WRITTEN STATEMENT SUBMITTED FOR CONSIDERATION BY
COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

HEARING ON THE INTERACTION OF TAX AND FINANCIAL ACCOUNTING ON TAX REFORM

HEARING DATE: FEBRUARY 8, 2012

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I am the president of Fiscal Associates, a consulting firm specializing in the economics of taxation. For 16 years, I was an economist in the Office of Tax Policy and the Office of Economic Policy at the Treasury Department. In total, I have spent more than 45 years building economic models and in analyzing how changes in taxes and other factors affect business capital investment decisions and how those decisions affect overall economic growth.

The Committee has asked for information on "the interaction between tax policy and accounting rules so that we [can] make informed decisions about which policy choices will help employers grow and create jobs." The Hearing Advisory suggests that "comparing a rate cut with expensing requires consideration of the impact of financial accounting considerations on business investment decisions."

The purpose of this submission is to address two questions. First, do companies make investment decisions based on the actual impact the project will have on the company's net worth or on how the project will be presented by accountants on the financial statements? Second, will a tax reduction spread across both old capital investment and new capital investment (such as a cut in the tax rate) yield as much new investment and GDP growth as a tax reduction focused solely on new investment (such as first-year expensing or accelerated depreciation)?

How Is The Investment Decision Made?

The answer to this question is found by looking at how business investment planners actually do their jobs. For years, all business schools have taught some variant of "wealth maximization" as the method that should be used in the analysis of new investments. The reason is simply a matter of mathematics. No other method will yield a more accurate result or better inform the decision to make or forego a capital investment.

Given that wealth maximization is what is taught, what is used in the field in actual practice? A 2001 study by John Graham and Campbell Harvey of Duke University surveyed businesses about how investment decisions are actually made.[1] They state:

> It is a major tenet of modern finance theory that the value of an asset (or an entire company) equals the discounted present value of its expected future cash flows. Hence, companies contemplating investments in capital projects should use the net present value rule: that is, take the project if the NPV is positive (or zero); reject if NPV is negative. But if NPV has been the dominant method taught in business schools, past surveys have suggested that internal rate of return (IRR) was for long the primary corporate criterion for evaluating investment projects. For example, a 1977 survey of 103 large companies reported that fewer than 10% of the firms relied on NPV as their primary method, while over 50% said they relied mainly on IRR. Although the two measures are similar in several respects (and will lead to the same "go-no go" decision if the same hurdle rates are used), the critical difference is that IRR is a ratio while NPV is a dollar measure of value added.
>
> …most respondents cited net present value and internal rate of return as their most frequently used capital budgeting techniques; 74.9% of CFOs always or almost always used NPV and 75.7% always or almost always used IRR. As noted earlier, however, large companies were significantly more likely to use NPV than were small firms.

It seems clear that potential financial statement presentations by accountants have little influence on capital investment decisions, in either practice or logic. Rather, most firms -- especially large firms -- use discounted cash flow to make such decisions. Similarly, the Committee should be persuaded by how its tax policies affect the net present value of potential capital investments, not by how such policies affect financial statement presentations.

Which Tax Policy Is Best?

This question is addressed by looking at two alternative reductions in business tax burdens. As suggested by the Hearing Advisory, the two options considered are either (1) to reduce the business tax rate or (2) to provide more rapid cost recovery.

The controlling issue is as follows. Will first-year expensing be more helpful to GDP and jobs growth than a rate cut that has the same static revenue cost?

A tax policy change that increases economic activity and maximizes GDP growth is one that decreases the cost of producing output, thereby allowing the price of the output to be lowered and more units to be sold. On the assumption that labor costs and the purchase prices of capital goods are constant, the tax policy change must, therefore, focus on lowering the tax component in the cost of capital investment. Perforce, the preferred tax policy choice is the one that most reduces the cost of capital investment and most increases GDP growth per dollar of revenue cost.

[1] John Graham and Campbell Harvey, "The Theory and Practice of Corporate Finance: Evidence from the Field", *Journal of Financial Economics*, Vol. 60 (2001).

The following Impact Table illustrates that first-year expensing is superior to a rate cut with a comparable revenue cost. As explained in the Technical Analysis, similar results obtain when an acceleration of depreciation is compared to a rate cut.

Impact Table -- Two Tax Cut Alternatives

The Tax Reduction	Capital Cost Reduction	Output Price Reduction	Annual GDP Increase ($B)	Annual Revenue Cost ($B) [2/]	GDP per Revenue Dollar
First-Year Expensing	1.3%	0.5%	121.0	33.7	$ 3.59
Rate Cut	1.0%	0.3%	88.5	33.7	$ 2.63

[2/] Cost in the ten-year budget window.

The relatively poor performance of the rate cut alternative in the Impact Table is not surprising, nor is it unique to the analysis here presented. It has long been understood that a dollar of tax reduction spread across both old and new capital investment (as in the case of the rate cut) will boost GDP growth substantially less than a dollar of tax cut concentrated on new capital investment by means either of first-year expensing or accelerating depreciation.

Rate cuts can, however, play an important role. A large benefit to GDP and jobs growth can be obtained by the combination of first-year expensing and reduced tax rates. This is the preferred tax policy from an economic growth perspective.

The least efficacious tax policy is to "pay for" a lower tax rate by reducing presently allowable depreciation deductions. According to our analysis, the GDP growth rate would tend to be reduced, not increased.

The analysis underlying the Impact Table, how it was constructed, various of its implications and other relevant comparisons are explained below.

Technical Analysis and Other Comparisons

We need to create alternative policy changes to determine if it is better to offer a rate cut rather than more rapid cost recovery or other direct incentives for new investment? We will look at a "rate cut" which lowers capital cost by one percent, $33.7 billion. The rate cut applies to both old and new capital.

We will compare two related cost recovery alternatives to the rate cut. Both alternatives will concentrate the revenue cut on investment, new capital, rather than all capital as the rate reduction does. The first alternative will spread the cut evenly across the life of each asset to portray "improved cost recovery allowances". The second will provide the cut immediately to equipment investment in order to portray bonus or "immediate expensing".

All three plans have the same cumulative budget cost. The differences arise in timing and in impact on the firm's decision to invest. The table below shows the pattern of benefits and the budget costs the three alternatives. The "rate cut" will provide a uniform benefit (one-fifth of the total benefit) to capital invested in each of the last five years. The "improved cost recovery" will provide a uniform benefit (one-fifth of the total benefit) to new investment for each of the years of its use. The "immediate expensing" will provide the total benefit at the time of investment.

Three Capital Tax Reduction Plans
Revenue Benefit and Cost by Year

Year Bought	Benefit Over Life	Revenue cost in year: 0	1	2	3	4	5	…
Rate cut benefitting old machines as well as new. Full cost from year zero.								
-4	6.7	6.7						
-3	13.5	6.7	6.7					
-2	20.2	6.7	6.7	6.7				
-1	27.0	6.7	6.7	6.7	6.7			
0	33.7	6.7	6.7	6.7	6.7	6.7		
1	33.7		6.7	6.7	6.7	6.7	6.7	
2	33.7			6.7	6.7	6.7	6.7	6.7
3	33.7				6.7	6.7	6.7	6.7
4	33.7					6.7	6.7	6.7
5	33.7						6.7	6.7
6	33.7							6.7
Cost in year		33.7	33.7	33.7	33.7	33.7	33.7	33.7
Cost recovery with uniform savings for new machines year 0 and after.								
-1	0.0				NONE			
0	33.7	6.7	6.7	6.7	6.7	6.7		
1	33.7		6.7	6.7	6.7	6.7	6.7	
2	33.7			6.7	6.7	6.7	6.7	6.7
3	33.7				6.7	6.7	6.7	6.7
4	33.7					6.7	6.7	6.7
5	33.7						6.7	6.7
6	33.7							6.7
Cost in year		6.7	13.5	20.2	27.0	33.7	33.7	33.7
Immediate bonus for new machines year 0 and after.								
-1	0.0				NONE			
0	33.7	33.7						
1	33.7		33.7					
2	33.7			33.7				
3	33.7				33.7			
4	33.7					33.7		
5	33.7						33.7	
6	33.7							33.7
Cost in year		33.7	33.7	33.7	33.7	33.7	33.7	33.7

For simplicity we have assumed that all capital has a fixed economic life of 5 years and that replacement is uniform, one-fifth each year. The "Benefit Over Life" column shows the amount of the reductions in the tax burden received by assets purchased in a particular year for each plan. Negative years indicate purchases before enactment of the policy change. The "Cost in Year" row shows the revenue cost of the government by year for each alternative.

We can use the table to look at both permanent and temporary policies. The rate cut expenditures fill the columns. A temporary rate cut just eliminates the columns to the right of the last year of the policy. The cost recovery fills the rows and temporary policies eliminate rows below the last year of the policy. The expensing example fills one cell.

New projects (investments) are the determinants of growth. Benefits to new investments reduce the income an investment must return to be undertaken. Increases in the return to old investments cannot change what has already occurred and therefore do not affect growth.

The first thing we see is that the benefit to the firm for the rate cut and the improved cost recovery are identical for capital put in place in year zero and after. Looking across each row we see that the benefit under each plan is the same for each year of purchase and year of use. We can conclude that the incentive to investment will be identical in the case of a permanent change in either. The cumulative revenue costs of the two plans are identical but the improved cost recovery costs less in the early years. This is because the rate cut provides a benefit to investment put in place before the policy change. The improved cost recovery costs $67.4 less in the first four years.

Over a fixed budget window, the cost recovery plan will deliver a greater investment incentive per dollar of revenue cost. The average cost over a 10 year budget window for the cost recovery plan is $27 billion versus $33.7 for the rate cut.

The third alternative demonstrates the incentive effect of an expensing approach. The cumulative benefit going to new projects for expensing is identical to the other two alternatives and the 10 year budget window cost is equal to $33.7. The expensing plan, however, provides all the benefits at once instead of spreading it over a number of years. This means that expensing will reduce capital costs by more than the others and thereby reduce the price of output by more.

Temporary policies would also favor the expensing plan. For a temporary one-year cut the expensing plan will deliver about five times as much incentive per dollar as the rate cut. The rate cut delivers only $6.7 in benefit to the year zero projects while the expensing delivers $33.7. The rate cut delivers 20% as much benefit to new projects as the expensing plan in the first year. This percentage rises by 10% per year until year 5 where the rate cut provides 60% of the benefit of the expensing plan. The efficiency of the rate cut continues to rise as the temporary period is expanded. A temporary, 10-year rate cut yields 80% of the benefit of the expensing plan, 90% by year 20, and 95% by year 40.

Using the two different types of investment approaches allows us to observe that cuts which are stretched out over time have a lower incentive effect than those given earlier. This is the rationale for the just-expired bonus depreciation. In general, more rapid cost recovery schedules lead to higher growth as they reduce the return necessary to undertake a project. Proposals that call for the lengthening of tax lives or limiting the amount of write-offs in the early years of depreciable assets lead to lower investment and growth. Finally, proposals that call for rate

reductions to be paid for through reductions in the rate of cost recovery will lead to lower investment and growth for the reasons given above.

We should also point out that accounting reports would show that the permanent rate cut and cost recovery changes would have the same impact on the firm's balance sheet after year 4. The total revenue benefit would be the same. Accounting reports of a temporary policy change might somewhat blur the advantage of the superior cost recovery relative to the rate cut. Because they generally do not deal at the new project level, accounting reports might not recognize any difference between a temporary expensing and temporary rate cut. Their general intent is to give the potential investor a bird's eye view of a firm's long- run operation and growth.

To estimate the economic impact of the proposals, we set out an approximate breakdown of the components of U.S. business output in 2008. This provides a method to directly compare the impact of the reductions in the tax burden on prices. The table below shows factor costs and private business output for 2008.

Structure of US Private Business Output (2008)
Baseline Factor Payment

Factor	Cost ($Billions)	Percent
Labor	6,431	65.6%
Capital	3,370	34.4%
Equipment	1,424	14.5%
Other Capital	1,946	19.9%
Total	9,800	100.0%

One can lower the tax on all capital income through a rate reduction. The rate reduction applies to production using both old and new capital. We will look at a rate reduction which lowers the capital cost for each category by one percent. The table below shows the revised cost structure.

Permanent Rate Reduction Equal to 1% of Capital Cost

Factor	Reduction	New Cost ($Billions)	Percent Reduction
Labor	0	6,431	0.0%
Capital	34	3,336	1.0%
Total	34	9,767	0.3%

Total capital costs have fallen by 1% but more importantly the cost of using new capital has fallen by 1%. The marginal cost of production is determined by the cost of using the last unit of

each factor of production. The marginal cost of using new capital drives the marginal cost of production just as does the marginal cost of labor. As is seen in the table, the marginal cost of output has fallen by 0.3% because of the 1% reduction in the marginal capital cost.

We will adjust this example to make it more comparable to the cost recovery alternatives. We will limit the rate cut to the income on equipment. We accomplish this by reducing the tax base by a percentage of the return on equipment. All we have done is apply the entire rate cut to the equipment category, leaving the impact on the cost of capital and the price reduction unchanged. We will use this as the rate cut example.

As we saw in the prior analysis the cost recovery example provides the same amount of price reduction as the rate cut. The patterns of reductions in the tax burden are the same for both plans. This means that we can use this economic analysis for both examples.

Will producers pass the cost reduction on to buyers? It seems highly likely that they will. Some producers will see the opportunity to expand market share and cash in on the higher profit rate. In essence the profit margin has jumped by 1% of the return to capital which is a large percentage change on a normal margin of something like 5%. As soon as one of the existing producers or even a new entrant begins the price reduction, the rest will have to follow or lose their position in the market.

If we assume that households and investors spend the same amount of money as they would have before the change, the quantity of goods and services will increase by as much as the price has gone down. Output initially expands without any additional income because prices have fallen.

Finally, we need to provide an estimate of the impact of the expensing plan to the rate cut and cost recovery plans. Using Commerce Department estimates of the stock of and investment in business equipment, we estimate a reduction of 3.2% in the factor cost of new business investment versus a 2.4% reduction under a rate cut plan.

Expensing Plan for New Equipment

Factor	New Cost ($Billions)	Percent Reduction
Labor	6,431	0.0%
Capital	3,197	1.3%
Equipment	1,379	3.2%
Other Capital	1,946	0.0%
Total	9,755	0.5%

The 3.2% reduction in the cost of using new equipment lowers the marginal cost of production by 0.5%. As before, we can expect the price reduction to be shared with purchasers of output through normal competitive forces. The lower price will result in a larger quantity of output which will increase income and again expand output and income.

If we expect purchasers to spend in the same proportions as they did before the change and businesses to employ factors of production under the same technology, we can estimate the long-run economic effects of the two plans.

Long-Run Estimates of Effects of Plans
($Billions)

Factor	Rate Cut	Investment Expensing
Labor	6,474	6,488
Capital	3,381	3,400
Equipment	1,429	1,437
Other Capital	1,952	1,963
Total	9,855	9,888
Percent Change	0.6%	0.9%

The table shows that the change in output under the investment expensing case is 60% greater than under the rate cut and expanded cost recovery. The change in 1nvestment is more than 2.2 times larger in the expensing case. Labor compensation is 0.9% higher in the expensing case relative to the baseline. As for employment, the expensing case would create 446,000 jobs versus 377,000 jobs for the rate cut and cost recovery plans. It should be remembered, however, that the cost recovery alternative is less expensive than either of the other two plans.

Focusing the policy change on new investment through a speedup of capital cost recovery will yield a larger change in marginal cost and price per dollar of revenue reduction. This is because the cost of investment along with labor costs set the marginal cost of production. Investment typically replaces 20% of the stock of equipment which means that concentrating revenue cuts on new investment is more efficient than a rate cut that goes to all capital.