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on

Tax Reform Options: Incentives for Capital Investment and Manufacturing

Mr. Chairman and Members of the Committee, I am Jane Gravelle, a Senior Specialist in Economic Policy in the Congressional Research Service of the Library of Congress. I would like to thank you for the invitation to appear before you today to discuss tax reform issues relating to capital investment and manufacturing.

Although much attention has focused on statutory tax rates and how they compare to tax rates in other countries, tax burdens on investment are also influenced by provisions that affect the business income tax base. These tax base provisions along with preferential rates lead to differences between statutory and effective tax rates.

To illustrate these effects consider the comparisons in Table 1, which show statutory and effective tax rates of various types, comparing the United States and the average for other countries in the Organization for Economic Development (OECD). Although statutory tax rates (combined national and subnational) in the United States are often cited as almost 15 percentage points higher than the OECD, this gap narrows when foreign rates are weighted to reflect the size of foreign countries, narrows further for

firms eligible for the production activities deduction, and almost disappears when measures of effective tax rates are considered.

Table 1

Corporate Tax Rates, United States and Rest of the OECD (in %)

Tax Rate Measure and Year	United States	OECD, Average Weighted by GDP, Excluding United States	OECD Average, Unweighted, Excluding United States
Statutory (2010)	39.2	29.6	25.5
Statutory (2010) with Production Activities Deduction	36.3	29.6	25.5
Effective (2008)	27.1	27.7	23.3
Marginal Effective Equipment (2010)	23.6	21.2	17.3
Marginal Effective Equipment (2005)	23.0	21.1	18.7
Marginal Effective Buildings (2005)	29.0	26.4	23.4

Source: Congressional Research Service (CRS) Report R41743, *International Corporate Tax Rate Comparisons and Policy Implications*, by Jane G. Gravelle. Effective tax rates are taxes divided by income. Marginal tax rates measure the effective tax rate on a new equity investment (the share of the pretax internal return paid in taxes). Both effective tax rates are affected by depreciation provisions.

Depreciation provisions are a significant reason that differences in effective tax burdens are significantly smaller than differences in statutory rates. According to data reported on the present value of depreciation allowances for equipment for 2005 (the latest available), out of 19 countries, only three (Greece, Italy and Switzerland) had higher values than the United States.¹

¹ Two countries had the same values: Portugal and Sweden. Institute for Fiscal Studies, <http://www.ifs.org.uk/publications/3210>.

Statutory corporate tax rates in other countries have declined, but these rate cuts have been offset in part by changes in other tax provisions, such as depreciation.² Data on effective tax rates for the G-7 indicate that while statutory rates fell from 1982 to 2005, effective rates on equipment either rose or fell by a smaller amount.³ Subsequently, the 2008 cut in the German tax rate was combined with base-broadening provisions eliminating declining balance depreciation methods, capping interest deductions, and other revisions.⁴ The United Kingdom is also planning a reduction in capital allowances as part of its rate reduction and move to a territorial system.⁵

Thus, rules for measuring the tax base, as well as the rate, affects the tax burdens on corporate investments. This is the central issue in any tax reform, including one that is revenue neutral: the need to balance rate reductions and base broadening.

In this testimony, I review the most significant provisions associated with capital investment and with manufacturing: accelerated depreciation and the production activities deduction. These provisions are two of the largest corporate tax expenditures. A

² See Eurostat, *Taxation Trends in the European Union, 2007*, which shows falling statutory corporate rates but constant or rising effective rates, which they ascribe to base broadening in part. http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-78-07-021/EN/KS-78-07-021-EN.PDF. See also *Taxation Trends in the European Union Data for the EU Member States, Iceland and Norway, 2011 edition*, which cites reductions in depreciation values and other revisions, along with rate cuts, http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-DU-11-001/EN/KS-DU-11-001-EN.PDF.

³ Jane G. Gravelle, "Economic Effects of Investment Subsidies," in *Tax Reform in Open Economies: International and Country Perspectives*, Ed. Iris Claus, Norman Gemmill, Michelle Harding and David White, Edward Elgar, Northampton, MA, 2010.

⁴ Bundesministerium der Finanzen, *From the 2000 Tax Reform to the 2008 Corporate Tax Reform – consistent and palpable reduction of direct tax burden for citizens and enterprises*, July 9, 2007, <http://www.german-business-portal.info/GBP/Redaktion/en/PDF/steuerreform-2008.property=pdf,bereich=gbp,sprache=en,rwb=true.pdf>; Dorsey and Whitney, *German Corporate Tax Changes: New Limitation of Interest Deductions, Exclusion of Loss Carry Forwards, Tax on Relocation of Functions*, June 26, 2008, http://www.dorsey.com/german_corporate_tax_changes/.

⁵ HM Treasury and HM Revenue and Customs, *Corporate Tax Reform: delivering a more competitive system*, November 2010, http://www.hm-treasury.gov.uk/d/corporate_tax_reform_complete_document.pdf.

number of other tax provisions and how they might be used to reduce rates are discussed in CRS reports.⁶

Accelerated Depreciation

Accelerated depreciation is normally the most costly corporate tax expenditure, although its revenue effect has recently fluctuated considerably because of the effects of changes in bonus depreciation provisions. Because bonus depreciation was enacted on a temporary basis, the tax expenditure would rise significantly for a year or two, and then be projected to fall. Accelerated depreciation is also affected by the business cycle. For FY2014, a more normal year with respect to the business cycle, the estimated revenue loss for equipment, with the effect of bonus depreciation eliminated, is about \$35 billion. This amount is slightly over twice as large as the production activities deduction.⁷ (Both include losses associated with unincorporated businesses). Accelerated depreciation provisions could be liberalized, which would require an offset from either raising corporate rates, or cutting back some other provisions, if the change were to be revenue neutral. Alternatively, lives could be increased and methods slowed to finance a cut in the corporate income tax rate.

⁶ CRS Report R41743, *International Corporate Tax Rate Comparisons and Policy Implications*, by Jane G. Gravelle, considers a variety of tax provisions, including provisions affecting foreign source income, other tax expenditures, and restricting interest deductions. See also CRS Report R40623, *Tax Havens: International Tax Avoidance and Evasion*, by Jane G. Gravelle for more detailed provisions relating to foreign source income.

⁷ Updated from data in Jane G. Gravelle, "Practical Tax Reform for a More Efficient Income Tax," *Virginia Tax Review*, Vol. 30, No. 2, Fall 2010, pp. 389-406. The expenditure for nonresidential structures is negligible, and the expenditure for residential structures is primarily noncorporate.

Liberalization of Depreciation: Bonus Depreciation

Currently, depreciation rules are very generous for equipment, as temporary bonus depreciation, first at 50%, 100% in 2011, and, currently, 50% of the cost of investment, has been enacted. Bonus depreciation allows a fraction of investment to be deducted when acquired, while costs of equipment are normally deducted over several years (typically five to seven years). Bonus depreciation was first enacted in 2002, at 30%, and subsequently raised to 50%, to stimulate the economy. The provision was intended to be temporary and expired after 2004. It was enacted again in 2008, for a one year period, to combat the recession and continued to be extended as unemployment remained high. It was allowed at 100% in 2011 and is currently 50%, expiring in 2013. Based on estimates of overall effective tax rates of equipment, currently estimated at 26%, effective tax rates would fall to 20% for 30% expensing, to 15% for 50% expensing and to 0% for 100% expensing.⁸

Empirical studies of the effectiveness of investment incentives in stimulating investment, using data over time or across industries, found mixed, but frequently small, effects of investment subsidies on investment.⁹ New evidence has come to light with studies of the effectiveness of the 2002 bonus depreciation provision, which provides a natural experiment. This evidence, however, largely suggests that reducing effective tax rates through investment subsidies may not be very effective in stimulating investment. A study by academic researchers found some effect; a study by economists at the Federal

⁸ CRS Report RL30299, *Capital Income Tax Revisions and Effective Tax Rates*, by Jane G. Gravelle.

⁹ Numerous studies have been done, generally yielding small elasticities (absolute value of the percentage change in investment divided by the percentage change in the cost of capital). These studies are reviewed in Jane G. Gravelle, "Economic Effects of Investment Subsidies," in *Tax Reform in Open Economies: International and Country Perspectives*, Ed. Iris Claus, Norman Gemmell, Michelle Harding, and David White, Edward Elgar, Northampton, MA, 2010.

Reserve Board found negligible effects. (The Federal Reserve economists also reported the results of several surveys of firms that indicated between two-thirds and 90% of firms were not influenced by the provision.) Moreover, a Treasury study indicated that many firms did not use bonus depreciation even though it was beneficial.¹⁰ Since the effects of a temporary subsidy should be much more powerful than a permanent one (since firms needed to act in the window of opportunity), these results suggest little effect from an investment subsidy.¹¹

Moreover, given the evidence that suggests domestic savings is relatively unresponsive to increases in returns, any investment diverted into equipment spending by such a provision would be withdrawn from other, in some cases, more valuable, uses. The only source of investment funds that would not come from other uses would be capital attracted from abroad. However, the benefits of encouraging capital to flow in from abroad are quite limited. An analysis of the effect of cutting the corporate tax rate from 35% to 25% indicated that output would increase by only 2/10 of a percentage point, and that 90% of that benefit would accrue to foreign owners of capital, not U.S. income.¹² This change would be considerably larger than a permanent 50% bonus depreciation on equipment and was analyzed assuming no offsetting changes elsewhere that might offset

¹⁰ Christopher House and Matthew Shapiro, Temporary Investment Tax Incentives: Theory With Evidence from Bonus Depreciation, National Bureau of Economic Research Working Paper 12514, Cambridge, Mass., September 2006. Subsequently published in the proceedings of the American Economic Association meetings: House, Christopher and Matthew Shapiro, Temporary Investment Tax Incentives: Theory With Evidence from Bonus Depreciation, *American Economic Review*, Vo. 98, June 2008, pp. 737-768; Darryl Cohen and Jason Cummins, *A Retrospective Evaluation of the Effects of Temporary Partial Expensing*, Finance and Economics Discussion Series 2006-19, Federal Reserve Board, Washington, D.C. April 2006; Matthew Knittel, *Corporate Response to Bonus Depreciation: Bonus Depreciation for Tax Years 2002-2004*, U.S. Department of Treasury, Office of Tax Analysis Working Paper 98, May 2007.

¹¹ Unlike current circumstances where bonus depreciation may not be effective because of the slack demand in the economy, the early bonus depreciation was in effect when the economy was performing normally.

¹² CRS Report R41743, *International Corporate Tax Rate Comparisons and Policy Implications*, by Jane G. Gravelle

the reduction in tax rates. Since the corporate tax is only 2% of output, however, it is not surprising that the effects of even a significant rate cut would be modest.

An investment subsidy such as bonus depreciation, enacted on a permanent basis, would be costly as well, perhaps around \$30 billion annually.¹³ This revenue cost could be reduced if targeted to a narrower class of investments, such as manufacturing equipment, however. Manufacturing is estimated to account for about a quarter of capital in equipment.¹⁴ Moreover, three quarters of the assets in manufacturing are accounted for by five types of investments (instruments, general industrial equipment, special industrial equipment, fabricated metal products and metal working machinery), allowing for further targeting.

Treatment of Section 179 Expensing

In addition to bonus depreciation that is available for individuals in general, there is also a provision that has been temporarily expanded, allowing a limited amount of investment to be expensed (the full cost deducted on acquisition), a provision aimed at small businesses. This provision is often referred to as Section 179 expensing, and it was increased in 2002 along with bonus depreciation. In 2002, the maximum amount that could be expensed was \$24,000 and the benefit began phasing out dollar for dollar once investment rose above \$200,000. These amounts were increased to \$100,000 and

¹³ This estimate is based on extrapolating the 2008 estimate of bonus depreciation (Joint Committee on Taxation, JCX-17-03). The economic outlook was probably more optimistic in early 2008 and therefore more reflective of normal times than the 2009 estimate. The result of making the change permanent was a \$28 billion average annual loss over the first ten years and a steady state loss of about \$23 billion, assuming a 5% growth rate. In normal times, however, more firms would be able to use the deduction and participation would be likely be higher.

¹⁴ Capital stock profile for manufacturing based on expenditure shares from the National Income and Product Account capital flows tables, http://www.bea.gov/industry/capflow_data.htm, applied to capital stock estimates at http://www.bea.gov/scb/pdf/2011/09%20September/0911_fixed-assets.pdf.

\$400,000 respectively for 2003, then indexed for inflation, but those amounts were scheduled to expire and return to the (indexed) 2002 values in 2008. In 2007, the amounts were increased to \$125,000 and \$500,000. In 2008, the amounts were further increased to \$250,000 and \$800,000 as part of the stimulus bill for 2008. These provisions were extended by subsequent legislation through 2009 and 2010. Legislation in 2010 increased the amounts to \$500,000 and \$2,000,000 for 2010 and 2011. These provisions became redundant for 2011 after legislation enacted in December 2010, allowing expensing for all equipment, but the limit was set at \$125,000 and phaseout after \$500,000 in 2012 by that law.

The provision for small business, section 179 expensing, is much less costly. It can also be viewed in part as a way to simplify compliance by small and medium sized businesses. Under current law, this limit would fall back to the 2002 limit of \$24,000 (indexed for inflation), although a higher amount (such as the \$100,000 enacted for 2003) could be considered. A study of the effect of the provision in 2001-2003 found that taxpayers elected this provision for only about half their eligible investment.¹⁵ The provision and its change had small effects as well: under the lower limit about 6.5% of investment was expensed and under the higher limit 8.4%. Thus, the additional investment deducted under Section 179 as a result of the increase was less than 2% of total investment. An even smaller share of manufacturing investment would be covered since small firms represent a smaller share of this industry. Thus, this provision is not likely to have a significant effect on investment.

¹⁵ Matthew Knittel, "Small Business Utilization of Accelerated Depreciation: Section 170 Expensing and Bonus Depreciation," *Proceedings of the National Tax Association*, 2005, pp. 273-275. Data on coverage was compared with estimates of equipment investment from the National Income and Product Accounts, Table 5.5.5, <http://www.bea.gov/national/nipaweb/SelectTable.asp?Selected=N>.

Slowing Depreciation as a Base Broadening Provision

Much of the discussion about corporate tax reform, however, proposes to use tax expenditures as a way of financing a rate reduction in a revenue neutral change, as is proposed, for example, by the Fiscal Commission¹⁶ and in legislation such as the Wyden-Coats bill (S. 727).

This portion of my testimony considers two illustrative examples of revising the depreciation system: returning to the alternative depreciation system as proposed in S. 727 and by the Fiscal Commission, and a more limited approach of lengthening the lives of the basic equipment classes that is proposed as a CBO budget option.¹⁷

Table 2 shows the effect, compared to the 35% statutory rate, of current law depreciation rules and the proposals on various types of equipment and structures. Under current law, tax rates on equipment range from 17% to 36%, based on estimates of economic depreciation. (Some variation in rates is inevitable if assets are grouped into a limited number of classes). Under the alternative depreciation system, which has longer lives and straight-line methods, tax rates range from 27% to 44%. Under the CBO budget options, tax rates range from 24% to 44%. Public utilities, which are classified as equipment for tax purposes but structures for National Income and Product Account purposes, are taxed at 27% and their rates will rise to 31% and 33% respectively. Most buildings are taxed at or above statutory rates (although some undermined amount of industrial buildings may be treated as equipment and taxed at lower rates).

¹⁶ The National Commission on Fiscal Responsibility and Reform, *The Moment of Truth*, December 2010, http://www.fiscalcommission.gov/sites/fiscalcommission.gov/files/documents/TheMomentofTruth12_1_2010.pdf;

¹⁷ Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, March 2011, <http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf>.

Table 2

Effective Tax Rates by Asset Type, No Change in Statutory Rate

Asset Type	Current Law (%)	Alternative Depreciation (%)	CBO Budget Options (%)
Equipment			
Autos	35	39	44
Office/Computing Equipment	31	39	41
Trucks, Buses, Trailers	30	34	39
Aircraft	30	44	38
Construction Machinery	24	31	32
Mining/Oilfield Equipment	29	42	37
Service Industry Equipment	29	37	37
Tractors	27	37	35
Instruments	28	42	36
Other	27	39	35
General Industrial Equipment	26	38	33
Metalworking Machinery	24	34	31
Electric Transmission Equipment	34	43	42
Communications Equipment	19	34	26
Other Electrical Equipment	24	36	31
Furniture and Fixtures	23	33	30
Special Industrial Equipment	21	34	28
Agricultural Equipment	21	31	28
Fabricated Metal	30	39	38
Engines and Turbines	36	41	43
Ships and Boats	17	27	25
Railroad Equipment	18	29	24
Structures			
Mining/Oil and Gas	7	16	8
Other	40	41	40
Industrial	37	37	37
Public Utility	27	31	33
Commercial	36	36	36
Farm	26	30	33

Note: Author's calculations; assumes 5 percent real discount rate and 2 percent inflation rate.
Source: Reducing Depreciation Allowances to Finance a Lower Corporate Tax Rate, by Jane G. Gravelle, forthcoming, *National Tax Journal*.

Table 3 aggregates the rates for equipment, structures, and the total, indicating that equipment is taxed at effective rates of 26% under current law, rising to 36% under the alternative depreciation system and 34% under the CBO budget option. Thus both changes, while moving rates closer to statutory rates, would significantly increase effective tax rates for equipment. Except for public utility structures there would be little change in the tax rate on structures. Overall tax rates would rise from about 30% to close to the statutory rate (35% or 34%).

Table 3

Aggregate Effective Tax Rates, No Change in Statutory Rate

Asset Type	Current Law (%)	Alternative Depreciation (%)	CBO Budget Options (%)
Equipment	26	36	34
Structures	32	34	34
Total	30	35	34

Note: Assumes 5 percent real discount rate and 2 percent inflation rate.

Source: Reducing Depreciation Allowances to Finance a Lower Corporate Tax Rate, by Jane G. Gravelle, forthcoming, *National Tax Journal*.

Table 4 calculates tax rates for the assets for the manufacturing sector. As indicated in the table, the initial tax rates for equipment are slightly lower, at 24%. The rate on equipment would rise by 50%, to 36%, for the alternative system and by 29%, to 31%, for the CBO budget option. Although actual industrial buildings would not be affected, as noted earlier, some undetermined amount of these structures may be taxed at lower rates as equipment and may experience tax increases.

Table 4

Aggregate Effective Tax Rates, Manufacturing Sector, No Change in Statutory Rate

Asset Type	Current Law (%)	Alternative Depreciation (%)	CBO Budget Options (%)
Equipment	24	36	31
Structures	37	37	37
Total	31	37	34

Note: Author's calculations; assumes 5 percent real discount rate and 2 percent inflation rate. Capital stock profile for manufacturing based on expenditure shares from the National Income and Product Account capital flows tables, http://www.bea.gov/industry/capflow_data.htm, applied to capital stock estimates at http://www.bea.gov/scb/pdf/2011/09%20September/0911_fixed-assets.pdf. Note that some share of structures for manufacturing may receive lower tax rates if they are classified as equipment for tax purposes, so tax rates may be lower,

Some of the increased burden would be offset if the statutory rate were lowered. This effect depends not only on which option is considered but also on two other factors. First, the revenue gain over the budget horizon is almost twice the size of the steady state gain (relative to GDP or tax revenues). The steady state occurs after the longest depreciation is reached and is the estimate that remains (for a given growth rate) constant relative to output. For long run revenue neutrality the steady state should be used as an offset. Second, almost a quarter of the revenue gain is from unincorporated business, so if neutrality were confined to the corporate sector, only corporate revenue gains would be considered. Table 5 shows the effects of these alternatives. If rate reductions were based on all depreciation and the ten year budget horizon, the corporate rate could be reduced by 4.7 percentage points, almost, but not quite, offsetting the aggregate tax rate increase shown in Table 3. However, equipment tax rates would still be higher. If the steady state and only corporate depreciation were used, a reduction of less than half that amount 2.2 percentage points, would be possible. The comparisons for the CBO budget options

proposal result in an even smaller offset, with a rate reduction of slightly less than a percentage point when steady state corporate depreciation is used.

Table 5
 “Revenue Neutral” Statutory Tax Rates

Basis for Estimate	Alternative Depreciation System (%)	CBO Budget Options (%)
Budget Horizon, All Depreciation	30.3	32.8
Budget Horizon, Corporate Depreciation	31.3	33.3
Steady State, All Depreciation	32.3	33.8
Steady State, Corporate Depreciation	32.8	34.1

Notes: New corporate rate is current rate divided by 1 plus the ratio of revenue gain to corporate revenues. For the budget horizon the rate is derived from the revenue cost and corporate tax revenue, first ten years. The ratio is 54 percent as large for the steady state. Ratios in either case when confined to using corporate depreciation are multiplied by 0.78.

Source: Reducing Depreciation Allowances to Finance a Lower Corporate Tax Rate, by Jane G. Gravelle, forthcoming, *National Tax Journal*.

The reason for this lack of trade off is that corporate rate cuts provide a larger windfall because they benefit assets that are already in place as well as new investment. These calculations thus illustrate the tradeoffs in using depreciation changes to offset rate reductions. A more neutral set of tax rates is obtained and the headline statutory tax rate is reduced, but the burden on new investment is increased.

Production Activities Deduction

The other major tax expenditure associated with manufacturing and capital investment is the production activities deduction, which allows a deduction of 9% of taxable income for domestic production for certain industries, primarily manufacturing, electricity and natural gas production, and construction. This provision costs

approximately \$15 billion for FY2014.¹⁸ Because the deduction applies to taxable income, it is equivalent to a rate reduction from 35% to 31.85% where applicable. One of the original rationales for the tax reduction was to benefit manufacturing. This provision has been criticized as distorting the tax treatment of different industries by granting differential tax rates. In addition, it creates administrative and compliance problems both in distinguishing domestic content and identifying eligible activities.

About a quarter of the subsidy benefits unincorporated businesses, although that share is growing and is projected to reach 35% by FY2014. Of the corporate component, the manufacturing share is 66%, while manufacturing's taxable income was 40% of the corporate total.¹⁹ Assuming little of the reduction in the noncorporate sector is for manufacturing, manufacturing receives less than half the benefit, and corporate manufacturing receives 44% of the benefit. About 12% of the corporate benefit is from firms in the information sector, which is responsible for 6% of profits. The mining sector claims 6%.

A reason to question eliminating this deduction relates to international capital flows. This deduction is more likely to apply to multinationals because of the industry restrictions. A revenue neutral rate substitution could lower the effective statutory rate by about 1.2 percentage points if noncorporate benefits were used and 0.8 otherwise. Therefore to the extent that lowering the domestic tax rates is attractive to induce capital inflows or reduce profit shifting, this deduction may be more targeted to multinationals. It

¹⁸ Joint Committee on Taxation, 2010a, *Estimates of Tax Expenditures for FY2010-2014*, December 21, 2010, JCS-3-10

¹⁹ Data on Distribution is from CRS Report R41988, *The Section 199 Production Activities Deduction: Background and Analysis*, by Molly Sherlock.

is doubtful, however, that this issue outweighs the drawbacks of the provision, making this change a good candidate for revenue raising.

One intermediate option is to limit the benefit to corporate manufacturing, which would recoup more than half the revenue loss. Such a change would concentrate the benefit where the concern is greatest (to affect international capital flows) and reduce the numbers of firms that need to address the administrative complexities.