects of tax law changes, difficult problems remain to be solved. In theory, the incorporation of macroeconomic feedback effects in revenue estimates would provide year-by-year estimates of changes in revenues resulting from the influence of tax policy on national economic aggregates like business profits, wages and interest rates. However, to achieve this goal would require the modeling of the effects of tax policy changes to decide on a single set of assumptions with respect to (1) the effects of short-run, or business cycle, fluctuations in the economy, (2) changes in Federal Reserve Board policies, (3) the reactions of international capital markets, and (4) budgetary scoring conventions on the expenditure side. As detailed below, these issues present significant challenges that remain to be resolved.

1. Sources of uncertainty

Effects of business cycle fluctuations

Business cycle fluctuations lend uncertainty to any attempt to measure the macroeconomic effects of a tax change. A net cut in taxes should stimulate consumption and investment in the short-run, resulting in an increase in aggregate demand. The ultimate effect of this increase in demand on the economy will depend on facts such as whether resources in the economy would otherwise be in full use at the time of the tax reduction, on the response of the Federal Reserve Board to the policy, and on the responses of international capital flows. Short-run fluctuations are also crit-

ical to accurate assessment of the effects of tax proposals on long-term growth, because of the interactions of these cyclical effects and the rate of business investment, which can affect the growth capacity of the economy for a period of years.

When the economy is doing very well, at a "peak" stage of the business cycle, virtually everyone who wants to be employed is already employed, and productive buildings and equipment are operating near capacity. Under these circumstances, domestic businesses would be unable to increase production significantly in response to a sudden increase in demand such as would be created by a large net tax cut. When demand for goods and services increases more rapidly than the supply of goods and services, a potentially inflationary situation exists. Any apparent growth in output of the economy (as measured by the dollars spent on goods and services or dollars received as income) is likely to be primarily from a growth in prices, rather than in real production. In contrast, if the economy is slowing down, nearing the "trough" of a business cycle, unemployed people and under-used productive capacity will be available to respond to increases in demand with increases in supply. In this situation, less inflationary pressure exists, and growth in output is likely to reflect an actual increase in economic activity. Although in both cases the increase in demand would be likely to result in a temporary increase in tax receipts for the Federal government, this distinction between inflationary and real growth is important from a budgetary "scoring" standpoint. In the first case, the costs faced by the government to provide the same level of services will also increase due to inflation, resulting in possibly no net improvement of the Federal government's fiscal situation. In the second case, a temporary increase in real economic activity could generate additional revenues without generating additional costs, thus improving the net fiscal position of the Federal government.

Assessing whether or not the economy will be operating near a peak in the business cycle at the time a proposed tax cut is actually enacted and the tax savings in the hands of the taxpayers is a notoriously uncertain task. Because economic forecasting models generally rely most heavily on the more recent characteristics of the economy, they are not well suited to predicting the exact timing of a change in the direction of the economy.

Actions of the Federal Reserve Board and international capital flows

Another major source of uncertainty is the reaction of the Federal Reserve Board to fiscal policy changes. If the Federal Reserve Board believes there is a significant risk of inflation associated with an expansionary fiscal policy, then it may raise interest rates to reduce the risk of inflation. An increase in interest rates reduces consumer purchases of durable goods and business investment, and thus would slow the growth of the economy. In addition, since the exchange rate and the U.S. interest rate are positively related, an increase in the interest rate would reduce net exports. This occurs because an increase in the exchange rate makes U.S. goods relatively more expensive to foreigners and imports relatively cheaper to consumers in the United States. These reductions counter-act the growth effects of an expansionary fiscal policy and thus could render dynamic revenue estimates less reliable if the Federal Reserve Board's actions are not predicted accurately. Existing macroeconomic models use an array of monetary policy rules to describe the actions of the Federal Reserve Board; however, there is no way to be certain of how the Federal Reserve Board will act in the future. Furthermore, there is an unknown lag associated with monetary or fiscal policy that contributes to the uncertainty of determining how the Federal Reserve Board actions would affect the path of the economy.

It is also unclear how international capital markets will react to either a change in tax policy or a change in Federal Reserve Board policy. Some macroeconomic models assume that an increase in the returns on business investment will induce increased international as well as domestic investment, and some do not. The amount of international investment induced by a tax change can affect the amount of total investment, the size of the capital stock and net economic growth it induces. The independent actions of the Federal Reserve Board and foreign banks introduce a high degree of uncertainty in macroeconomic forecasting. It is unclear at this time that there is any way to reduce these sources of uncertainty through modeling improvements and, therefore, to make accurate year-by-year macroeconomic predictions.

Effects of changes in the Federal budget deficit on the interest rate

Conventional economic theory suggests that a relationship exists between interest rates and the size of the Federal deficit, through its potential effect on the supply of loanable funds. Specifically, conventional economic theory predicts that an in-

crease (decrease) in the Federal budget deficit would decrease (increase) the supply of loanable funds, causing an increase (decrease) in interest rates, and thus, decrease (increase) consumer purchases of durable goods and business investment. This relationship between the size of the Federal deficit and the interest rate implies that larger budget deficits would be associated with a smaller stock of capital and a lower rate of growth in the economy. Changes in the pattern of business capital accumulation can affect the economy's growth capacity for a sustained period of time. This effect would tend to offset positive economic growth induced by the positive behavioral incentives in some tax cuts.

However, even though this view is considered the conventional theory in the economic literature, a less widely held, but nonetheless important, view of the economy questions the validity of the conventional theory. The empirical literature on this subject fails to provide conclusive evidence supporting either view.[8] The relationship between changing Federal government deficits and the interest rate is commonly included in structural macroeconometric models that focus on short run forecasting. It is usually not included in general equilibrium simulation models, which typically assume "balanced budget" tax changes to simplify model solutions. This inconsistency between classes of models makes efforts to isolate "supply side" effects from general macroeconomic effects an important component of dynamic analysis.

Sensitivity of results to behavioral assumptions and model structure

The effects of tax policy changes on the long-term growth of the economy depend on how the tax policy affects after-tax returns to labor and capital, and on how the suppliers of this labor and capital respond to these changes. The way a model treats costs of labor and capital varies significantly across different types of models. Some models incorporate these effects through simple elasticities incorporated in labor supply, savings, and investment equations. In other models, these responses are embedded within more complex sets of equations that attempt to capture multiple feedback interactions between labor, capital, consumers, and financial markets. In either case, the results generated can vary significantly depending on the parameters selected and the functional forms and solution criteria for the equations used. While empirical studies provide some information about reasonable ranges and assumptions for some of these assumptions, there are many different views as to which approach is the "most correct."

2. Small magnitude of macroeconomic effects of most proposals

Most revenue proposals are likely to have little or no macroeconomic consequences since many of these proposals are of limited scope or represent changes that are subject to modest or offsetting influences from a macroeconomic perspective. For example, a proposal to encourage investment in a targeted area may simply shift investment away from alternative areas in the economy. Such a shift may achieve the desired effect within the targeted area, but may not have a net effect on the economy as a whole.

Revenue proposals also may be subject to opposing incentive effects. For example, a reduction in marginal tax rates will increase the after-tax return on additional labor and saving and thereby encourage additional work and savings effort. However, a reduction in marginal tax rates is typically accompanied by an increase in after-tax income as well. This "income effect" tends to work in the opposite direction from the positive incentive effects, lessening the need to work or save to achieve a desired level of consumption. The net effect depends upon the relative importance of these two potentially offsetting factors and the relative sensitivity to the two factors among affected taxpayers.

Other proposals, such as cuts in capital gains taxes and accelerated depreciation, that increase the after-tax profitability of business investment, may be expected to affect the long-run growth of the economy through a build up in the amount of productive plant and equipment. However, it is likely that this capital build up will develop gradually, with most of the budgetary consequences occurring outside the near-term budget horizon. Even a ten-year forecasting period may not be long enough for the full effects of increased productivity resulting from increased capital to be fully manifested.

[8] For more on this issue see Elmendorf, D. and Mankiw, N. Gregory, "Government Debt," *National Bureau of Economic Research Working Paper 6470* (1998).

3. Baseline assumptions

The reference point for Joint Committee revenue estimates is the CBO ten-year projection of Federal receipts, referred to as the revenue baseline.[9] The revenue baseline serves as the benchmark for measuring the effects of proposed law changes. The baseline assumes that present law remains unchanged during the ten-year budget period. Thus, the revenue baseline is an estimate of the Federal revenues that will be collected over the next ten years in the absence of statutory changes.

The revenue baseline is based upon CBO forecasts of macroeconomic variables such as the annual rate of growth of nominal gross domestic product, inflation rates, interest rates, and employment levels.[10] For modeling purposes, a number of elements of the CBO forecast are disaggregated to match specific tax-related variables. For example, the aggregate forecast of wages and salaries paid is statistically matched to various types of taxpayers by income class.

Some argue against using the present-law revenue and expenditure baselines as the benchmark for measuring the effects of proposed law changes on the grounds that changes in revenues may have an induced effect on government spending behavior. They suggest that the effects of a proposed tax cut should be measured relative to the effects of an offsetting expenditure change, rather than relative to present law. However, the public availability of the present-law baseline is an important feature of the current revenue estimating process that may be more difficult to achieve if some other reference point were adopted; it serves as an objective and observable reference point for measuring all budget proposals, including spending proposals.

4. Budget symmetry

The argument in favor of providing macroeconomic analysis for certain revenue proposals is essentially an argument in favor of expanding the scope and accuracy of the information used in the budget process. This argument, however, is not limited either to the revenue effects of a tax proposal, or to proposals affecting revenues. The most direct example of the desirability of including some outlay analysis is the relationship between net changes in tax revenues and Federal debt service expenses. A proposed tax increase that would result in a net reduction in the deficit would also result in a net reduction in public debt. The decrease in public debt would result in a reduction in Federal outlays to service the debt.

Many argue that direct changes in some Federal spending programs should be subjected to macroeconomic feedback analysis. A proposal that would expand the nation's infrastructure, or improve education, can have similar macroeconomic effects to revenue proposals. Providing macroeconomic analysis on the revenue side of the budget, but not developing similar analysis on the outlay side of the budget, raises the possibility of biasing the consideration of competing revenue and outlay proposals.

The capacity of macroeconomic analysis to expand the scope and accuracy of revenue analysis has been debated over a period of years and remains a subject of controversy. This controversy also applies to the feedback effects of outlay proposals. Although the general implications of certain improvements to public infrastructure on national production are clear in theory, efforts to quantify these implications are problematic.

5. Coordination with CBO baseline and budget reconciliation analysis

To the extent that macroeconomic feedback effects would eventually be incorporated into revenue estimates for budget scoring purposes, issues of consistency and coordination may arise. For example, the effects of a tax cut on changes in Federal debt service expenses may be incorporated in the reconciliation process itself, through the budget projections provided by the CBO. These net budget effects can extend beyond the mechanical change in debt service to underlying effects on national savings, interest rates, and private capital formation. This was the case, for example, in the 1997 Deficit Reduction Act, for which CBO estimated an explicit net budget effect attributed to moving the budget onto balanced budget path. The fact that the scoring of tax legislation may differ from proposal to proposal depending on the manner in which policy initiatives are considered raises possibility of including inconsistent, or double-counted general fiscal effects. In addition, it would be problematic for the scoring of revenue proposals to incorporate these short-run mac-

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

[10] For a detailed discussion of the methodologies employed by the CBO to forecast Federal revenues, see Congressional Budget Office, *Description of CBO's Models and Methods for Projecting Federal Revenues*, May 2001.

roeconomic feedback effects if scoring of expenditure proposals does not include them as well. An important component of the development of Joint Committee's macroeconomic analysis of revenue proposals is coordination with CBO's budget scoring. Coordination between the Joint Committee staff and the CBO staff would be necessary.

IV. CONCLUSION

Summary of significant issues

The Joint Committee staff has made substantial progress since 1995 in the development of a macroeconomic model that would analyze the potential effects on the economy of a major change in tax policy. The Joint Committee staff has also obtained several other types of macroeconomic models to insure that a wide variety of tools would be available to analyze changes in tax policy.

An important point to keep in mind is that the vast majority of the revenue estimates produced by the Joint Committee staff each year relate to relatively narrow or modest changes in Federal tax laws. Such changes would not be expected to have any measurable effect on the economy. In addition, some major tax legislation may have proposals with opposing incentive effects so that the net effect of the legislation on the economy may be quite small. Thus, for the vast majority of Joint Committee revenue estimates, no measurable macroeconomic effects would be identified.

Revenue estimates are provided, under the existing budget rules, for a relatively short time period (at most 10 years). Forecasting the timing and magnitude of the effects of a change in tax policy on the economy is the aspect of macroeconomic modeling that is associated with the greatest amount of uncertainty. There are a variety of issues giving rise to this uncertainty and each issue raises serious problems with respect to the reliability of estimates of the timing and magnitude of any potential macroeconomic effect. The validity and utility of any estimates of macroeconomic effects remain subject to question until these issues are addressed.

The major issues that remain to be resolved can be summarized as follows:

1. Predicting the effects of business cycle fluctuations.—One of the most difficult aspects of economic modeling is the prediction of when the economy is likely to change direction, either to slow down during a period of growth, or to begin recovering during a period of recession. The effect of a tax change on real, near-term economic growth depends on the state of the economy at the time of the change. If the economy is near capacity, inflationary pressures may reduce the net positive effect of tax changes on the economy.
2. Predicting the potential response of the Federal Reserve Board to fiscal policy changes.—The Federal Reserve Board's policies on interest rates affect the rate of growth of the economy and, thus, affect the potential macroeconomic effects of a major tax policy change. Absent some definitive information, such as a statement from the Federal Reserve Board with respect to its expected policies, it is impossible to predict with any precision how the Federal Reserve Board will react to a change in tax policy. It could be assumed that there would be no change in Federal Reserve Board policies, but such an assumption would undoubtedly be incorrect. Within the budget forecasting period, such effects can overwhelm any impacts on long-term growth that might result from a particular policy change.
3. Predicting how the macroeconomic effects of tax policy changes would influence different types of individual and corporate income and international capital flows.—The predicted size of the effects of any given proposal on individual and corporate income and international capital flows can vary significantly depending on the structure of the model and various assumptions about the strength of behavioral responses built into the model. Ultimately, the importance of these types of responses would have to be determined from existing empirical economic evidence. The Joint Committee staff is continuing to enhance these components of the MEG model, and to experiment with other modeling approaches.
4. Sensitivity of results to behavioral assumptions and model structure.—The effects of tax policy changes on the long-term growth of the economy depend on how the tax policy affects after-tax returns to labor and capital, and on how the suppliers of this labor and capital respond to these changes. The way a model treats costs of labor and capital varies significantly across different types of models and can result in significant disparities in the results.
5. Consistency of treatment between revenue and spending proposals.—If macroeconomic effects are accounted for with respect to revenue proposals, it can

be argued that a similar approach is necessary with respect to spending proposals. If the issues of consistency of treatment for Federal budget scorekeeping purposes are not addressed, then two equivalent policies would have different projected effects on the economy depending upon whether the policies were achieved through the tax system or through Federal spending. It would be necessary to coordinate with the CBO staff to address these possible issues of consistency.

Future plans

The goal of the Joint Committee staff efforts is to improve the quality and accuracy of the revenue estimating process. Because of the sources of uncertainty and differences in modeling outlook with respect to the issues that have been identified, Ways and Means Chairman Bill Thomas and the Joint Committee staff have invited a "blue ribbon" panel of macroeconomic modeling experts to review the Joint Committee's work and make suggestions both for modeling improvements and for the type of information that should be included in these analyses.

In the near term, the objective of the Joint Committee macroeconomic modeling project is to provide background information about the range of likely economic feedback effects of major tax proposals, including an explanation of the areas of greater and lesser uncertainty. The Joint Committee staff has identified several areas for improving modeling capacity, particularly in improving the links between the Joint Committee microeconomic tax simulation models and macroeconomic models. Work is underway on several specific enhancements to labor supply and consumption modeling within the MEG model to improve this linkage.

In addition, the Joint Committee staff is in the process of soliciting input from other macroeconomic modeling groups on the MEG model and suggestions for future directions for modeling improvement. This process would include discussions with the CBO on baseline assumptions and appropriate expenditure interactions. Another component of this process will involve producing a series of working papers describing key technical features of the MEG model and using the model to estimate the longer-run macroeconomic growth effects of several types of tax proposals. The papers will be circulated to other tax and macroeconomists for purposes of stimulating discussion on the validity of the Joint Committee analysis, which will be used to inform further refinements to the model.

In the near future, the Joint Committee staff expect to be able to produce comparative analyses of the long-term growth and associated revenue feedback effects of major tax proposals, and to attach "macroeconomic feedback notes" containing this analysis to revenue estimates of those proposals for which such a note is clearly indicated. This analysis would include a description of the major assumptions used to produce the analysis, as well as a discussion of the degree of certainty associated with the results.

Conclusion

It is important to reiterate a point that was made at the beginning of this testimony. The revenue estimating process should provide Members with consistently accurate estimates of their proposals. The difficult issues presented in developing the ability to incorporate macroeconomic effects in revenue estimates should not be minimized. While the Joint Committee staff remains committed to improving the revenue estimating process by assessing the potential macroeconomic effects of major tax legislation, these issues must be addressed in a manner that is accepted by expert economists. To do otherwise would undermine the integrity of the revenue estimating process and could reduce, rather than enhance, the accuracy of the Joint Committee staff revenue estimates.

Attachment A—Selected List of Revenue Estimating Methodological Publications of the Joint Committee on Taxation (1990–2001)

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.

Joint Committee on Taxation, *Tax Policy and the Macroeconomy: Stabilization, Growth, and Income Distribution Scheduled for Hearings Before the House Committee on Ways and Means on December 17–18, 1991* (JCS–18–91), December 12, 1991.

Joint Committee on Taxation, *Discussion of Revenue Estimation Methodology and Process* (JCS–14–92), August 13, 1992.

Joint Committee on Taxation, *Discussion of Revenue Estimation Methodology and Process* (JCX–31–92), August 4, 1992.

Joint Committee on Taxation, *Methodology and Issues in Measuring Changes in the Distribution of Tax Burdens* (JCS–7–93), June 14, 1993.

Joint Committee on Taxation, *Written Testimony of the Staff of The Joint Committee on Taxation Regarding the Revenue Estimating Process for the Joint Hearing of the House and Senate Budget Committees of the 104th Congress on January 10, 1995* (JCX–1–95), January 9, 1995.

Joint Committee on Taxation, *Methodology and Issues in the Revenue Estimating Process Scheduled for a Hearing Before the Senate Committee on Finance on January 24, 1995* (JCX–2–95), January 23, 1995.

Joint Committee on Taxation, *Membership of the Joint Committee on Taxation Revenue Estimating Advisory Board* (JCX–29–95), June 29, 1995.

Joint Committee on Taxation, *Description and Analysis of Tax Proposals Relating to Savings and Investment (Capital Gains, IRAs, and Estate and Gift Tax) Scheduled for a Public Hearing Before the House Committee on Ways and Means on March 19, 1997* (JCX–5–97), March 18, 1997.

Joint Committee on Taxation, *Joint Committee on Taxation Tax Modeling Project and 1997 Tax Symposium Papers* (JCS–21–97), November 20, 1997.

Joint Committee on Taxation, *Background Information Relating to the Joint Committee on Taxation* (JCX–4–99), February 3, 1999.

Joint Committee on Taxation, *Testimony of The Staff of The Joint Committee on Taxation Before the Committee on Ways and Means* (JCX–82–99), November 10, 1999.

Joint Committee on Taxation, *Appendix I to JCX–82–99: NIPA and Federal Income Tax Receipts Data* (JCX–83–99), November 10, 1999.

Joint Committee on Taxation, *Background Information Relating to the Joint Committee on Taxation* (JCX–1–00), January 12, 2000.

Joint Committee on Taxation, *Background Information Relating to the Joint Committee on Taxation* (JCX–24–01), April 10, 2001.

Chairman HOUGHTON. Thank you very much, Ms. Paull. Mr. Coyne?

Mr. COYNE. Thank you, Mr. Chairman.

Ms. Paull, the Congressional Budget Office (CBO) considers the dynamic effect of tax legislation enacted into law when it recalculates its baseline each year, but your testimony indicates that the Joint Committee includes some behavioral responses—is that your testimony here—when you provide the Committee with your estimates as well?

Ms. PAULL. Yes, we do. For example, if you were—I gave the example of increasing the excise tax would reduce consumption and therefore reduce the amount of purchases, sales of those products. Another example would be we would incorporate the changes in investment strategies that individuals might undertake with respect to, let us say, a change in the capital gains tax rate or in expansion of interest of tax-free bonds, things like that.

Mr. COYNE. Why did the Joint Committee on Taxation's analysis use a 10-year period rather than a year-by-year approach in estimating?

Ms. PAULL. Well, we have not—our estimates today do not include the macroeconomic feedback effects or these dynamic effects. What we are attempting to become capable of but we have not provided this yet—that is what this panel of advisers is going to help us on—is to look over the overall 10-year period and provide some supplemental information to our traditional estimates. That information will be discussed with these advisers, and we will try to formulate a set of information which we think would rise to the level

of accuracy that we think would be useful for Members to consider along with any proposed changes in the law.

Today, we do our estimates on a year-by-year basis, but the reason why you would want to do the supplemental information over a longer timeframe, it is because these macroeconomic effects would take a long time—there is a lot of disagreement within the economists as to the timing and the magnitude of these effects, but it would take a long timeframe to realize some of the effects.

Mr. COYNE. Why did your analysis of the entire bill, the tax bill, the most recent tax bill, why did you evaluate the entire bill rather than on a provision-by-provision basis of the bill?

Ms. PAULL. Well, we did provide our traditional revenue estimates on the entire bill on a provision-by-provision basis over 10 years because, while the House has a 5-year Budget Act, the Senate has a 10-year budget requirement. In addition to that, at the request of—under the House rule of—I believe it was the Budget Committee Chairman, but I am not positive of that—we included a footnote in last year's revenue table that indicated, not quantifying in any way, but that the marginal rate cuts that were in the bill would have some positive long-term economic effects on the economy investment savings.

Mr. COYNE. Could you describe for us a macroeconomic feedback note? Just in your words how do you describe what that is?

Ms. PAULL. Well, as I said, that is something that—the kind of analytical information that we would want to provide to the Congress would be broken down into sectors of the economy as to—depending on the type of tax proposal that we are analyzing, it would be broken down into, for example, would the proposal encourage people to work more or less? Would it encourage them to save more or less, businesses invest more or less? What the overall impact—well, perhaps what the impact on interest rates might be, a number of factors, depending on the proposal, and give you some detailed analytical information about that.

Again, as I said, we would like to utilize this panel of advisers that we were just in the process of setting up a meeting with to help us formulate that kind of analysis.

Mr. COYNE. Would that be more than the concept of the 2001 footnote? Would it go beyond that?

Ms. PAULL. Yes, it would.

Mr. COYNE. You would. Thank you.

Chairman HOUGHTON. Ms. Dunn.

Ms. DUNN. Thank you, Mr. Chairman.

I think this is such an interesting topic. I think we have got to be nuts to be so fascinated by the scoring system, and yet I think if we hear anything discussed behind the scenes it is how frustrating it is to try to get an accurate score on a bill.

I have been working with death tax repeal for years now, and I still don't believe that we do enough to take into consideration the positive aspects of what would happen if we truly had predictability in scoring on the death tax. In fact, recently I have heard a number of groups in our debate on tax permanence on the Floor a couple—few weeks ago, talk in terms of how much the Treasury Department would lose between 2011 and 2020 if death tax were made permanent. They say $4 trillion.

What is your view of long-term predictability of our economy, and how it would be affected by some of these tax relief proposals? Is there any validity to them, or are we still at the point where we think truly a 5-year estimate is much more realistic than anything beyond that time?

I would ask you both to answer that.

Mr. HUBBARD. I think you have raised a very important question, and the reason that I suggested using an impact statement is to get at exactly that. If you take the President's tax bill that became the tax law, our estimates are that, over the long term, say over the next 20 years, that probably adds to GDP growth about 15 basis points a year. Now that may not sound like much, but over a 10-year period it is very, very large indeed, and it is very important I think for all of you to have that information.

The same, frankly, would be true for the death tax which, as you know very well, is a capital tax. It discourages savings and investment. The kind of information you get in these long-term impact statements would be very useful, I would think.

Ms. PAULL. Well, I think one of the hurdles—we have done extensive review of the economic research in this area, and one of the kind of challenges for us to be able to provide more information to you is there is probably agreement about a number of kinds of tax proposals, what the effect would be over the long term. The magnitude of those effects, there are wide ranges, and kind of the timing of those effects are—you know, for example, Mr. Hubbard just mentioned 20 years. We are operating within a 10-year budgetary regime as all we are capable of right now, but some of these effects really go on outside 10, 20, 30 years, and that is what a lot of the economists are able to work on—you know, predict at this point.

So that is what our challenge is, to find a comfort zone where there is enough economic work that you can find some consensus for a reasonable range here and the magnitude and the timing, and that is what we are trying to work towards.

Ms. DUNN. I think the other end of that is important, too. In the example I cited, the permanent repeal of the death tax, there are impacts that occur early on that are positive because of predictability, phasing out, making permanent the repeal of that tax.

For example, there would not be a need to plan beyond January 1, 2010, if we knew that it were going to be permanent, to purchase expensive life insurance policies or to spend great deals of time with certified public accountants, CPAs, lawyers, and so forth. So where we seem often to take into consideration the negative impact of these proposals, we don't always add in what can happen at the front end.

I simply wanted to say, Ms. Paull, I am very happy to hear you talk about that Committee of macroeconomists who I hope are going to be looking at this whole area, and we will be interested in their report after the end of the year.

I would say specifically, Mr. Hubbard, that the impact statement used to supplant the scoring of a bill would be very interesting to me. I am wondering, how you would see this work? Would you do it automatically or would you take a look at whether an impact statement, a behavioral look at a piece of legislation would be worth it, or would you simply be directed by the wish of some

Member of Congress or a Committee that wanted something scored that way?

Mr. HUBBARD. Well, of course, that decision would be yours. My advice would be that you do it only for large proposals and where you think it would make a difference.

Let me give you a concrete example. Suppose you were trying to decide between a proposal to give everyone rebates every year in perpetuity or to cut marginal tax rates. The cash flow implications of those two proposals on revenue may look very similar, but an impact statement would reveal to you that the growth effects of cutting marginal tax rates are substantially greater, so that might be information you would want to have in making your decision. So, I would do it for big proposals and where you think it can highlight a contrast for you.

Ms. DUNN. Mr. Chairman, I am sorry to push into my overtime, but I guess the point I would make, it is very tough to get scores out within months. I have a letter in, I think, Ms. Paull, to your organization, Joint Tax, of last February requesting a score that we still haven't gotten. So I am sure that it is seasonal and it has to do with whether the models are prepared or not, but I worry that we are asking for something that is simply going to increase the length of time for us to get the score. What do you think about that, Ms. Paull?

Ms. PAULL. Well, many of the kind of proposals that we score from the standpoint of our normal estimating process have a very narrow scope to them, and they are really not the kind of proposals—they are very narrowly focused, they are small—that would have any significant macroeconomic feedback effects. You really need to focus the macroeconomic feedback scoring or analysis on major proposals, and so I don't think it should hold up.

I regret that you have a proposal in that hasn't been estimated for that length of time, but it should not hold up our normal estimates in any way.

Ms. DUNN. Thank you, Mr. Chairman.

Chairman HOUGHTON. Thanks, Ms. Dunn. Mrs. Thurman?

Mrs. THURMAN. Thank you, Mr. Chairman and thank the two witnesses for being here today.

Ms. Paull, I was looking at your testimony, and it is my understanding that I guess it is House rule 13 that actually allows us to include a dynamic estimate of the changes in the Federal revenue after the enactment of a piece of legislation. Has that been used before?

Ms. PAULL. On occasion, we have had requests. I would say my experience is, I think, it has only been once since I have been in this position. It is——

Mrs. THURMAN. Do you know when that was?

Ms. PAULL. For last year.

Mrs. THURMAN. Okay. For the tax——

Ms. PAULL. The way the rule is written, it is a request of the Majority Leader who then is to request the Chairman of the Joint Committee, I think, because the House Member—it is Chairman Thomas—to ask for that estimate. It is supplemental information, and, as I said, we have not provided any sort of detailed, quantified kind of estimate pursuant to that rule. We have been doing all this

work to become capable pursuant to that rule, and we have provided the kind of thing that was reflected in the footnotes to the major tax bill last year on occasion to Members who have asked for an estimate of a significant type of a tax proposal.

Mrs. THURMAN. I appreciate that, because I noticed in your conclusion in your testimony that there really are a lot of factors that it sounds to me that have not really been settled as to why these macroeconomic issues may be a problem in some cases. Because you mentioned what still needs to be resolved in any of this is predicting the effects of business cycle, fluctuations, predicting the potential response of the Federal Reserve Board, predicting how the macroeconomic effects of tax policy changes would influence different types of individual and corporate income, sensitivity of results to behavioral assumptions, and then the consistency of treatment between revenue and spending proposals.

So, there are a lot of outstanding issues in using this particular way of looking at a tax proposal, and so I appreciate the fact that you have brought that to our attention that there are still some problems in it. It sounds like to me that there are a lot of people still having a rather lengthy discussion about these issues.

Ms. PAULL. Yes, this is an area that is fraught with some problems and uncertainties, and that is why I think even Mr. Hubbard is not suggesting that these estimates—this kind of estimate be incorporated in our year-by-year estimates but be provided in a supplemental manner. When you provide it in a supplemental manner—that is what we are going to explore with this panel of advisers—it is possible that the range of views could be quite broad and so——

Mrs. THURMAN. Right. I think Mr. Hubbard——

Ms. PAULL. That would be supplemental information for you, but it would be difficult to, you know, have a pinpoint saying this is what we think the answer is.

Mrs. THURMAN. I think what Mr. Hubbard said was it is of great value, but you need the range of estimates so that we, as policymakers, would have the opportunity to have that discussion.

Mr. HUBBARD. I think that is right.

I would like to caution you, though, that because something is difficult doesn't mean you shouldn't do it. Surely the microeconomic estimates are subject to the same uncertainty and disagreement. So while there is a range, I wouldn't want to leave you with the impression that dynamic scoring is, in and of itself, harder to do than the traditional.

Mrs. THURMAN. I am not suggesting that. What I am suggesting, though, that what I do believe you are saying, and you can tell me yes or no, is that it is better for us to have a range of these estimates, to have what is currently being done and others and not just for the politics of making it sound better. Is there really good policy and understanding of what action we are taking and the consequences of that action? I mean, it would seem to me that for us, being kind of the people supposed to look at the taxpayers, that it is important for us to have a wide range of these analyses in front of us, versus just one. Is that——

Mr. HUBBARD. I would certainly agree with that, absolutely.

Mrs. THURMAN. Okay. The second thing I would ask very quickly, and Ms. Paull knows this because I brought it up in the last markup, an issue on some bond issues. I am just curious as to why we don't use this on some spending bills, because certainly there would be economists that would argue that you stimulate the economy through providing jobs and that jobs may be through building roads, infrastructure, water and sewerage, those kinds of things. In your consideration are you looking at this as far as spending bills as well?

Ms. PAULL. Well, that would be a question for the CBO that does the scoring for the spending. So, you know, I think that is a legitimate question. If you are going to do one part of the budget, why not do the other part of the budget? Again, I think that you would have to be looking at something that is of major significance, as opposed to just every single kind of smaller spending proposal. Otherwise, there would be such a de minimis impact on the economy, but that would be something I would ask the CBO.

Mrs. THURMAN. Mr. Hubbard, do you have a comment on that?

Mr. HUBBARD. I would certainly agree with what Lindy just said, but add something as well.

I think in the tax area there is much more agreement on effects of major tax policies. There has to be a range, to be sure. Economists can never really agree on any one thing. If you were to say, what is the effect of moving to a consumption tax, that is a question that is easier to answer than what is the effect of, say, a large increase in early childhood education. So I would caution you, it is a much more difficult exercise, although I certainly agree with you in principle.

Chairman HOUGHTON. Mr. Portman.

Mr. PORTMAN. Thank you, Mr. Chairman.

Mr. Hubbard, I appreciate your being here, and, Lindy, thank you for all the help you give us. I have another meeting I am late for. I just wanted to express quickly a couple thoughts and then yield to Mr. Crane.

First is, we should also be talking about revenue raisers, because I think the macroeconomic effects, sometimes we don't consider, and historically, when you look back, some of our revenue raisers have not raised revenue that they were intended to.

The second point is, I love the idea of the impact statements. I appreciate what the CEA provided for us in relationship to the tax relief but also the most recent stimulus package, but for those of us who are legislators, we need more than that.

A good example would be tax simplification. Many of us believe the alternative minimum tax, AMT, should be repealed, for instance, but it is difficult for us to move with simplification because of the enormous costs. So having an impact statement is wonderful. It gives us something to talk about on the Floor. Actually to get it through the process and to deal with the budgetary impact, I think we do need to figure out a way to get the macroeconomic impact incorporated into the estimate.

With that, I yield to Mr. Crane.

Mr. CRANE. Thank you very much. I appreciate the opportunity to be here, even though I am not a Member of the Subcommittee. I have been very fascinated with this entire subject, and I have had

communications, as Lindy knows, with her office with a view to trying to effect some potential reforms.

I remember vividly when we had witnesses testifying back in 1978 on the impact of cutting the capital gains rate at that time and all of the experts came in and told us what a revenue loser it would be, and it turned out to be a big revenue raiser. Then I remember in 1981 when we cut the capital gains rate yet again, and this time even Reagan represented those anguished when the question was put: what might the revenue impact be? Well, it might be a loser, but still we think it is a good thing. It was an even bigger revenue raiser than the cut in 1978 was.

This is the sort of thing that, from our standpoint here in trying to contemplate what might be moves in the right direction and most beneficial to our economy, we all on the Committee on Ways and Means are very much involved in. That is why we really need the input from you experts, and I don't want to try to dictate guidelines. You are the ones that have better insights certainly than I do on this subject.

I was wondering if there is anything, Lindy, that you are working on in the way of new macroeconomic models with a view to giving us estimates in the future.

Ms. PAULL. Mr. Crane, I only summarized my testimony—the written testimony. We do describe in our written testimony the model we have been working on for macroeconomic estimation. This model is one that we hired an outside consultant to work carefully with us, and we have devoted two to three of our Ph.D. economists to work on this model since 1997 when we held the symposium. So we are in the process now of—we have recently invited a number of outside experts on macroeconomic modeling to come in and review our work, the work that we have been doing in-house, and to help us make any improvements that need to be made to this and also help us design the kind of output, the kind of information that we could provide to the Committee as a supplement to our normal revenue estimates.

We also have access through subscriptions to three other models that we would use to supplement the information, but this model is designed to work with our big other macro—micro-Internal Revenue Servicemodels so that it would provide a really—I guess it is really well-suited toward the kinds of needs we would have in the future for being able to do some of this kind of work.

Mr. CRANE. Well, I hope that you might let Members currently review some of the methodology using the score bills, but to tell you and our distinguished guest here today, Mr. Hubbard, that—what resources you folks need in your efforts please communicate with us, because what you do is critically important to the job we have to do.

I want to thank the Chairman for letting me come here not as a Member on the Subcommittee and participate in this. Thank you, and I yield back the balance of my time.

Ms. PAULL. Thank you, Mr. Crane. I know we have had continuous discussions about this over the years.

Chairman HOUGHTON. Thanks very much, Phil. Mr. Johnson?

Mr. JOHNSON. Thank you, Mr. Chairman. Hi, Lindy.

You know, the IRS decided to issue regulations regarding employee stock purchase plans and that would overturn 30 years of tax policy by requiring payroll taxes be paid on the plans. If the IRS simply decides to reverse itself and return to previous policy, there is no revenue impact. If the court subsequently overturned the rates, there is no revenue impact. Yet, if the Congress is forced to legislate to overturn the new IRS position, the score is costing $23 billion.

When the House passed the Retirement Security Act, there was no real objection to the House spending $23 billion because no one seems to believe the fairy-tale revenue estimating that accompanies it from you guys. Remember, these are regulations that have never gone into effect, yet we are being told it will cost $23 billion to overturn them. I wonder if you could explain that, either one of you or both.

Ms. PAULL. Well, Mr. Johnson, as I think I indicated at the markup, these are unusual situations, but whenever we are faced with them, I don't think anybody likes the result.

Mr. JOHNSON. That isn't the question. Why are you doing it that way, if nobody else thinks it costs anything?

Ms. PAULL. Well, the reason we are doing it that way is that the starting point for our estimates, our revenue estimates, is whatever present law is. While the IRS may not have enforced the law or maybe they could interpret it a different way, they now have assessed the law to be that an employer should be collecting the payroll taxes because there is no specific exemption from the payroll tax for this item. Even in the absence of their regulations, because we did face this issue in the Senate about a year ago, we would have scored this the same way.

In the absence of a pronouncement by the IRS saying there is no tax, we will never collect any tax on the stock options. Basically, the way the law works is, unless there is a specific exemption from the payroll tax, employers are supposed to pay the payroll tax. That is the state of present law today.

Mr. JOHNSON. I understand, but you don't consider whether the revenue is coming in or not in your estimates.

Ms. PAULL. Well, the revenues are not coming in right now because the IRS said they won't collect any revenue until beginning next year. There was a somewhat de minimis but a mixed bag of revenue that was being collected before the IRS made that announcement. So there has been some tax—I would have to say that it was erratic—but some tax that has been collected on stock options in the past.

Mr. JOHNSON. Do you have anything to add, Mr. Hubbard?

Mr. HUBBARD. No, I will leave it to Lindy to——

Mr. JOHNSON. Well, she is smarter, I think, on that issue.

Let me ask you another one. There are times when the tax consequences of current law preclude companies from engaging in certain business transactions. These same transactions, however, can be performed without any tax consequence by nonprofit organizations in government entities. By not providing a level playingfield, I think in the long run the government loses revenue because only nonprofits are doing the work, rather than tax-paying businesses, and I will give you an example.

A good example is a bill regarding Contributions in Aid of Construction, or CIAC, when privatizing to the U.S. Department of Defense (DoD) water treatment facilities which is House bill 2130. Right now, the DoD can donate existing water treatment facilities to municipal governments and other nonprofits that renovate or replace the equipment and then run the new facility for the DoD. That is privatizing. However, if DoD tries to privatize a water treatment plant using a for-profit business, in other words, if they go out and offer this property to everybody, the IRS says the contribution of the rundown facility is a taxable transaction.

For-profit businesses believe they can outperform traditional water treatment facilities in the long term, even with the burden of paying income taxes which they don't object to. The problem is, they can't start the process with a huge tax burden being taxable of the gift. If this initial layer of taxes is not lifted, I don't think businesses can compete. Would you like to comment on that, and tell me what the tax consequences are for us for private enterprise?

Ms. PAULL. Yes. Mr. Johnson, this is a consequence of, actually, the law. I don't think it is an IRS ruling.

When you make a contribution, it was really designed toward developers. When you make a contribution of the infrastructure to a private facility, the private facility is to include in income the amount of the infrastructure. In this case a water treatment facility, they would depreciate it, and then get depreciation deductions over the life of the property as they were earning the income. That is a——

Mr. JOHNSON. Well, most of these are——

Ms. PAULL. Consequence of the tax law.

Mr. JOHNSON. Most of these are 20 or 40 years old, so they have been depreciated out probably already.

Ms. PAULL. Well, but they were owned, you are saying, by the DoD, so there——

Mr. JOHNSON. Yes.

Ms. PAULL. They wasted away, is what you are saying.

Mr. JOHNSON. Yes.

Ms. PAULL. So then if they are not valued very high, then there wouldn't be much different income derived from——

Mr. JOHNSON. Are you saying it is okay to tax for-profit but not——

Ms. PAULL. No. I am saying that is a feature of the tax law.

Mr. JOHNSON. Can we change that law, and what is——

Ms. PAULL. So you need to change the law——

Mr. JOHNSON. What is it going to cost us to do it?

Ms. PAULL. I don't——

Mr. JOHNSON. Would there be an impact——

Ms. PAULL. Remember that estimate off the top of my head, but I believe we had a——

Mr. JOHNSON. Is there an impact?

Ms. PAULL. Yes, there is.

Mr. JOHNSON. So, you are going to charge us to change the law, even though nobody is making any money off of it right now. It is another case like we just discussed. There is no money coming in from that right now——

Ms. PAULL. The——

Mr. JOHNSON. Because we give it to somebody, you won't——

Ms. PAULL. The facilities have some value, I assume. The facilities have some value, or there would be no tax consequence.

Mr. JOHNSON. Well, Mr. Chairman, I hope we will look at that. You understand what I am saying. Two instances here where we are costing us to make the law change when there is no cost at all, and it is scored wrong. Maybe we need to write some rules on how to score, I don't know.

Thank you very much. I appreciate your time.

Chairman HOUGHTON. Thanks, Mr. Johnson. Mr. Pomeroy?

Mr. POMEROY. Thank you very much, Mr. Chairman.

As you know, there is no one in Congress that I hold in higher regard than you, and so I am glad you are having this hearing.

That said, the hearing—the subject matter of the hearing and the conclusion announced by our Joint Tax Committee expert does cause me some concern. One year ago, we passed a tax plan, and now we are hearing that there is going to be a vote on debt-limitation increase within 13 months of enactment of that tax plan. At the time, no one was talking about any need for debt increases. The forecasts—you were in this room, Ms. Paull, you heard them as well as I did—were quite different than what has happened.

To me, this discussion is like getting lost using a road map, and so you want to get a different road map. You are still lost, and I think we are heading the wrong way, and I don't care how you figure it. We are still heading the wrong way fiscally, and I think that the truth is in the numbers.

You indicate in your testimony there have been some improvements made since 1995 in our ability to do this, but I do want to cite two individuals that testified at a January 10, 1995, hearing. I hold them both in high regard and want us to reflect briefly on their testimony at that time.

Ken Kies, former Joint Tax Committee Chief of Staff, testified problems on dynamic scoring including macroeconomics effects of revenue proposals but not spending proposals would cause a serious inconsistency. Most revenue proposals would have little or no macroeconomic consequence. Complexity and lack of consensus on macroeconomic effects would undermine credibility of estimating process and, finally, macroeconomic analysis would reduce pressure to address the Federal deficit problem.

Now, even though we may have gone some ways in terms of modeling proficiencies since 1995, are those issues still with us today, Ms. Paull?

Ms. PAULL. Sure. Those issues are still present. They are still described in our testimony.

Mr. POMEROY. They are. I note six that you outline. I will talk about them in a minute.

Alan Greenspan is quoted from the same hearing as saying, and I quote: "Unfortunately, the analytical tools required to achieve dynamic scoring are deficient. In fact, the goal ultimately may be unreachable. Accordingly, we should be especially cautious about adopting technical scoring procedures that may be susceptible to overly optimistic assessments of the budgetary consequences of fiscal actions. In summary, the current relatively straightforward scoring system has served us well in many respects."

It almost undeniably produces a more conservative number than dynamic scoring, and, therefore, if we are to try to plan for downside scenarios, that result may not be altogether a bad one from a policy standpoint.

Ms. Paull, do you think so?

Ms. PAULL. Well, I think what was suggested in my testimony was to provide supplemental information that supplements our estimates. Our estimates are still based on the baseline that is provided to us by the CBO, and there is uncertainty in that baseline, especially nobody can predict the downturns in business cycles.

Mr. POMEROY. In fact, I note—I guess I said six. I think it is five. You indicate predicting the effects of business cycle fluctuation, predicting the potential response of the Federal Reserve Board to fiscal policy changes, predicting how the macroeconomic effects of tax policy changes would influence different types of individual and corporate income and international capital flows, sensitivity of results to behavioral assumption and model structure, and, five, consistency of treatment between revenue and spending proposals.

You indicate all of those are very real problems, still, in terms of building a dynamic scoring model, all of which I agree with, and then you come up with a conclusion I don't agree with. So let us build a dynamic scoring model.

You have seen this Committee grab whatever, a number, you will be so well aware, because the number is the creation of you and your staff. It is basically a theoretical abstraction based upon modeling that may or may not have accurate assumptions built into it, but once the dollar is out there, it is as though we have a dollar in hand, an absolutely concrete figure. We commit based upon that figure. That is certainly what happened in the tax vote last year.

Do you really think having one number and, yet, an additional number—one number based on already difficult modeling to project and another number based upon even more speculative, subjectively based dynamic scoring—is going to help our process?

Ms. PAULL. Well, to the extent—I think you came in after I testified. These are issues that we are going to be exploring with a broad spectrum of macroeconomic experts, modeling experts, and we will see if you can come up with a consensus to try to deal with each of these difficult issues.

These difficult issues are not going away. That is the work we are going to be doing this year, and we would invite you to participate, if you wish, in that. You know, this is an issue that I think, to the extent we can find useful information that is—that meets a standard of accuracy, that we would like to provide it to the Congress as a supplement to the estimates that we already provide. That is what we will be working on this year with this panel of advisers, to see what kind of information could be developed that would produce a range of accuracy based on the economic literature and based on the work of, really, experts in the field.

Mr. POMEROY. Thank you, Ms. Paull.

Mr. Chairman, thank you. I believe it is a start down a very slippery slope indeed. I will be happy to be involved in—not in coming up with a new modeling formula, I guess that is a little beyond my abilities, but I will want to keep an eye on what you are doing.

Ms. PAULL. Sure.

Chairman HOUGHTON. Thanks, Mr. Pomeroy. Mr. Ryan?

Mr. RYAN. Thank you, Mr. Chairman. I, too, am not on the Subcommittee, so I want to thank you for allowing me to participate in this conversation. I just flew in from Wisconsin.

So, Ms. Paull, I missed your opening testimony, and you and I have talked about this quite a bit in the past, and to me it all goes down to whether or not we have the truth. When we legislate here, hopefully we are legislating in pursuit of the truth. If we don't know what the consequences, the real-life consequences, are of the policy we pass through this Committee and into law, we end up exacerbating misinformed public policy.

So the idea of dynamic scoring is really a well—well-regarded, well-known, well-honed skill. It is no longer voodoo scoring, voodoo economics. It actually is more appropriately called reality-based scoring. It seems to me that the importance is in pursuit of the truth and in pursuit of making sure that when we measure not just tax relief or tax cuts, but maybe revenue-generating things that don't end up generating as much revenue because they adversely affect personal behavior, it seems that we want to find the truth.

We want to make sure that we, as accurately as, possible measure all of the policies coming out of this Committee. Because there is so much academic literature available on this, there are so many in the field of economics who have worked on these issues, who work on this, who run very well—sophisticated models that are continually updated, that at the very least, it would be important to have transparency in our scoring system so that we can engage in a dialog. We can continue to improve, we can continue to make progress on pursuing the truth with respect to our economic measuring sticks.

So, by involving and incorporating those who are also participating in this process, those who in the private sector—whether it be the Wharton people or whoever gets involved in this process—at the very least transparency, I think, is important.

Lindy, you and I have talked about this, and last summer I raised a number of questions about capital gains tax cuts, capital gains policy, the scoring of it, and about the change in stock prices that result from tax changes and how the change in stock prices affects the change in economic growth, and the change in GDP growth ends up changing revenues.

The fact that we hadn't been incorporating that process—a very, very well-documented process—has led to very, very off scores, very, very misleading scores which impact public policy. You asked me to put to you in a memo—I am not trying to play "gotcha" here, Lindy, but you asked me to give you my concerns in a memo, to which you would respond.

I sent the memo last August; we followed up a number of times. We haven't heard from Joint Tax yet on our concerns on some of those fundamental scoring issues. I understand you talked about your Blue Ribbon panel. Maybe that is where these issues are going to be discussed.

I have two questions. One, I don't know if you want me to go through all of the concerns I raised in that memo on capital gains

scoring. I would like to get your—I would just like to get a commitment that you will respond to that.

Ms. PAULL. Yes. You have my commitment.

Mr. RYAN. Okay. Soon, please.

Ms. PAULL. Okay.

Mr. RYAN. It has been a while.

Also, what do you hope to get out of this Blue Ribbon panel? Is this Blue Ribbon panel—is it going to be like the 1997 JCT Symposium where we got a lot of good testimony, where we heard about the new macroeconomic modeling techniques, where we saw how much more accurate they were; or is it going to be a panel that actually produces results?

Is there a time line? Is there going to be more transparency coming from this? Will there be specific recommendations that will be implemented from this, or what?

Ms. PAULL. Those are great questions. Let me tell you—let me describe to you what we have in mind and also invite you to participate, if you wish.

We will be holding two sessions, at the moment, with these advisers, one in June and one in September. The first session will involve a detailed description of the model that we—the framework that we purchased, and then all of the modeling work we did basically in-house since then, so that there is a discussion about—kind of critiquing the work that we have done. At that same session we planned to have done a simulation and will present the simulation to the advisers as food for thought also.

Mr. RYAN. From your current model?

Ms. PAULL. Yes. Then we would be requesting some input on the kind of information that would be useful to be provided as a supplement in a lot of detail as opposed to, yes, this would have a positive or negative effect on various factors, but in a lot more detail.

Then we would be doing a second simulation during the summer—many of these are academics where it is difficult to get them to meet in the summer, so early September is when we would be following up—and we would be, at the first meeting, asking for input on what additional simulations they would like to see us do. We would be presenting that information at the follow-up session so that—and, again, having a full discussion and critique about the results or the ranges of results and the different, alternative kinds of assumptions you might be making. Then we would be publishing the results of that. We would then be making improvements.

I think that the staff that has been working on this project, all but one participated in 1996–1997, were benefited greatly from the discussion of the modeling, having experts in the room discussing modeling issues, and bringing to their attention the various types of research and concerns that we would be raising with them. So, it is a nuts-and-bolts kind of a session, not just reviewing other people's work.

Mr. RYAN. It seems like it is a very constructive thing to do, but would you agree that it would be even more constructive to do it on an ongoing basis, meaning——

Ms. PAULL. Sure.

Mr. RYAN. Releasing the data, releasing your R-squares, releasing all of the supporting data you have when you release a score, and releasing all of the supporting data within the model on an ongoing basis so that the public—so that those who are engaged in econometrics can send you suggestions, can evaluate the modeling.

Maybe then you will be able to mark and put your model up against other models to see from now on whether or not they are closer in reaching the truth than other models. If not, maybe you can learn some from the models that have been more accurate.

If you go back historically, I think you will find some other models more accurately predicted revenue effects from different changes in tax policy. So, I think that it would be helpful to have more transparency at Joint Tax, and at the Treasury Department, of course, and maybe we can learn something from these other models that have historically been shown to be a little bit more on the mark on revenue changes than the models we use here at Office of Tax Analysis, OTA, and at Joint Tax.

Ms. PAULL. Well, Mr. Ryan, we have provided detailed descriptions of our models periodically, and we haven't updated that recently, and we plan to. I am not sure if you want something different from—I mean, those are quite detailed——

Mr. RYAN. Something that is accurate.

Ms. PAULL. Models. The problem here is, of course, we are available to discuss with anybody the assumptions that underlie our estimates, but we have a small staff.

Mr. RYAN. I know.

Ms. PAULL. We produce over 4,000 estimates a year in recent years.

Mr. RYAN. I know you do. You guys——

Ms. PAULL. For us it is very labor-intensive work for people who don't care—all they want is their number—for us to do that kind of detailed analysis with respect to every estimate that we produce.

Mr. RYAN. I realize that. That is why I have been patient since my August memo to get a response.

Ms. PAULL. Yeah. This estimating—building this model is really oriented toward large proposals as opposed to a lot of the kind of day-to-day stuff that we do.

Mr. RYAN. That's right, but these large proposals impact the day-to-day numbers, the day-to-day estimates, and they impact whether or not we are getting closer to reality or the truth. We will not. Then we will make better decisions.

That is more of a statement than a question. I see my time has run up.

Lindy, I appreciate what you guys do. You guys work very hard down there. Every time I leave the building late at night, you guys are still there. So you have great staff, and you have hardworking, intelligent people. It is just the concern that every time we conduct tax policy, I fear that there is a bias against incorporating the real effects, and we miss the truth sometimes.

We all can improve, and I just hope that we can have open minds to improve our models and to have transparency, so we can have a good exchange to try and better perfect what we do here. That is all.

So thank you. Appreciate it, Mr. Chairman.

Chairman HOUGHTON. Thank you, Mr. Ryan.

Well, I guess I am the last one on the panel. I would like to ask you a couple of questions.

Mr. Hubbard, when you were a Professor of Economics at Columbia University—I think it was 1995 we began discussing this dynamic scoring system—what has changed since those days?

Mr. HUBBARD. Well, I think the topic remains very, very important. There are always new developments in economics, but to go back to Mr. Ryan's question, I think that what has changed is an increasing indication of interest and willingness on the Committee for this sort of information.

Chairman HOUGHTON. Ms. Paull, you were what in those days?

Ms. PAULL. I was working for the Senate Committee on Finance.

Chairman HOUGHTON. Did you get into this issue at all?

Ms. PAULL. Yeah. I think that interest in this issue is shared among certain Members of the Senate Finance Committee, as well, sure.

I met Mr. Hubbard—the first time I met him was over the capital gains tax back in the early nineties, when he was serving at the Treasury Department—or maybe it was the early—late eighties, serving at the Treasury Department, and the Senate Finance Committee was considering whether or not the capital gains tax was too high. He went and did a thorough briefing on all of the economic literature in that area, which, you know, there is—there are selected topics in revenues where there is significant economic research, but it does not cover all of the areas that we have to cover when we are doing revenue estimating. There are some very significant areas, and we keep abreast of that research, and the research is ongoing.

Chairman HOUGHTON. Are you possibly saying that the difficulty with dynamic scoring is that the science, or the number of people required to do the analysis, is not there?

Mr. HUBBARD. I don't think, Mr. Chairman, that dynamic scoring, in and of itself, is harder or subject to greater uncertainty than the estimates that you see. I think, though, that what you wanted is just additional information. I think you have a right and, I would humbly suggest, a responsibility to know the economic-growth consequences of the policies that you consider. So, I think it is something you should well pursue.

Chairman HOUGHTON. One of the things that always intrigued me when I was first on the Committee on Budget is that, as contrasted to business where no business, I think, can exist without the static scoring system because you couldn't get a return on investment, and payback you wouldn't know, but you would spend X amount of money, and yet, you wouldn't really record if that was fruitful money invested.

That was always very difficult for me to understand, because our job as Members of this Committee, or as Members of the Budget Committee, is to see whether there is a proper return for the citizens of this country. One of the things that I am always interested in is trends in impact and effect, making sure that we are on the right track, and I am not sure that we coordinate properly.

For example, I would be very happy, whether it is static or dynamic scoring, to be able to have regular reports in terms of, you know, you are doing an appropriation on the XYZ project. This is what happened last year, this is what happened 5 years ago, this is what the result was. I don't think we mesh our information together.

Do you have any comments to make on that?

Ms. PAULL. Well, I think those are very important oversight functions, and typically what happens as opposed to having a comprehensive oversight plan, we end up picking and choosing which things we are going to look at by sending the GAO out to look at it or whatever.

I mean, our function is principally oriented toward the legislative process and not looking back at what is already achieved. So, your Subcommittee is an oversight Subcommittee and often needs to use other resources to be able to do that, because we are so focused and busy all the time with the legislative process.

I think you have a valid point and not enough attention is paid sometimes to whether or not tax proposals are achieving the purpose for which they were designed.

Chairman HOUGHTON. I am comfortable operating on 1 year budgets, but if you have got to go 20 years, you take a look at a 1-year budget, and you can say there is 90-percent probability. For a 5-year budget, maybe it is 50 percent. For 10 year budgets, maybe it is 20 percent; 20 year budgets is 20 percent.

I don't think we evaluate those things. You give us the figures, and we are not interacting with you, and I think that is a real mistake.

Ms. PAULL. Well, it is hard to go backward and evaluate, especially in the tax arena, as to—because the tax law, there are so many things that can affect particular—sometimes it is a very narrowly crafted provision, and you can look and see what has happened. Often there is interaction with a lot of other things, and it is hard to pinpoint what the effect was of any one particular item.

So, it is difficult for us to go back and look and see if we did a good job estimating a particular item, especially when you are talking about the individual—overall individual income tax, where a lot of changes have been occurring recently.

Chairman HOUGHTON. I always remember the story of—I think it was John Gardner—in 1965, when Medicare went in, and they estimated 25 years out, 1990, that Medicare would cost something like $12 billion for the country. I don't know how many hundreds of billions of dollars—if we had had dynamic scoring, would we have done a better job?

Ms. PAULL. No.

Chairman HOUGHTON. Why not?

Ms. PAULL. Well, I think that one is one of the legendary—there are a number of legendary items—that is, we just—the estimations. This was not out of our office, so I can't really give you a full flavor of why. This is something that was estimated by the CBO, I believe, or maybe it predates them even.

I would just note to you that on the revenue side, every year, we update our big models, the individual income tax model, the corporate income tax model, and with the latest information and with

the latest macroeconomic estimates of the forecast of the CBO. I think every year our modeling does improve, and that is, I think, the most you can expect from this kind of a process that is not precise. The consistencies and the improvements all lead you in a direction that provides—that is providing you with more accuracy.

I think that is what is happening on the spending side also at the CBO. They are much better at estimating the proposals now than they were then, but brand-new programs, just like in the tax law, brand-new tax credits—let us say, for something brand-new, there is a high level of uncertainty because you have no experience in estimating those kind of things. It is good to put a sunset on them and reevaluate over a period of time.

Chairman HOUGHTON. Mr. Hubbard, are there other countries that do a better job of forecasting or estimating than we do?

Mr. HUBBARD. Well, the truth is, it is hard everywhere. Economists here are just as two-handed as they are anywhere else in the world. It is very hard to forecast receipts generally, not so much because of dynamic scoring issues, macro-issues, as shifts in relationships.

For example, what is the relationship between receipts and taxable income because of executive compensation or other issues, all of these are factors? So, I think it is very difficult around the world.

Chairman HOUGHTON. If you were setting up a scoring system and your projection was for 10 years, wouldn't you tell those people who would appropriate the money—let's say, 3 years out into the 10 years—if there had been some major disruption, that there was a disruption and those figures were going to be dramatically impacted?

I don't see the give-and-take.

Mr. HUBBARD. Well, I think, to go back to Lindy's answer, that would be an appropriate oversight function. It is not clear that it is so much a revenue function, as going back and back-casting, if you will. It is difficult, because many other things have also changed in the economy, but I agree that both for spending and for receipts, you would like some sense that the forecasts you have been given at the beginning were true.

Chairman HOUGHTON. Is on track or not. Right.

Do you have any questions? No?

Do you? Any other comments you would like to make?

Well, I thank you very much for your testimony. There being no further business before the Subcommittee, the hearing is adjourned.

[Whereupon, at 3:20 p.m., the hearing was adjourned.]

[A submission for the record follows:]

Statement of Wilbur A. Steger, Ph.D. and Frederick H. Rueter, Ph.D., CONSAD Research Corporation, Pittsburgh, Pennsylvania

DYNAMIC SCORING EXPERIENCE: TAX BILL OF 2001

1.0 Introduction

The purpose of this report is to describe an analytical modeling effort performed by CONSAD Research Corporation, to design, implement, and analyze policy analysis models, the results of which were to be utilized by parties involved and interested in Hearings before the Senate Finance Committee's Subcommittee on Taxation and IRS Oversight on "Preserving and Protecting Family Business Legacies". This report draws heavily on Dr. Wilbur A. Steger's "Testimony before the Senate Fi-

nance Committee Subcommittee on Taxation and IRS Oversight on 'Preserving and Protecting Family Business Legacies'" (March 13, 2001), as well as an earlier Final Report, "The Federal Estate Tax: An Analysis of Three Prominent Issues" (February 7, 2001), prepared by CONSAD for the Food Marketing Institute. Dr. Steger's colleague and Vice President of CONSAD, Dr. Frederick H. Rueter, participated on an equal basis in all these efforts; Mr. Scott Kinross, a CONSAD analyst, participated throughout, also.

Many analytic/modeling tools were used in addressing issues. In Section 2.0, below, we review the results of macroeconomic (more precisely, regional econometric) modeling estimating outcomes—changes in regional and national product and employment, and in Treasury revenue—resulting from reductions and, then, elimination of the Federal estate tax. Relative to such outcomes, other analytic investigations have examined changes in liquidity-related vulnerability of family-owned businesses due to changes in the estate tax; and the prevalence of family-owned businesses in taxable estates. Section 3.0 analyzes other effects of reducing and/or estimating the estate tax, particularly that relating to the growth of unrealized capital gains in the hands of heirs, and the related revenue effects.

The above analyses, and those described below, would be described, by some, as "dynamic scoring", i.e., reflecting prospective behavioral (micro) and aggregative (macro) effects (see statement on "Dynamic Scoring", Kevin Hassett, American Enterprise Institute, May 2, 2002 for current thinking about and attitudes toward the inclusion of such effects on the policy-making process). Section 4.0 discusses the implications of the experience described in this paper for future dynamic scoring efforts.

2.0 Summary of Macroeconomic and Related Effects of Reducing or Eliminating the Estate Tax

There is a lengthy and complex history to deliberations regarding the estate tax and capital gains. The March, 2001, Senate Subcommittee on Taxation and IRS Oversight was unique, however, since they focused on the economic effects on family business and workers of reducing or eliminating the estate tax, and of the direct and side effects of freeing locked-in capital markets.

First, CONSAD addressed the issue of the **magnitude** of the problem and explored, explicitly, who is impacted. We were able to find a more accurate measure for defining the financial attributes of an estate that includes a family-owned business. The summary data that the Internal Revenue Service (IRS) has compiled from estate tax returns indicate that the assets of family-owned businesses are sizable portions of the estates reported on a substantial percentage of taxable estate tax returns. Rather than being less than 500 in a typical year, we estimated the total number of taxable estates that consist largely of family-owned businesses likely exceeds 10,000 annually.

Based on macroeconomic modeling, we found that important economic benefits would result from the reduction or elimination of the estate tax and, in the context of repeal, changing the basis for taxing capital gains. These effects include the following:

- **Aggregate economic effects are positive.** Currently, many small business owners, and estates with non-liquid assets, must break up their business or holdings in order to raise money to pay their estate tax debts. All sides of the debate agree that this has a considerable disruptive effect on many family businesses, including farmers. Proposals to reduce or eliminate the estate tax would make it much easier for these businesses to continue to operate without undue disruption. The research CONSAD has conducted estimates the macroeconomic consequence of the elimination or substantial reduction of the estate tax: i.e., the extent to which these would beneficially affect employment, national income, and economic output. While we did not consider (in that report) the revenue and economic effects of the carryover of basis, as called for in many legislative proposals, we continue to believe that the investment and liquidity-enhancing effects of the elimination or reduction of the estate tax will increase the survivability of family business and their positive effects on local and regional economies. Our research also confirms the benefits of speeding these effects, e.g., through immediate reduction or elimination, particularly if and as economic conditions worsen. Here, CONSAD used an economic forecasting model developed by Regional Economic Models, Inc. to estimate the effects of the resulting changes in those peoples' consumption and investment spending on the aggregate economy: this is one of the few macroeconomic models that take account of differences in regional productivity, energy sources and uses, and industrial structure. The estimates indicate that eliminating the tax would result in an initial surge in gross do-

mestic product (GDP), the aggregate value added for all firms in all industries throughout the economy. Then, by the fourth year after the repeal, the benefits from reallocating resources toward investment, tempered by monetary policy aimed at averting inflationary pressure, would stabilize and yield steady growth in value added.

- **Revenue losses will be lower than were initially anticipated.** Experts differ on the estimates of the precise revenue consequences of both eliminating the estate tax and changing the tax treatment of capital gains. Our ongoing research appears to indicate that the revenue gain from the correlate change to the carryover basis will yield annual revenue gains beginning at $5 billion and gradually rising to more than $15 billion yearly. The change in basis at death will lead to more revenue gains than are currently contemplated (see below, Section 3.0). Similarly, while we did not estimate the revenue consequences for the Treasury of the macroeconomic effects described immediately above, they would be positive and substantial.
- **Preserving family businesses.** Currently, families and estate executors face a complicated set of overlapping tax rules that include the estate tax, capital gains tax, and the gift tax. Many Americans devote considerable time and resources on estate planning to arrange their personal and business affairs in an attempt to minimize their total taxes at death. Unfortunately, without such planning, some estates face an unnecessarily high tax burden that hurts families and small businesses. In the ideal economic model, the simplification of the tax code that would flow from the elimination of the estate tax would result in a clearer picture of expected tax burdens at death, and free up resources now spent on navigating the maze of the tax code.

3.0 Elimination of the Estate Tax and Unlocking Unrealized Capital Gains

Since the middle of the last century, this subject has enjoyed an active history. Not surprisingly, during the early years of the Clinton Administration, the President's economic think-tank called for an end to the (income) tax exemption for unrealized capital gains held when a person dies. This proposal cited an ultimate revenue yield of $5 billion per year as well as enhanced equity as justifications (Shapiro, 1992). This marked the approximately fiftieth anniversary of the pathbreaking article on this subject—with a similar objective to President Clinton's—by the celebrated income tax specialist and reformer, Stanley S. Surrey (Surrey, 1941).

3.1 Background and History

Professor Surrey was destined to bring this important notion, and an affirmative assessment of its constitutional validity, to the attention of Presidents Kennedy and Johnson while serving as their Assistant Secretary of the Treasury for Tax Policy during the 1960s. Under President Johnson, a Treasury Department study recommended taxing gains as income on a decedent's final tax return. Then House Ways and Means Chairman Wilbur Mills, working with Surrey and the principal author of this report (Steger, 1957, 1961) during this period, held committee hearings on this and closely related income and estate tax subjects (Steger, 1959; Heller, 1955). Also during this period, leading public finance economists of the day (F.M. Bator, R. Blough, J.K. Butters, R.F. Gemmill, J.K. Lintner, L.H. Seltzer, H.M. Somers, L.E. Thompson, and others) provided excellent insights into prospective economic and equity effects of taxing capital gains as though realized at death and/or disallowing the stepped-up basis.

Most recently (2001), tax expenditure estimates by the Treasury Department's Office of Tax Analysis, based on a retrospective analysis, were indeed quite high. Conversely, the CBO estimate of revenue gain appears to have been lower, as explained below. Such analyses were performed using different, but reconcilable, assumptions. The estimate in Mandate for Change (Shapiro, 1992), for example, assumed the continuation of the current exemption for capital gains on assets willed to a spouse or donated to a charity, as well as gains in a small business or a farm, and provides additional exemptions (up to $125,000) for gains from the sale of a residence.

- Aside from its uncertain but clearly substantial revenue consequences, a variety of economic and equity reasons were advanced for reform of the tax treatment of assets at death (Steger, 1957, 1959, 1961; Surrey, 1941; CBO, 1992; Butters, 1953):
- Reducing the disparity between those who save through an appreciating asset and those whose income is entirely taxable (i.e., the Haig-Simons-Vickery economic concept of taxable income)
- Reducing the incentive for investors to hold assets until death to avoid capital gains taxes (the "lock-in" effect), thus diminishing (or preventing) the blocking of otherwise economically efficient investment decisions

- Assessing a tax on income at death involves adverse consequence for economic incentives and efficiency during lifetime, both for the decedent and their heirs.

The Bush Administration (2001) appears to have supported the tax treatment at death for unrealized gains described in the Kyl-Breaux Estate Act of Tax Elimination Act of 2001. (There were similar arrangements in other bills.) The proposal allowed every individual to continue to step-up the tax basis of assets in his or her estate to the fair market value at the date of death, subject to an overall limitation on untaxed capital gains of $2.8 million per individual (or $5.6 million per married couple). The per-person exemption was to be indexed for inflation. The limited step-up in basis would protect small estates from any new capital-gains tax liability and reporting requirements. Such liability and reporting requirements was to apply only to estates with unrealized gains in excess of $2.8 million (or $5.6 million in the case of a married couple). Other bills took different approaches, also using the decedent's tax basis in one way or another.

Questions have been raised about these unrealized capital gains—considered together with the degree to which the estate tax is curtailed or eliminated:

1. What is the current magnitude of these unrealized capital gains and their distribution among asset classes?
2. What would be the revenue effects of various treatments (e.g., degree and method of carryover, phasing, grandfathering, etc.)? How would each variation affect the current estimates of the decrease in tax revenues that would result from repealing the estate tax?
3. What effect on the economy would result from alternative treatment, in terms of employment and output in specific industrial sectors by state and region. How might these economic effects alter estimates of impacts on tax revenues?
4. What would be the effect on different demographic groups (e.g., income, age, family type) from each treatment variation?

CONSAD conducted a preliminary analysis using a regional econometric model and associated analytic software and interpretation of tax research results to estimate the revenue, economic, and demographic consequences of a set of "what if" realization patterns of these capital gains. This research is ongoing.

3.2 Estimating Consequences

Consider, **for illustrative purposes** only, that $15 trillion for capital gains (in current dollars) are created and accrued over a 25 to 30 year "generation" of tax-paying earners. This rough estimate draws upon research findings made by Steger (1957, 1959) and, thirty years later, by Gravelle and Lindsey (1988) that: (a) on average, only 3.1 percent of the stock of accrued gains are realized in any given year, over a 25-year period; and (b) that realized capital gains in each year average only 24 percent of the total capital gains accruing to the household sector in that year, specifically:

- **Approximately fifteen trillion dollars (more or less, as of late 2001) of unrealized capital gains will become more free and fluid to serve the interests of American businesses and their workers.** We have come to know, through research and judgment [Steger, 1957; Gravelle and Lindsey, 1988; Burman, et al., 1997; Auten and Joulfaian, 2001 (forthcoming)] that there is an immense pool of accrued but yet **unrealized capital gains. As estimated above, these currently amount to as much as $15 trillion,** and are growing. Proposals to transition from the stepped-up tax basis for capital gains to the carryover basis will result in increased revenues, partially offsetting the loss in estate tax revenues. The stepped-up basis will, by and large, diminish in importance with the elimination of the estate tax.

Many economists believe that the majority of capital gains, under the current system (with a stepped-up basis), are **never realized,** but, instead, are passed on to heirs with a step-up in basis or given away in a tax-free transaction. It would seem that, were unrealized gains taxed at current capital gains tax rates, either at death or to heirs over their lifetimes, a yearly equivalent of many billions of dollars in **additional** taxable gains might result. How would these complement the current revenue of approximately $90 billion for realized capital gains?

During the spring of 2001, CONSAD conducted a new study of the economic and revenue consequences of then-current alternative proposals, using analytic software and matching databases addressing the following issues related to the reduction or elimination of the estate tax and its capital gain correlates:

- Federal government revenue changes (from both the income and the estate tax),
- Changing patterns of capital gains realization,
- Changing acquisition and disposition patterns of capital assets.

The possible **economic** and **fiscal** impacts range from relatively minor to significant. The purpose of this research was to narrow the range of prospective outcomes, such that they would provide information helpful in distinguishing among alternative policy options.

In addition, through the study of the positive aggregate economic effects of the elimination of the estate tax (Section 2.0, above, employing the most widely utilized regional econometric model), we discovered that reducing or repealing the estate tax would free up substantial resources for alternative purposes. The heirs of people who die would inherit additional funds that otherwise would have been collected as taxes. Also, the resources that people now expend (i.e., planning costs) to mitigate the consequences of the estate tax would be released for other uses. We also discovered that the aggregate gains in value added in the majority of U.S. industry substantially exceeded the decreases that would occur in the few industries that would experience decreases in demand for their services due directly or indirectly to the reduction or repeal of the estate tax. This research also established the additional benefit, particularly in tight economic times, of making the reduction or elimination take place as quickly as possible, including immediately. Our ongoing research has altered these estimates only slightly while, at the same time, realizing increased revenues to the Treasury.

3.3 Interim Results: Incorporation of Behavioral Consequences

The combination of the estate tax and the stepped-up basis at death determine the total tax paid by estates and their heirs. So, alternatively, would a system with no tax (at death) on estates and a carryover (primarily) of basis. However, just as it took time for the current system to settle into a relatively predictable pattern, it will take years for any new system to settle into its routine.

This section summarizes the results that have been produced by the model that CONSAD has developed for estimating the changes in government revenues that would occur under a number of proposals that change provisions of the estate tax, the gift tax, and the generation-skipping transfer tax. [This draws heavily on research performed by Douglas Holtz-Eakin (see References, below).]

The elimination or phasing-out of these transfer taxes would naturally lead to a decrease in government revenues. Our analysis indicates that there are several behavioral responses to a change in tax structure that would offset at least a portion of the revenues forgone.

In particular, there would be a positive effect on the rate of capital gains realizations by older people who currently experience a "lock-in effect" as they age and plan for their demise. If the existing step-up in the basis for measuring taxable capital gains is replaced with a carry-over in basis, these people will likely realize gains at rates similar to those observed for somewhat younger people. These extra realizations by prospective decedents would be taxed at the capital gains tax rate, and would yield additional government revenues.

The second behavioral change relates to realizations of accrued capital gains bequeathed to the heirs of large estates. These realizations would also be taxed at the capital gains tax rate throughout the lives of the heirs, adding revenues to the government throughout the period after initiation of the carry-over in basis.

CONSAD has developed a computer model that estimates the effects of these behavioral changes and revisions of tax structure on government revenues. [A description of the general procedures (translated to a computer model) for estimating incremental capital gains realization and associated tax revenues under specified realization and carryover assumptions is available on request.] The methods and evidence used to model each of these effects are discussed briefly below. (The associated databases and explanation of the calculations are available on request.) Then, the estimates developed for several specified tax reform scenarios are summarized briefly.

Realizations by prospective decedents—The empirical research literature suggests that under the current estate tax system the wealthy begin to experience a "lock-in effect" after age seventy-five. With the elimination or phasing-out of the tax at death, people will lose the incentive to retain the accrued capital gains in investments in anticipation of death. Instead, they will be free to exercise the opportunity to realize and re-invest accrued capital gains at rates similar to those that they were applying earlier in life. Such behavior will generate additional capital gains tax revenues for the government.

Realizations by heirs—People who inherit wealth can be expected to use that wealth in ways that are similar to the use observed for others in similar financial

circumstances. In addition, the economics literature suggests that inheritances provide windfalls that fundamentally change some people's economic behavior, such as their participation in the labor force and their willingness to become entrepreneurs. The elimination or phasing-out of the estate tax also naturally increases the amounts bequeathed to heirs. Initiation of a carry-over in basis for measuring taxable capital gains will cause these actions and events to yield additional revenues for the government.

Phase-out of tax provisions—Phasing out of the estate, gift, and generation-skipping transfer taxes over several years can be accomplished in many ways. All of them will involve, at least, reductions in the tax rates applied to the values of assets contained in the estates, and increases in the amount of assets that can be bequeathed without incurring tax liability (the Unified Credit). Changes in those provisions of the transfer tax structure will produce changes in the average tax rates that effectively are imposed on estates of different sizes. In comparison to the current situation, estate tax revenues will decline; however, in comparison to immediate repeal of the taxes, additional government revenues will be collected.

Results derived for specified scenarios—In the initial application of the computer model, CONSAD has analyzed three scenarios for potential changes in transfer tax policy. Two scenarios consider the immediate repeal of the estate tax. In Scenario One, repeal is combined with a phased-in limitation of the step-up in basis (i.e., a phased-in provision of carry-over in basis) over five years. In Scenario Two, repeal is accompanied by immediate establishment of a limited step-up in basis at the high level proposed in the Kyl Proposal (S. 275). In the third scenario, the transfer taxes are phased out over a four-year period, after which the taxes are repealed and a limited step-up in basis is established at the maximum level specified in Scenario One. The government revenues estimated for the three effects throughout the ten-year period from 2002 through 2011 for those scenarios are summarized in the following table:

Source of Tax Revenues	Scenario One	Scenario Two	Scenario Three
Capital Gains Realizations by Prospective Decedents	$18.7 billion	$11.5 billion	$17.7 billion
Capital Gains Realizations by Heirs	$86.2 billion	$70.8 billion	$26.9 billion
Estate Tax Revenues during Phase-out	.....	.....	$58.5 billion
Total Incremental Government Revenues	$104.9 billion	$82.3 billion	$103.1 billion

The amounts reported in the table are offsets against the transfer tax revenues that would be foregone if the transfer taxes were immediately repealed. In response to suggestions by model users, we are still refining the estimators that we are using for some calculations. Thus, some of the values in the table may change slightly when the final calibration of the model is completed.

4.0 Concluding Remarks

Those who have looked at the policy/budgetary process and the history and future of dynamic effects when scoring spending and tax bills (e.g., "Dynamic Scoring", op. cit.) have not said "put these aside". Rather, they have focused on better ways for Congress (JCT), the Federal Reserve, CBO, et al., to use their revenue estimating staffs and what "information revelation" practices would accompany such changes.

The technical approaches discussed in this report (Sections 2.0 and 3.0) found their ways into the above organizations (as well as the Treasury, CEA, and NEC)—during the estate tax debates and discussions of the 2001 Tax Bill primarily—and, indeed, appeared to have the intended effect: to raise questions about "official" estimates produced and used during the final discussion process. Where the behavioral effects—of prospective decedents and/or unrealized gains-heavy heirs—had been reported in reputable research journals, where the modeling software utilizing these finding was transparent and available for validation and sensitivity-testing purposes, and where these models could be turned over (for use) by parties involved in the many (often closed-door) discussions—we believe that such dynamic effects had telling consequences, in opening up minds and discussion.

We believe there is a role—semi-academic, semi-policy analytic—for such "entrepreneurial", informed intrusions into the process. We predict these "intrusions" will

become more welcome with time and with increasingly successful instances of behavioral effects/scoring. There are two arenas where we believe these instances will occur more often:

1. The two way and interactive causality of the personal income tax systems with respect to the size (e.g., wage bill) of the business yielding that income. How income from a business (corporation or subchapter C or S) is taxed leads to more or less savings/income to invest in a business as well as its liquidity position (research by Henry Rosen, James Poterba, and Douglas Holtz-Eakin) and, therefore, the ensuing and affected elasticity of the wage bill (i.e., "jobs").
2. The personal tax system's incentive effects (vis-a-vis capital gains and losses) on entrepreneurship opportunities and self-employment investment (Poterba).

Figures 1 and 2 represent an attempt to describe a general framework for subjects where behavioral research could be put to unified policy analytic studies; and how CONSAD's work, to date, does its technical behavioral scoring work.

5.0 References

A complete list of references drawn upon for writing this paper is available upon request of the longer version of the paper.

ATTACHMENT

Figure 1: Framework

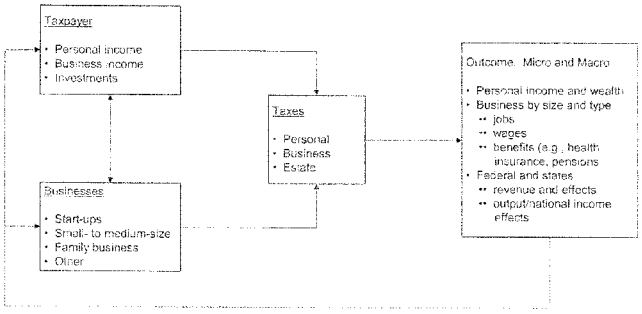
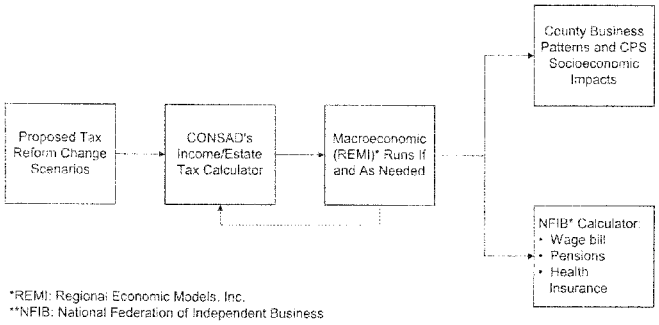


Figure 2: Calculator Scheme



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