

## Investment Incentives and Economic Stimulus: Lessons from “Bonus Depreciation”

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January 18, 2008

*Summary—Bonus depreciation subsidized only purchases of equipment with very long tax lives. Investment in these types of equipment responded sharply to the subsidy, but because it was so narrowly targeted, the subsidy had only modest effects on the overall economy.*

In 2002 businesses received a tax cut in the form of a “bonus depreciation” provision that allowed them to immediately write off 30 percent of qualified investment spending. The bonus was increased to 50 percent in 2003 and expired at the end of 2004.<sup>1</sup>

The bonus depreciation policy mainly benefited relatively long-lived business equipment. Current tax law already allows firms to rapidly write off investment expenditures for most other types of equipment. Consequently, the additional tax saving from writing off more in the first year is quite small for many types of investment. For example, the average subsidy resulting from the 50 percent bonus to equipment with service lives of 7 years or less was at most 1 percent. In addition, many of these investment goods (which include vehicles, computers, and “general equipment”) are purchased by firms that are not affected by bonus depreciation because their annual investment spending is low enough to write it off immediately.

In contrast, the subsidy for longer-lived capital goods was much greater. These goods, which included farm structures, electric power structures, telephone structures, television transmitting towers, mining shafts, pipelines, and so forth, received subsidies between 3 and 5 percent as a result of the 50 percent bonus depreciation. While these longer-lived investment goods were heavily subsidized, they comprise only a very small fraction of total investment. Total investment in 10, 15 and 20-year capital accounted for less than 3 percent of total investment and less than one-half of one percent of GDP.

In the data, it appears that investment in types of capital receiving a substantial subsidy did increase sharply in response to the policy. The most heavily subsidized investment increased by perhaps as much as 40 percent relative to what would have been expected absent bonus depreciation. For most investment goods, however, the effect was small or undetectable.

Because it was so narrowly focused, the aggregate effect of bonus depreciation was probably quite modest. For the U.S. economy as a whole, these policies may have increased GDP by \$10 to \$20 billion and may have been responsible for the creation of 100,000 to 200,000 jobs.<sup>2</sup>

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This note draws on “Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation” by Christopher L. House and Matthew D. Shapiro, Revised December 2007. *American Economic Review*, forthcoming. See <http://www.umich.edu/~shapiro/bonus-depreciation.pdf>.

<sup>1</sup> Certain investment goods were allowed an extension beyond the 2004 expiration. Also, the sizeable increase in the Section 179 expensing for small businesses, which shares many features of bonus depreciation, remained in effect after 2004.

<sup>2</sup> This calculation is based on simulations of a multi-sector model of the economy that takes into account the general equilibrium effects of the policy.

A stimulus package that repeats bonus depreciation would benefit a narrow range of firms by providing them a valuable subsidy, but it would have only modest effects overall.

There are policies that would provide broader and more substantial stimulus. For example, a temporary investment tax credit (ITC) might provide a boost to aggregate investment if it applied broadly.

It is important to keep in mind, however, that temporary investment tax subsidies like bonus depreciation or a temporary ITC are effective because they give firms an incentives to accelerate investment that would have occurred in the future. Hence, they do not increase the long-run productive capacity of the economy.

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### **Questions and answers about Bonus Depreciation**

Did the expiration of bonus depreciation create a growth “pothole” when the incentives expired in 2005?

No, investment did not drop sharply when bonus depreciation expired. Why so? First, there may have been other factors accounting for the strength of investment. Second, there were exceptions to the expiration (for expensive pieces of equipment). Third, Section 179 expensing (for small business) did not expire. The initial response to bonus depreciation provides sharp evidence about its effects. The evidence surrounding its expiration is less clear.

Was bonus depreciation ineffective because it pushed up the purchase price of investment goods?

There is no evidence that this policy pushed up the prices of investment goods.

Surveys of firms say that only a small fraction of them responded to bonus depreciation? Does not that imply that the policy had little effect?

No. Bonus depreciation provided large subsidies to only a very small fraction of equipment – most of which has highly specialized uses. Consequently, it is not at all surprising that bonus depreciation was not important to most firms. The survey evidence is what one would expect given the design of the policy.

Why did Cohen and Cummins (2006) find that bonus depreciation was ineffective?

Cohen and Cummins compare investment in two groups: capital with service lives of 5-years or less, versus capital with service lives or 7-years or more. The two groups

function as a treatment group and a control group. Because of the relative abundance of 5 and 7-year capital in total investment, this aggregation implies that Cohen and Cummins are effectively comparing five-year capital to seven-year capital, neither of which gets much benefit from bonus depreciation.

Did firms take advantage of bonus depreciation on their tax returns?

Knittel (2005a, 2005b) shows that many firms with investment that was eligible for bonus depreciation or Section 179 failed to elect it. This finding is puzzling because it would generally be a firm's interest to make this election.

How do bonus depreciation and Section 179 expensing interact?

The ceiling on Section 179 expensing was increased to \$100,000 in 2003 and, unlike bonus depreciation, this increase did not expire. Section 179 expensing is equivalent to a 100 percent bonus depreciation.

Section 179 further tilts the effects of bonus depreciation toward long-lived capital. Many small equipment purchases were already fully expensed under Section 179 and thus were not affected by bonus depreciation. In contrast, long-lived equipment often involves large-scale investment outlays and is thus likely in the range where bonus depreciation is operative.

Does economic theory predict that investment should fall sharply below trend after the expiration of bonus depreciation?

The theory of temporary investment incentives does not predict that investment falls sharply below normal after the expiration. Bonus depreciation stimulates investment in long-lived capital. Any reduction in future investment from the early accumulation of long-lived capital in response to bonus depreciation should be spread over a long period in the future.

## REFERENCES

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