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Incentive effects of bonus depreciation

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A B S T R A C T

This study examines the effect on capital expenditures of "bonus depreciation," which was intended to stimulate such spending by allowing businesses to immediately expense a portion of the cost of qualified capital expenditures from late 2001 through 2004. After controlling for many previously documented determinants of capital expenditures, some of our results indicate that capital expenditures during bonus depreciation's availability were greater than those during the time it was not available, consistent with the expected effect. However, other results indicate that bonus depreciation had an insignificant effect on capital expenditures. These mixed findings generally persist through several sensitivity analyses. We interpret these results as weakly supportive evidence that Congress attained its goal of stimulating capital spending.

1. Introduction

Congress has often enacted tax law provisions that are intended to increase capital spending by businesses, such as the investment tax credit and accelerated depreciation deductions. Empirical research has examined these tax provisions' effect on capital spending, with results that have not always been conclusive and consistent. One possible reason for such results may be that major changes in these tax provisions have generally coincided with other tax law changes that also might be expected to affect capital spending, such as tax rate changes. Nonetheless, Congress has used

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favorable tax provisions with the intent of inducing capital spending,[2] so evidence of their effectiveness would be useful for tax policy makers.

This study focuses on the "bonus depreciation" provisions that were enacted as part of the 2002 and 2003 Tax Acts, which allowed businesses to immediately expense 30% and 50%, respectively, of the cost of qualified capital expenditures.[3] Bonus depreciation provides a unique opportunity to study the effect of tax depreciation on capital spending for several reasons. First, the 2002 and 2003 Tax Acts did not include tax rate or investment tax credit changes; bonus depreciation was the only provision that would be expected to directly affect capital spending.[4]

Second, the 2002 Tax Act was an economic stimulus bill that was enacted largely in response to the terrorist attacks of September 11, 2001. This event, whose date was made the effective date of the bonus depreciation provision, was unexpected, so businesses could not have delayed capital spending that they would have made even without bonus depreciation in order to take advantage of it. Third, bonus depreciation was allowed for both regular and alternative minimum tax purposes, thus avoiding complications that the alternative minimum tax might otherwise introduce. Fourth, bonus depreciation was available to both large and small businesses, unlike the immediate expensing available under Section 179. Bonus depreciation's availability to larger, publicly-traded businesses allows richer and more readily-available data sources (e.g., Compustat) to be used, providing larger sample sizes and an enhanced ability to control for various other factors that might affect capital spending.

The empirical model of capital expenditures developed here uses quarterly data and is estimated over the years 1990–2006, with indicator variables partitioning the data into five time periods: a pre-bonus depreciation era (including recessionary and non-recessionary time periods); an era when deliberations regarding the Bill that became the 2002 Tax Act were ongoing (and for which bonus depreciation was made retroactively applicable); an era following the 2002 Tax Act's enactment; an era following the 2003 Tax Act's enactment; and a post-bonus depreciation era. If firms responded to bonus depreciation by increasing their capital spending, capital expenditures during the bonus depreciation eras would be greater than during the pre- and post-bonus depreciation eras. Some of the results indicate that bonus depreciation led to greater capital expenditures. However, the support for a bonus depreciation effect is limited, with other results indicating it had an insignificant effect. These findings are relatively robust through several sensitivity analyses and occur despite having included many control variables (e.g., user cost of capital, capital intensity, debt, cash flows, sales growth) in the empirical model. Overall, the results provide supportive, but weak, evidence that Congress attained its goal of stimulating capital spending by making bonus depreciation available, but they should be interpreted cautiously because of their mixed nature.

The next section of the paper describes the bonus depreciation provisions in the 2002 and 2003 Tax Acts. Following that is a discussion of the theoretical background and a review of relevant empirical

[2] For example, the creation of the accelerated cost recovery system (US Congress, 1981), increases in the maximum amount deductible under Section 179 (US Congress, 1993, 1996), and the conformance of alternative minimum tax depreciation recovery periods to those for regular tax purposes (US Congress, 1997) were all claimed to be needed to enhance capital spending, generally with the broader goal of increasing economic growth.

[3] P.L. 107-147 Section 101 (Job Creation and Worker Assistance Act of 2002, referred to here as the 2002 Tax Act), which added Section 168(k) to the Internal Revenue Code, and P.L. 108-27 Section 201 (Jobs and Growth Tax Relief Reconciliation Act of 2003, referred to here as the 2003 Tax Act). Bonus depreciation was intended to encourage capital spending by businesses, with the hope that it would enable economic recovery (US Congress, 2001; Baucus, 2001).

[4] Black et al. (2000) note that much of the research on the effects of taxes on capital spending has focused on circumstances where multiple tax changes occurred (e.g., changes in tax rates and depreciation rules). Bonus depreciation was the principal business-related provision in the 2002 Tax Act, accounting for more than 80% of its business-related tax relief (US Congress, 2002). The other business-related provisions included a temporary expansion of the net operating loss (NOL) carryback period from 2 years to 5 years. This expansion of the carryback period allowed many NOL firms to benefit from bonus depreciation (i.e., firms whose NOLs, in the absence of any bonus depreciation, would be fully absorbed by taxable income during a 5-year carryback period but not during a 2-year carryback period); the bonus depreciation, in conjunction with the expanded carryback period, resulted in a larger immediate tax refund. In addition to these tax provisions, the 2002 Tax Act included a temporary expansion of unemployment benefits.Similarly, in the 2003 Tax Act, bonus depreciation was the principal corporate business-related provision. The Act also temporarily expanded the Section 179 deduction, but this affected few, if any, of the publicly-traded corporations studied here.