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This paper examines business use of special provisions for increased expensing of capital investment that have been passed into law over the past decade and a half -- bonus depreciation and expanded Section 179 expensing limits. Tax data over the 2002-2014 period show that corporations, pass-through entities, and individual filers have tended to use Section 179 expensing in the 60 percent to 80 percent range, both in terms of the numbers of businesses claiming the deductions and for the deduction amounts claimed relative to total allowed investment amounts. For bonus depreciation, in the years 2002-2004 and 2008-2014, the effective take-up rates were lower than observed for Section 179 expensing. The number of firms using bonus depreciation for eligible investment generally was in the 40 percent to 60 percent range relative to the number eligible, while the bonus depreciation deduction relative to the eligible investment amount generally was in the 50 percent to 70 percent range for C corporations and S corporations, but was at lower ranges of about 40 percent to 60 percent for partnerships and 30 percent to 40 percent for individuals. Total business use of Section 179 expensing and bonus depreciation over the 2002-2014 period averaged nearly $300 billion per year, and more recently over $400 billion per year for 2012-2014. Probit analysis of C corporation data from 2008 is consistent with theoretical priors that bonus depreciation use is limited by firms in a loss position, and by firms with net operating loss carryforwards. The analysis also is consistent with a positive relationship between bonus use and conformity of state tax laws with Federal treatment regarding bonus depreciation; average equipment investment life; the size of the firm; and for manufacturing and mining firms relative to other industries.

Keywords: Business taxes, Expensing, Bonus Depreciation, Investment

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1. INTRODUCTION

Over the past decade and a half, special provisions for accelerated depreciation of equipment investment were passed and signed into law, with the stated policy intent of providing pro-growth incentives for increasing investment. The two main provisions for special accelerated depreciation have been: 1) "bonus" depreciation under Section 168(k) that allows for an additional first-year depreciation deduction; and 2) increases in Section 179 expensing limits, the maximum deduction allowed for full expensing of equipment investment by "small businesses." By allowing firms to deduct capital expenditures more quickly, bonus depreciation and Section 179 expensing reduce the cost of capital and lower the effective tax rate.

This paper provides a retrospective on the use of Section 179 expensing and bonus depreciation over the 2002-2014 period, including take-up rates -- the percentages of eligible firms and investment using the provision -- across organizational form (C corporations, S corporations, partnerships, and individuals[3]) and across tax years.[4] We review existing studies regarding the evidence on whether the special expensing provisions led to increases in investment above levels that would have otherwise occurred -- i.e. a policy-induced behavioral response -- but do not provide any new evidence on that issue. Rather, the focus is on the overall utilization of Section 179 expensing and bonus depreciation for the given investment observed, and the characteristics of firms that appear to underlie the decision to use or not use bonus depreciation. Using IRS Statistics of Income (SOI) tax data, we find that take-up rates were relatively high for Section 179 expensing (for allowed investment given income tests) -- generally in the 70 percent to 80 percent range for C corporations and S corporations, and somewhat lower at around 60 percent to 70 percent for partnerships and individuals. For bonus depreciation, the take-up rates relative to eligible investment generally were in the 50 percent to 60 percent range for C corporations and S corporations, in the 40 percent to 60 percent range for partnerships, and in the 30 percent to 40 percent range for individuals. In dollar volume, use of Section 179 expensing has varied over the years as the legislative limits and the performance of the economy have varied; aggregate use of Section 179 expensing across all legal forms averaged just over $50 billion per year over 2003-2011, and just over $80 billion in the more recent years of 2012-2014. Regarding the use of bonus depreciation, during years when 50 percent bonus was in place, the total use across legal forms ranged from about $210 billion (average for 2004, 2008-2009) to about $345 billion (average 2012-2014). The peak use for bonus depreciation was for 2011 when

[3] The reference to "individuals" is often synonymous with "sole proprietors" but our analysis also includes farm and rental filers.

[4] This paper updates and expands upon earlier work in Knittel (2005), Knittel (2007) and Kitchen and Knittel (2011).

100 percent bonus depreciation was in place and the total bonus amount claimed was $548 billion.

We also present empirical analysis examining the role of various factors that affect the estimated probability of a firm using bonus depreciation. While we cannot precisely identify the factors that determine the take-up rates for bonus depreciation, the analysis and empirical evidence we present are consistent with the use of bonus depreciation being reduced by the firm being in a loss position or using net operating loss carryforwards and thus being unable to fully realize the tax benefits of immediate expensing. The results are also loosely consistent with bonus use being lower because of the lack of conformity of state tax laws with Federal treatment regarding bonus depreciation. The results also indicate bonus use is higher for firms with longer-lived equipment investment, for larger firms, and for mining and manufacturing firms.

The paper proceeds as follows. Section 2 presents background and recent historical information on Section 179 and bonus depreciation provisions and legislation. Section 3 presents information on the economics of accelerated depreciation, with examples that illustrate the beneficial effects in terms of the present value of deductions, the cost of capital, and the effective tax rate. Section 4 provides the policy perspective and a brief review of the literature on empirical evidence on the investment responses to bonus depreciation provisions. Section 5 discusses the data used and the adjustments, imputations, and other calculations that are made. Section 6 presents the results from the tax data for use of Section 179 and bonus depreciation by organizational form and by year. Section 7 presents empirical results for probit estimation for the probability of firm use of bonus depreciation based on various characteristics, as well as some representative examples. Section 8 considers some special issues, including the distribution by income and by industry for the use of Section 179 and bonus depreciation, and the challenge of properly accounting for "used" property in making the estimates. Section 9 presents the summary and conclusions. Appendixes are included that provide the IRS Form 4562 for Depreciation and Amortization; charts for the legislative history for Section 179 and bonus depreciation; and a description of the derivation of the investment basis amounts for Section 179 and bonus used in the paper.

2. SECTION 179 EXPENSING AND BONUS DEPRECIATION LEGISLATION

Over the years, numerous laws have been passed instituting specific provisions in the tax code to allow for immediate expensing of investment; notably, over the past decade and a half, the special depreciation allowance -- also known as "bonus depreciation" -- has allowed for partial or full expensing of equipment and software investment for various years, and higher

Section 179 expensing limits and phase-out ranges have allowed for greater investment expensing by businesses with investment amounts below established limits.[5] This section presents some historical and background discussion for the bonus depreciation and Section 179 expensing provisions.

2.1 Section 179 expensing

Section 179 expensing was added to the tax code with the enactment of the Economic Recovery and Tax Act of 1981 and the Accelerated Cost Recovery System rules.[6] Under Section 179, taxpayers may elect to expense qualifying investment up to a specified limit. Qualifying investment is defined as depreciable tangible personal property that is purchased for use in the active conduct of a trade or business.[7] In general, this definition includes equipment that would normally be depreciated under the Modified Accelerated Cost Recovery System (MACRS) for property with a tax life of 3, 5, 7, 10, 15, or 20 years. For tax years that began in 2002, the maximum Section 179 deduction was $24,000; the deduction was phased-out dollar-for-dollar if qualified investment exceeded $200,000. The Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003 increased the maximum deduction to $100,000 and the phase-out level to $400,000 for tax years that began in 2003 and, including an extension under the American Jobs Creation Act (AJCA) of 2004, those limits continued, adjusted for inflation, through 2007. The Small Business and Work Opportunity Act of 2007 (passed with the Defense Supplemental of 2007) raised the limits to $125,000/$500,000 for 2007; the Economic Stimulus Act (ESA) of 2008 and the American Recovery and Reinvestment Act (ARRA) of 2009 set the limits at $250,000/$800,000 for 2008 and 2009; the Small Business Jobs Act (SBJA) of 2010 set the limits at $500,000/$2,000,000 for 2010 and 2011; the American Taxpayer Relief Act (ATRA) of 2012 extended the $500,000/$2,000,000 levels through 2012-2013; the Tax Increase Prevention Act (TIPA) of 2014 extended those levels through 2014; and the Protecting Americans from Tax Hikes (PATH) Act of 2015 made permanent the maximum deduction at $500,000 and the phase-out threshold at $2,000,000 -- with those levels indexed for inflation for years after 2015.

In addition to the qualifying investment limit, the Section 179 deduction is also limited by a taxpayer's taxable income. The deduction may not exceed the sum of taxable income

[5] See Appendix B for a detailed legislative timeline.
[6] For a succinct description of the background regarding depreciation and Section 179 expensing as of 2005, also see Joint Committee on Taxation (2005); and for a more recent description also see Gunther (2015).
[7] This includes off-the-shelf computer software placed in service in taxable years beginning after 2003. Alternatively, these purchases would not qualify for Section 179 expensing and would be amortized over three years.

derived from the active conduct of a business (or businesses) plus any wage or salary income. The income limit applies separately to the individual taxpayer and each business entity. Many individuals receive multiple Section 179 deductions because they have more than one sole proprietorship and/or they receive Section 179 deductions that are passed through from partnerships or S corporations. (The pass-through of Section 179 deductions to specific partners/shareholders is unique; all other depreciation allowances are included in the computation of business net income and apportioned among partners/shareholders.) Regardless of how many deductions a single taxpayer receives from a sole proprietorship, farm, or pass-through entity, the taxpayer's total deduction may not exceed the lesser of the maximum deduction or the taxable income limit. Amounts disallowed by the income limitation are carried forward to future tax years. The deduction for carryforwards plus any current year amounts expensed under Section 179 may not exceed the maximum deduction limit or, if lesser, the taxable income limit. In this manner, carryforward deductions that are generated via Section 179 are always subject to the maximum deduction and taxable income limits. Conversely, "regular" depreciation deductions are not subject to such limits.

Although most equipment -- including "used" equipment as long as it is new to the taxpayer -- qualifies for Section 179, certain listed property does not. Listed property is property that lends itself to personal use such as passenger automobiles, property used for transportation, computers and related peripheral equipment (unless used solely at a regular business establishment), and property generally used for entertainment, recreation, or amusement. Taxpayers must apportion listed property between business and personal use and claim deductions attributable to the business share only (if greater than 50 percent). In addition, further complications arise for expensing and depreciation treatment for passenger automobiles (listed property) and heavy Sport Utility Vehicles (SUVs). The depreciation deduction for passenger automobiles (those rated at 6,000 pounds gross vehicle weight or less) is limited and dependent on the use or non-use of bonus depreciation; for example, the maximum depreciation deduction for the first year for a passenger automobile placed in service in 2013 was $11,160 if electing to use bonus depreciation, but only $3,160 if not electing to use bonus depreciation. For heavy SUVs -- "any 4-wheeled vehicle primarily designed or used to carry passengers … that is rated at more than 6,000 pounds gross vehicle weight and not more than 14,000 pounds gross vehicle weight" -- the taxpayer cannot elect to expense more than $25,000 of the cost of the vehicle. As a result of these varying depreciation deduction limits under alternative expensing and depreciation treatments, taxpayers can face varying incentives regarding the choices to use Section 179 expensing or bonus depreciation.

2.2 Bonus depreciation

In the wake of the September 11 attacks and the recession of 2001, the Job Creation and Worker Assistance Act of 2002 put in place in Section 168(k) of the Internal Revenue Code an additional first-year depreciation deduction equal to 30 percent of the adjusted basis of qualified property (30 percent "bonus" depreciation) for property placed in service on or after September 11, 2001. The Jobs and Growth Tax Relief Reconciliation Act (JGTRRA) of 2003 increased the bonus depreciation percentage to 50 percent, for investment made after May 5, 2003 and before January 1, 2005. Following its expiration at the end of 2004, bonus depreciation was not in place during 2005-2007 -- the middle-to-latter years of that economic expansion. In 2008, 50 percent bonus depreciation was reinstated by the Economic Stabilization Act (ESA) of 2008, and the American Recovery and Reinvestment Act (ARRA) of 2009 extended it through 2009. The Small Business Jobs Act (SBJA) of 2010 initially extended 50 percent bonus depreciation through 2010, but full 100 percent expensing was put in place for the period September 9, 2010 through December 31, 2011 by the Tax Relief and Unemployment Insurance Reauthorization and Job Creation Act (TRUIRJCA) of 2010. Bonus depreciation at 50 percent was extended through 2012 by TRUIRJCA, through 2013 by the American Tax Relief Act (ATRA) of 2012, and through 2014 by the Tax Increase Prevention Act (TIPA) of 2014. The Protecting Americans from Tax Hikes (PATH) Act of 2015 extended 50 percent bonus depreciation for the years 2015 through 2017, and then a partial phase-down to 40 percent bonus depreciation for 2018 and 30 percent bonus depreciation for 2019. Qualified property for bonus depreciation is generally new equipment and prepackaged software (see Appendix C for more specific information on qualified property).

Taxpayers may claim bonus depreciation if they have eligible investment and, unlike Section 179 expensing, there are no investment or income limits. Eligible investment is investment to which the general rules of the MACRS apply and have a class life of 20 years or less.[8] Original use must commence with the taxpayer claiming the deduction; used equipment purchases do not qualify for bonus depreciation.

In addition to the general provisions for bonus depreciation, a variety of special cases for bonus depreciation treatment have been put in place in various years and periods over the past decade -- notably for New York Liberty Zone property, Gulf Opportunity Zone property,

[8] Eligible investment also includes water utility property, computer software (other than software covered by Section 197), qualified leasehold improvement property, and certain aircraft. Property required to be depreciated under the Alternative Depreciation System (ADS), notably tangible property used predominantly outside the United States, is not eligible for bonus depreciation.

cellulosic and biomass fuel plant property, reuse and recycling property, and disaster assistance property.[9]

3. ECONOMICS OF ACCELERATED DEPRECIATION

Before presenting and examining results from reported tax data, it is informative to examine how accelerated tax depreciation affects a firm's marginal effective tax rate and investment decision.

3.1 The mechanics of bonus depreciation

To illustrate the impact of bonus depreciation, Table 1 lists the "regular" tax law (MACRS) and temporary 50 percent bonus depreciation schedules for the six classes of eligible investment. A simple example demonstrates how bonus depreciation works. Assume that a firm invests $100 in equipment that has a tax life of five years. Usually, under MACRS the depreciation deduction would be $20 for the first year. If the investment qualifies for the 50 percent bonus allowance, then the firm can write-off or deduct 50 percent of the investment in the first year (i.e., $50), and then depreciate the remaining amount using the regular depreciation schedule. In this example, the firm would claim $50 in bonus depreciation plus another $10 of regular depreciation (($100 - $50) times 20 percent), for a total deduction equal to $60 in the first

Table 1 -- Regular MACRS and Bonus Depreciation Schedules

	Year										
	1	2	3	4	5	6	7	8	9	10	11
Regular MACRS depreciation schedule (half year convention) by property life											
3 year	33.33	44.45	14.81	7.41							
5 year	20.00	32.00	19.20	11.52	11.52	5.76					
7 year	14.29	24.49	17.49	12.49	8.93	8.92	8.93	4.46			
10 year	10.00	18.00	14.40	11.52	9.22	7.37	6.55	6.55	6.56	6.55	3.28
15 year	5.00	9.50	8.55	7.70	6.93	6.23	5.90	5.90	5.91	5.90	5.91
20 year	3.75	7.22	6.68	6.18	5.71	5.29	4.89	4.52	4.46	4.46	4.46
Modified schedule with 50 percent bonus depreciation											
3 year	66.67	22.23	7.41	3.71							
5 year	60.00	16.00	9.60	5.76	5.76	2.88					
7 year	57.15	12.25	8.75	6.25	4.47	4.46	4.47	2.23			
10 year	55.00	9.00	7.20	5.76	4.61	3.69	3.28	3.28	3.28	3.28	1.64
15 year	52.50	4.75	4.28	3.85	3.47	3.12	2.95	2.95	2.96	2.95	2.96
20 year	51.88	3.61	3.34	3.09	2.86	2.64	2.44	2.26	2.23	2.23	2.23

** Note that the schedules for 15 year and 20 year property extend beyond the years shown here, which were truncated for presentation purposes*

[9] Our review of the data indicates these amounts are generally small in aggregate compared to the general bonus depreciation amounts. Because the amounts for these special provisions are reported the same way as general bonus (on line 14 of Form 4562), they are included in the estimates we present below.

year. This is shown in the second line of the bottom section of Table 1. Note that the reported bonus deduction does not represent the net additional deduction claimed by the firm in the year the investment is made ($40 in this example); the incremental deduction attributable to the bonus provision is somewhat less than the bonus deduction itself.

3.2 The user cost of capital and effective tax rates

Bonus depreciation reduces the effective tax rate on investment because it increases the net present value of the depreciation allowance. The first set of columns in Table 2 show the net present value of deductions for regular MACRS depreciation and for the 50 percent bonus depreciation schedules under an assumption of a 5 percent discount rate. Bonus depreciation can substantially accelerate deductions, especially for longer-lived property. Compared to regular tax depreciation, 50 percent bonus depreciation increases the net present value of deductions by 25 percent for twenty-year property. Conversely, for three-year property, 50 percent bonus depreciation adds little to net present values: about 2percent.

Although present value comparisons are straightforward and can be informative, they do not provide a comprehensive measure of the impact that accelerated tax depreciation has on investment incentives. A more complete measure is a firm's marginal effective tax rate which is a derivative of the cost of capital as first developed by Hall and Jorgensen (1967). The cost of capital is the pre-tax rate of return on a barely profitable investment that covers the investment's tax cost while still leaving the investor his or her required after-tax rate of return. The cost of capital represents the pre-tax return on the final or marginal investment; firms should undertake additional investment as long as the (net of depreciation) marginal product of capital exceeds the cost of capital.

Following Hall and Jorgenson (1967) and a typical approach considered in the literature, a simplified representation of the cost of capital (for one dollar of investment) is given by (in this case for a corporation and net of economic depreciation):

$$(1) \qquad c = (r + \delta)\left(\frac{1 - \tau z}{1 - \tau}\right) - \delta$$

where r is the real discount rate, δ is the rate of economic depreciation, τ is the statutory corporate tax rate, and z is the present discounted value of allowances for tax depreciation deductions (for

one dollar of investment).[10] The second parenthetical term on the right-hand side $(1 - \tau z)/(1 - \tau)$ illustrates the role of tax depreciation deductions and the corporate tax rate; for given nominal interest rates, expected inflation, economic depreciation rates, and statutory tax rates, the user cost of capital rises or falls as the present discounted value of allowances for tax depreciation rises or falls. As long as the present discounted value of tax depreciation deductions is less than one, that term will be greater than one. Accelerated depreciation -- increasing z closer to 1 -- in general reduces the user cost of capital; special provisions for immediate expensing -- z equal to 1 -- would minimize the user cost *ceteris paribus* and eliminate the role of taxes in determining the user cost in the relevant range for expensing.

Table 2 depicts the impact of bonus depreciation on firms' cost of capital for the six classes of eligible investment. The computations assume that investments are held forever and two-fifths of investment is financed by debt, the remainder with equity which is split between retained earnings and new share issues. (In equation (1), the method of financing affects r and is not explicitly visible.) The computations assume that the required real return to investment is equal to 3.5 percent. The computations also include the effects of taxes at the investor level: we set individual/investor level tax rates at 20 percent for capital gains and dividends and 30 percent for interest income.

Using these assumptions, the marginal effective tax rate is then equal to the difference between the cost of capital (c) and the required return on investment (r) divided by the cost of capital or $(c - r) / c$. The marginal effective tax rate is the tax rate that, if levied on economic income, would be equivalent in its incentive effects to the various features of the tax code modeled in the cost of capital formula, such as depreciation, statutory tax rates at the entity and

Table 2 -- Cost of Capital and Marginal Effective Tax Rates

	Present Value of Deduction*		Cost of Capital, Net		Marginal Effective Tax Rate	
	MACRS	50% Bonus	MACRS	50% Bonus	MACRS	50% Bonus
Tax Life						
3 year	95.5	97.7	4.3	3.9	19.2	10.6
5 year	91.8	95.9	4.4	4.0	21.2	11.9
7 year	88.4	94.2	4.5	4.0	22.9	12.9
10 year	83.7	91.9	4.5	4.0	22.7	12.8
15 year	73.3	86.7	4.7	4.1	25.9	14.9
20 year	66.7	83.3	4.7	4.1	26.1	15.0

** Assumes discount rate of 5.0 percent*

[10] We note this simple cost of capital representation is based on various assumptions, including that firms have sufficient tax liability to utilize deductions; firms do not resell assets; it ignores state and local taxes; and it ignores debt finance and individual level taxes.

investor levels and indexing provisions. If the tax system measured and taxed economic income, then the marginal effective tax rate on investment would equal the statutory tax rate.

3.3 Cash flow benefit of bonus depreciation

Marginal effective tax rates are useful when considering the firm's investment decision, but they do not provide insight regarding bonus depreciation's cash flow benefit to a firm. Table 3 shows the maximum potential benefit to firms who claim bonus depreciation for a $1 million investment. The computed cash flow benefit is simply the net present value of the change in tax liability over the tax life of the investment.[11] For example, bonus depreciation on a $1 million investment in five-year property would reduce tax liability by $140,000 in the year of investment: $600,000 times 35 percent less $200,000 times 35 percent. Bonus depreciation then increases tax liability by $56,000 in the second year, $33,600 in the third year, $20,160 in the fourth and fifth years and $10,080 in the sixth year (a net differential of zero if we ignore present value). The net present value of this change in tax liability over the investment's tax life -- $14,292 in the second row first column of Table 3 -- shows the firm's cash flow benefit from delaying tax payments. For three-year property, the computed cash flow benefit is more modest at $7,879. The cash flow benefit more than doubles to $20,237 for seven-year property. For twenty-year property, the cash flow benefit is significant at $58,339 because bonus depreciation pulls deductions forward from tax years many years in the future. It should be noted that the cash flow benefit appears much larger for longer-lived property largely due to the asset's longer tax life for a given outlay.

These simple cash flow computations as shown in the "immediate use" column of Table 3 assume that firms have sufficient taxable income to make full use of all accelerated deductions in the first year of bonus depreciation. However, this assumption does not hold for many firms. For example, loss firms cannot immediately use the accelerated deduction to offset taxable income and must instead carry the loss forward to offset taxable income in a future year. Alternatively, firms with stocks of unused credits or loss carryforwards may receive less benefit from bonus depreciation if the accelerated deduction merely displaces a credit or loss carryforward that would have been claimed in its absence. For carryforward firms and firms that generate new tax credits, it is possible that bonus depreciation has little or no impact on the stream of tax liability reported by the firm.

Table 3 lists the cash flow benefit if the additional bonus depreciation allowances cannot be used to offset taxable income for one or two tax years. This delay may effectively occur if the

[11] For purposes of illustration in these examples, we use the statutory corporate tax rate as the relevant tax rate.

Table 3 -- Cash Flow Benefit from Bonus Depreciation

$1 million eligible investment, 50 percent bonus depreciation

	Immediate use*	Delay one year	Delay two years
Tax Class			
3 year property	7,879	2,324	560
5 year property	14,292	7,625	3,816
7 year property	20,237	13,094	8,235
10 year property	28,466	20,966	15,251
15 year property	46,659	38,743	31,957
20 year property	58,339	50,318	43,252

** Assumes discount rate of 5.0 percent*

firm reports a tax loss or if the firm has loss carryforwards or credits that could be used to offset taxable income. For three-year property, a one-year delay reduces the cash flow benefit by 70 percent; a two-year delay reduces the benefit by 90 percent. For five-year and seven-year property, a one-year delay reduces the cash flow benefit by about 35 to 45 percent; a two-year delay by about 60 to 70 percent. For fifteen- and twenty-year property, a one-year delay reduces the cash flow benefit by only 14 to 17 percent; a two-year delay by 26 to 32 percent.

4. The Policy Perspective and Evidence in the Literature

The continued use and expansion of small business expensing and bonus depreciation suggest that policymakers believe such policies have value for certain firms -- and for the economy in general. Even so, various factors can limit the value and use for firms from greater expensing of investment, and the evidence is mixed regarding the extent to which such policies promote increased investment.

4.1 Perceived benefits ... and possible limitations and costs?

The Ways and Means Committee -- in its committee report for the Jobs and Growth Tax Relief Reconciliation Act of 2003 -- cited the perceived investment and economic benefits from expanded Section 179 expensing and from bonus depreciation. For Section 179 expensing:

> The Committee believes that section 179 expensing provides two important benefits for small businesses. First, it lowers the cost of capital for tangible property used in a trade or business. With a lower cost of capital, the Committee believes small business will invest in more equipment and employ more workers. Second, it eliminates depreciation recordkeeping requirements with respect to expensed property. In order to increase the value of these benefits and to increase the number of taxpayers eligible, the Committee bill increases the amount allowed to be expensed under section 179 and increases the amount of the phase-out threshold, as well as indexing these amounts. (Committee on Ways and Means (2003), p. 25)

Similarly, for bonus depreciation:

> The Committee believes that increasing and extending the additional first-year depreciation will accelerate purchases of equipment, promote capital investment, modernization, and growth, and will help to spur an economic recovery. As businesses accelerate their purchases of equipment current employment will increase to produce that equipment. (Committee on Ways and Means (2003), p. 23)

Related to our earlier discussion above, Cohen, Hansen and Hassett (2002) showed that "By reducing the user cost for equipment and software, partial expensing provides the incentives to stimulate current investment, an impact that is likely to be strengthened by the temporary nature of the provision." Auerbach (2009) identified benefits -- but also some limitations -- for bonus depreciation:

> Bonus depreciation increases the incentive to invest by increasing the present value of depreciation deductions. It might have an advantage over other investment incentives that do not affect the timing of tax payments if private discount rates substantially exceed the government's discount rate, as might be especially true at the moment. But the key to any scheme of accelerated depreciation is the acceleration, since there is no net increase in the nominal deductions taken over time. Thus, for firms without taxable income that may become taxable only years later, bonus depreciation is of little value. This may be a more important issue now than in earlier decades, given the sharp and as yet not fully understood surge in losses observed earlier in this decade.

Steuerle (2008) further addresses the challenges associated with using bonus depreciation during periods of slower economic performance, and especially as an investment incentive:

> What types of businesses can actually use this type of allowance? Those that already have a lot of profits. ... Many businesses -- both those that are new and those that are going through rough times -- can't take advantage of such a generous tax break. Interestingly, it is during an economic slowdown or recession that businesses hardest hit will be the ones put at a further disadvantage: They will be relatively less likely than other firms to be able to take advantage of extraordinary write-offs. ... Even if one wants temporary investment incentives, bonus depreciation is an anti-competitive way to provide them.

Additional complications regarding the use and incentives from bonus depreciation have been identified, notably from states decoupling from Federal tax code for purposes of determining depreciation deductions:

> The pressure on states to decouple from federal efforts to stimulate the economy is not a new development. The Job Creation and Worker Assistance Act of 2002 (Pub. L. No. 107-147)—enacted during a recession—provided an additional first-year depreciation to encourage investment. Ultimately, about 30 states decoupled from the provision. States have since decoupled from various other provisions—including bonus depreciation provisions that apply to the 2008 and 2009 tax years, federal net operating loss provisions, and federal treatment of cancellation of indebtedness income. (Gregory and Roll (2010))

To the extent that firms choose to simplify their tax accounting and reporting, the decoupling of state tax treatment from Federal bonus depreciation would raise additional tax accounting costs and burdens that could limit the use and potential benefits from bonus depreciation.

4.2 Research and evidence on induced investment responses

Although we do not provide any new direct evidence in this paper on the responsiveness or inducement of investment to Section 179 expensing or bonus depreciation, the information on the firm use/take-up of those provisions has direct bearing on the question of whether the provisions act as significant incentives for investment. In their review of literature regarding the empirical evidence on the effectiveness of investment incentives, Hungerford and Gravelle (2010) properly put the issue in the context of the question of whether investment is responsive to changes in the "price" of capital. Hassett and Hubbard (2002) provided a review of the empirical literature at that time, stating "Many observers even recently (e.g., Clark (1993)) have argued that tax policy likely does not significantly affect investment." Indeed, empirical estimates of the responsiveness of investment to changes in the user cost indicate an inelastic response; Cummins, Hassett and Hubbard (1994) estimated the elasticity of aggregate investment with respect to the user cost of capital at about -0.66, while Chirinko, Fazzari, and Meyer (1999) found that their

micro-dataset-based estimates "lead us to prefer a precisely estimated but small elasticity of approximately -0.25." Lee and Rabanal (2010) found that in estimation of investment equations for forecasting purposes, the use of a tax-adjusted measure for the user cost of capital was inferior to an unadjusted measure of the user cost of capital. Such inelastic investment responses to changes in the price of capital -- and unreliable estimation results for empirical purposes -- would seem therefore to make it less likely, or more difficult to identify, that bonus depreciation or other accelerated depreciation provisions have a significant incentive effect on investment.

The evidence from recent studies that specifically addressed the role of bonus depreciation as an investment incentive is mixed, at best. Desai and Goolsbee (2004) found only a small response of investment to the initial implementation of bonus depreciation, stating: "Changes to depreciation allowances simply do not have much impact when the system is already so close to full expensing and when aggregate declines in market value (and therefore in q) are so large." Cohen and Cummins (2006) observed empirical evidence that "suggests only a very limited impact of partial expensing on investment spending, if any." Cohen and Cummins also cited several surveys of businesses indicating that "partial expensing affected investment decisions of very few respondents." House and Shapiro (2008), in contrast to many other studies, observed significant investment effects from bonus depreciation such that "Capital that benefitted substantially from the policy saw sharp increases in investment," in which the investment response was higher for longer-lived equipment relative to shorter-lived equipment, and for bonus-eligible investment goods relative to non-eligible investment goods. Interestingly, Huston (2006) found evidence that "firms made changes to their investment patterns, significantly increasing purchases of advantaged assets ... [but] also significantly decreased non-advantaged asset purchases, leading to only a marginal overall increase in capital expenditures." Auerbach and Hassett (2009) provide a review of evidence and accept the view that "the partial expensing provision would have a small and positive effect on investment."

Hulse and Livingstone (2010) found mixed evidence with some results indicating that bonus depreciation led to higher capital expenditures during its availability, while other results suggested an insignificant effect. Edgerton (2011a) observed that because firms place greater weight on accounting treatment and profits, accelerated depreciation would be less effective in stimulating business investment; similarly, Hanlon (2012) argued that financial accounting effects can strongly influence the incentives of tax policy for investment and notably that, "companies respond less than predicted to bonus depreciation partly because the tax savings are not reflected

on a firm's accounting income statement."[12] Edgerton (2010) examined asymmetries between taxable and nontaxable firms and finds results suggesting "that tax incentives have the smallest impact on investment exactly when they are most likely to be put in place -- during downturns in economic activity when cash flows are low." Edgerton (2011b) examined prices of used equipment (which is not eligible for bonus depreciation and the price should be held down relative to the price of new equipment which is eligible for bonus) and finds that "There is no evidence ... that recent bonus depreciation investment incentives had any effect on the relative price of used construction machinery."

More recently, Zwick and Mahon (2014, 2016) examined the use of bonus depreciation in more detail. Zwick and Mahon (2016) found that "bonus depreciation raised investment in eligible capital relative to ineligible capital by 10.4% between 2001 and 2004 and 16.9% between 2008 and 2010. Second, small firms respond 95% more than big firms. Third, firms respond strongly when the policy generates immediate cash flows but not when cash flows only come in the future." They also observe that the results support "models in which financial frictions or fixed costs amplify investment responses."

Hence, on the whole, empirical results are mixed regarding the extent to which bonus depreciation provisions have a significant incentive effect for investment. Nonetheless, beyond any investment incentive effects and other relationships, Section 179 expensing and bonus depreciation can also have important cash flow effects for businesses. We turn next to the presentation of information and data regarding the observed use of Section 179 expensing and bonus depreciation.

5. IRS TAX DATA AND DERIVING INVESTMENT BASIS

The data used for this analysis are from the Internal Revenue Service's (IRS) SOI income tax files for tax years 2002 through 2014.[13] The data files for each year are stratified samples of returns for the tax year, weighted to represent national totals. For individuals, the tax year coincides with the calendar year; for corporations, tax year *t* includes firms with tax years that end in July of year *t* through June of year *t+1*.

[12] See also Neubig (2006).
[13] The data for corporations used in this paper are "advance" tax year 2014 data; final data for 2014 were not yet available when the numbers were produced for this paper.

5.1 IRS Form 4562: Depreciation and Amortization

Much of the data of interest for this analysis is drawn from the reported amounts from IRS *Form 4562: Depreciation and Amortization* – which is presented in Appendix A. Firms report detailed information on investment basis and depreciation amounts on Form 4562, including a worksheet calculation for determining the investment amounts and income limitations for Section 179; the "special depreciation allowance" (bonus depreciation); and the investment basis and depreciation amounts for property depreciated under MACRS and other methods.

5.2 Deriving investment basis for Section 179 and bonus

The calculation of the investment basis amounts for Section 179 and bonus depreciation deductions closely follows from the data for Form 4562.[14] However, because there is not an exact alignment of the Form 4562 data with statutory definitions of qualified eligible property, and also because of the Section 179 investment limits, special accounting and imputations must be made. For both Section 179 and bonus depreciation, property depreciated under MACRS with a recovery period of 20 years or less is generally eligible property. For bonus depreciation, only new property is eligible, while for Section 179 used property (new to the owner) is also eligible. In examining the detailed data, we observed several special cases and likely incorrect reporting for which we had to make special accounting: notably imputing a basis amount from the reported deduction when deductions are shown for a given asset life but no basis is reported; imputing basis to properly reflect the amount of a reported bonus depreciation deduction when there is an obviously underreported basis amount; and in some cases we simply had to eliminate firms when the data reported were obviously incorrect and we were unable to make reasonable imputations.

Because Section 179 deductions are targeted toward small businesses and are therefore limited by law, they are capped by a "dollar limitation" and a "reduction in limitation" (a phase-out once investment reaches and exceeds certain levels). The tables that follow show the dollar limitation and the phase-out level; Appendix B shows the legislative history for these limits. The calculation of the investment basis amounts for the case of Section 179 deductions therefore begins by capping the Section 179 deduction amount at the maximum permitted under the general Section 179 limits. The calculated eligible property basis for Section 179 is the sum of the capped Section 179 deduction, reported bonus depreciation, the reported basis amounts for 3-, 5-, 7-, 10-, 15-, and 20-year property, and an imputed software investment basis. In addition to the investment limit and phase-out, Section 179 deductions are subject to a business income limit --

[14] For a detailed description of the methods we used to calculate the relevant investment basis that is eligible for bonus depreciation or Section 179, the reader is referred to Appendix C. We provide only a summary here in the text.

as IRS *Publication 946* states: "limited to the taxable income from the active conduct of any trade or business during the year." Disallowed deduction amounts resulting from the income limitation can be carried over to subsequent years. Using reported income variables by reporter, we calculated the amount of eligible basis under the business income limit to determine the amount of "allowed" basis for Section 179 deductions in the current year.

The calculation for the eligible basis for bonus was similar to that described above for the eligible property basis for Section 179 -- the sum of the MACRS basis amounts, imputed software basis, and reported bonus depreciation -- but the Section 179 deduction amount and any Section 179 carryover amounts are not included in the calculation. Another notable difference is that only "new" property and not "used" property, is eligible for bonus depreciation. To account for used investment, we reduced the calculated basis by 6 percent based on evidence from the Annual Capital Expenditures Survey (ACES).

6. BUSINESS USE OF SECTION 179 EXPENSING AND BONUS DEPRECIATION: THE DATA

Tables 4, 5, 6 and 7 present annual data on key variables for the years 2002-2014 across the various legal forms: C corporations, S corporations, partnerships, and individuals. The data in the table are presented from the perspectives of both the numbers of firms and the dollar amount of investment. The data presentation takes a top down approach, starting from the broadest measure and working down to the narrowly-defined Section 179 and bonus firms and investment amounts. In the bottom of each table, for convenience of reference the last three lines show by year the Section 179 investment limitation, the Section 179 full phase-out level, and the bonus depreciation percentage.

Table 4 provides the data for C corporations. The top line shows that the total number of filers was generally around two million firms from 2002 to 2006, with that number trailing off to just over 1.6 million by 2012-2014. These results reflect the ongoing trend toward fewer businesses incorporated as C corporations. The numbers of C corporations with eligible Section 179 basis and with bonus basis declined across the sample period absolutely, and also relative to the total number of firms: the number claiming the Section 179 deduction fell from 369,935 in 2002 to 244,217 in 2014, and the number claiming bonus depreciation fell from 346,468 in 2002 to 131,575 in 2014. For the Section 179 take-up percentages, only about 40 to 50 percent of firms with eligible investment used Section 179 expensing. However, that does not account for the income limitation that requires sufficient business income to use the Section 179 expensing deduction. Accounting for the income limitation, the take-up percentage for the number of firms with "allowed" Section 179 investment was generally around 80 percent. For bonus depreciation,

usually less than half of corporations with eligible investment basis actually used bonus depreciation, with the rate varying from 41 percent to 52 percent. It is notable that the highest take-up rate at 52 percent was in 2011, the year of 100 percent bonus depreciation. Analogous results are shown in the bottom half of the table for the dollar amounts of investment. The Section 179 take-up rates were generally in the 70 to 80 percent range relative to allowed Section 179 basis amounts; the bonus take-up percentages were in the 53 to 59 percent range for 2001-2004 but were more varied over the 2008-2014 period, ranging from 47 percent in 2008 to 75 percent in 2012. The data show higher use of bonus depreciation relative to eligible investment in the later years, averaging near 70 percent across 2011-2014.

Notable exceptions for the general patterns for the take-up rates for Section 179 expensing and bonus depreciation occurred for the tax year 2011 when 100 percent bonus depreciation was in place; in that year, the take-up percentages for the number of firms using Section 179 expensing were at markedly lower levels than for other years (e.g., for C corporations at 69 percent compared to the more-typical take-up rates near 80 percent) – and the percentage of firms using bonus was higher as noted above. The number of C corporations using Section 179 expensing in 2011 was about 40,000 lower than the average for surrounding years, while the number using bonus depreciation was about 40,000 higher. These results suggest, at least at some margin, a fungible choice in the 2011 tax year between claiming Section 179 expensing and (full) 100 percent bonus expensing; given that either provision would yield full expensing, some businesses perhaps viewed it as a simplification to use bonus depreciation, rather than Section 179 expensing with its reporting and calculation requirements for the associated limits, phase-outs and income tests.

An additional observation regarding the bonus depreciation amounts and investment are (1) the large increase in eligible bonus basis from 2011 to 2012 (a 15.7 percent increase) and (2) the peaking of the bonus take-up rate in 2012 (for the dollar amount); these occurred despite the fall from 100 percent bonus in 2011 to 50 percent bonus in 2012. From the perspective of bonus depreciation creating incentives for boosting investment, then, if anything, one would tend to think the temporary full expensing (100 percent) in late 2010 through 2011 should have pulled investment forward out of 2012. Looking ahead to the NIPA data in Table 8, we see there also was a corresponding jump in the NIPA data for investment in 2012, but somewhat less strong at 12 percent. These outcomes are contrary to an expectation that the retreat from 100 percent expensing to 50 percent expensing would result in somewhat weaker investment in 2012 relative to otherwise, and particularly in the first quarter of 2012; but the NIPA investment data do not

show that, and in 2012:Q1 the growth rate for NIPA equipment investment was a strong 18 percent.[15]

Table 5 provides the analogous comparisons for bonus depreciation and Section 179 expensing use for S corporations. In contrast to the decline for the total number of C corporations over time observed in Table 1, the number of S corporations rose steadily over the period shown, from 3.15 million in 2002 to 4.38 million in 2014 (top line of Table 5). The number of S corporations claiming the Section 179 expensing deduction rose from 724,164 in 2002 to over 900,000 for 2005 to 2007, but then fell to 736,438 in 2009 during the recession, and then rose again to over 870,000 for 2012-2013 and 945,898 in 2014. The Section 179 take-up percentage – both for the number of firms with allowed investment and for the dollar amount of investment – generally persisted around 75 percent to 80 percent. Regarding bonus depreciation use, progressively fewer S corporations used bonus depreciation over the period 2002-2004 and the number using bonus depreciation over the 2008-2014 (aside from 2011) period tended to run at around 400,000 or just over. Regarding the total dollar amount of bonus depreciation deductions used, aside from the recession year of 2009 ($18 billion) and the 100 percent bonus year of 2011 ($52 billion), bonus use by S corporations during 50 percent bonus years was relatively steady in the $24 billion to $28 billion range. The bonus depreciation take-up percentages were relatively steady as well, with the take-up percentage for firms generally running in the 50 percent to 54 percent range, and the take-up percentage relative to eligible investment being generally around 60 percent. As noted above for the C corporation data, some notable exceptions to the general patterns occur for 2011 when 100 percent bonus depreciation was in place: relative to the observed take-up rates for most years, bonus depreciation take-up rates were higher for 2011 while the take-up rates for Section 179 were lower. In terms of the number of firms using the provisions, the number of firms using Section 179 expensing fell by about 200,000 in 2011 compared to the average for surrounding years, while the number of firms using bonus depreciation rose by about 200,000 compared to surrounding years.

Table 6 presents the data for partnerships. The top line shows, similar to observed for S corporations, a steady increase in the number of partnerships, rising from 2.242 million in 2002 to 3.611 million by 2014. Take-up rates for Section 179 expensing for the number of firms and the dollar amount of allowed basis were generally in the 60 percent to 70 percent range (aside from 2011); however, the take-up rates for Section 179 expensing relative to the eligible investment basis were much lower – generally in the 20 percent to 30 percent range. Those results suggest a

[15] These observations seem consistent with a view that, in the aggregate at least, bonus depreciation and the user cost of capital effects are of, at best, secondary importance for determining investment relative to other factors such as the general level of economic activity and the overall investment environment and outlook.

large number of partnerships that didn't have sufficient income to meet the income test for using the Section 179 deduction – i.e., low taxable income or even in loss position. For 2011, a similar pattern as that observed for C corporations and S corporations – although somewhat less pronounced – occurs for the lower Section 179 take-up rates by firms and higher bonus depreciation use.

For individual filers, the results presented in Table 7 show the total number of individual filers in the 130 million to 153 million range across the 2002-2014 period with the combined sole proprietors, farmers, rental real estate, etc. (from Schedules C, F, and E) accounting for about 31 million to 40 million over those years.[16] On average, about one-fifth (7.1 million to 7.8 million per year) of those filers have eligible 179 basis, with about 90 percent of those having allowable 179 basis once the income test is applied. The take-up percentage, both relative to the number of firms and relative to the amount of allowed investment basis, generally is in the 60 percent to 70 percent range across the years. For bonus depreciation, the take-up rate percentages in the 45 percent to 49 percent range (other than 2011) relative to the number of filers with eligible basis show that generally just less than half of the filers with eligible bonus basis actually use bonus depreciation. Relative to the amount of eligible investment, the take-up rates are even lower, in the 33 percent to 40 percent range. As for the other legal forms, the 2011 results show fewer filers reporting Section 179 expensing deductions and more using bonus depreciation.

Table 8 presents aggregate results, which in most cases are the sum of the results across the various business forms. We also present some rough comparisons for the observed SOI data on investment in comparison to adjusted data for equipment and software from the National Income and Product Accounts (NIPAs).[17] Care must be taken in interpreting the numbers shown, in particular for the total Section 179 numbers; for example, the total number of firms using Section 179 is a larger number than would actually claim it because of the use by pass-through entities (S corporations and partnerships) that would have to pass-through the Section 179 to the final reporters (usually individuals, except for corporate partners). Nonetheless, pass-through entities do "use" Section 179 as they report those amounts on the 4562 form, but then the 179 amounts are passed through to shareholders or partners. Also, for individual filers we do not treat each separate schedule filed as a separate reporter. Aggregate amounts of Section 179 and bonus deductions are shown at the bottom of Table 8 with the Section 179 values only including the amounts reported by individuals (including the amounts from pass-through entities) and C

[16] The number here represents the number of individual filers, not the number of separate schedules; hence, an individual with multiple schedules for Schedules C, E or F counts as one filer.
[17] These aggregate investment comparisons are not meant to be exact, but rather illustrative of the rough relative comparison in magnitude of the amounts of investment in the SOI and the NIPAs.

corporations. Over the 2003 to 2011 period, the total Section 179 amounts were in the $44 billion to $59 billion range, rising only gradually even though the Section 179 investment limits rose from $100,000 in 2003 to $500,000 in 2010-2011. Higher Section 179 expensing total amounts in the $76 billion to $87 billion range were observed in 2012-2014 with the maintained $500,000 limit and the economy returning to sustained recovery. For bonus depreciation, the total amounts were at just over $200 billion for 2004, 2008 and 2009. The 100 percent bonus year of 2011 saw a very large $548 billion total bonus depreciation deduction amount, and the bonus depreciation totals were at about $340 billion over 2012-2014 with the return to 50 percent bonus. Looking at the total bonus depreciation amounts in Table 8 and comparing back to the bonus depreciation amounts in Table 4 for C corporations, it can be seen that C corporations account for about two-thirds of all bonus depreciation. The combined total for Section 179 and bonus depreciation expensing amounts were around $250 billion to $260 billion for 2004, 2008 and 2009, $348 billion in 2010, $602 billion in 2011, and in the $422 billion to $435 billion range for 2012-2014.

All in all, Table 8 provides a good summary of the data and relationships. There are essentially three distinct periods: 2002-2009; 2010-2011; and 2012-2014. And, looking across the tables and years, there appears to be a definite shift upwards after the period for 100 percent bonus of late 2010 through 2011, both in terms of bonus depreciation claimed and for take-up rates. One hypothesis is that 100 percent bonus got a number of firms to claim bonus depreciation that otherwise did not do so previously under only 50 percent bonus. Then, once having claimed it in 2011, a then higher number of firms continued to claim subsequently under the return to 50 percent bonus, perhaps due to (1) having incurred fixed costs (accounting, tax reporting and other) to claim it and/or (2) it would have too big a negative impact on cash flows not to continue claiming 50 percent.

Table 4: Section 179 and Bonus Use -- C Corporations

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of C Corporations													
Total filers	2,100,074	2,047,593	2,027,613	1,974,961	1,955,147	1,865,232	1,782,478	1,715,306	1,671,149	1,648,540	1,617,739	1,611,125	1,635,528
Section 179													
Number with eligible 179 basis	863,085	841,729	820,151	772,411	742,992	658,805	613,730	568,858	552,118	545,179	533,294	521,176	496,179
Number with allowable 179 basis	456,957	468,514	466,772	463,902	437,644	388,105	329,777	299,243	298,388	294,227	308,299	311,639	300,926
Number claiming 179 deduction	369,935	382,132	383,583	387,048	367,522	327,047	269,665	243,224	236,942	204,105	246,264	250,773	244,217
179 takeup percentage													
Relative to eligible basis	43%	45%	47%	50%	49%	50%	44%	43%	43%	37%	46%	48%	49%
Relative to allowed	81%	82%	82%	83%	84%	84%	82%	81%	79%	69%	80%	80%	81%
Bonus Depreciation*													
Number with eligible bonus basis	671,764	596,505	571,468	--	--	--	418,665	383,880	374,668	398,424	348,431	342,427	321,361
Number claiming bonus depreciation	346,468	278,368	253,540	31,012	4,900	27,974	191,449	163,605	167,023	206,516	161,811	149,984	131,575
Bonus takeup percentage	52%	47%	44%	--	--	--	46%	43%	45%	52%	46%	44%	41%
Billions of dollars													
Total "equipment and software" basis	519.1	481.7	496.2	491.2	557.6	533.7	576.7	501.0	527.5	570.3	624.4	658.0	691.9
Section 179													
Total basis eligible for 179	10.6	22.1	22.9	21.5	20.7	20.8	25.8	21.6	28.4	30.7	31.1	32.2	31.4
Total allowed for 179 deduction	5.0	10.1	11.1	11.7	11.1	11.1	12.1	10.1	13.5	13.7	15.8	16.8	16.7
Total 179 deduction claimed**	4.0	7.5	8.8	9.7	9.2	9.0	9.3	7.8	9.6	8.4	11.9	13.1	13.3
179 takeup percentage													
Relative to eligible basis	37%	34%	38%	45%	45%	43%	36%	36%	34%	27%	38%	41%	42%
Relative to allowed	79%	74%	79%	83%	83%	81%	77%	78%	71%	61%	75%	78%	80%
Bonus Depreciation*													
Total basis eligible for bonus	508.5	471.2	478.0	--	--	--	552.4	481.7	516.7	546.5	632.3	636.7	668.7
Bonus amount claimed	80.7	113.1	140.5	8.9	3.1	8.3	130.4	137.4	198.4	355.7	237.0	217.1	225.7
Bonus takeup percentage	53%	56%	59%	--	--	--	47%	57%	62%	65%	75%	68%	68%
NOTE: Listed property bonus claimed	*0.9*	*1.1*	*1.3*	*0.1*	*0.0*	*0.1*	*1.2*	*1.0*	*0.9*	*1.4*	*1.0*	*1.1*	*1.0*
Section 179 limitation	24,000	100,000	102,000	105,000	108,000	125,000	250,000	250,000	500,000	500,000	500,000	500,000	500,000
Section 179 phaseout level	200,000	400,000	410,000	420,000	430,000	500,000	800,000	800,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Bonus Depreciation %	30%	30%/50%	50%	na	na	na	50%	50%	50%/100%	100%	50%	50%	50%

* *Not including listed property*

** *Adjusted to exclude special 179 deductions for disasters, etc.*

[A] *Advance data for 2014*

Table 5: Section 179 and Bonus Use -- S Corporations

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014[A]
Number of S Corporations													
Total filers	3,154,377	3,341,606	3,518,334	3,684,086	3,872,766	3,989,893	4,049,944	4,094,562	4,127,554	4,158,572	4,205,452	4,257,909	4,379,593
Section 179													
Number with eligible 179 basis	1,354,256	1,508,835	1,529,708	1,555,673	1,600,539	1,567,932	1,504,139	1,412,374	1,443,209	1,479,511	1,522,370	1,533,186	1,585,200
Number with allowable 179 basis	906,683	1,024,427	1,081,597	1,142,438	1,140,907	1,119,385	1,018,708	955,293	1,023,745	1,069,504	1,157,226	1,153,478	1,225,070
Number claiming 179 deduction	724,164	820,428	860,459	938,694	936,953	906,965	818,068	736,438	775,589	591,784	878,925	872,240	945,898
179 takeup percentage													
Relative to eligible basis	53%	54%	56%	60%	59%	58%	54%	52%	54%	40%	58%	57%	60%
Relative to allowed	80%	80%	80%	82%	82%	81%	80%	77%	76%	55%	76%	76%	77%
Bonus Depreciation*													
Number with eligible bonus basis	890,558	865,785	854,519	--	--	--	820,667	784,083	794,587	984,486	767,521	788,567	780,384
Number claiming bonus depreciation	539,200	470,191	449,818	18,380	8,516	6,009	444,970	389,044	421,633	624,290	397,450	417,009	408,306
Bonus takeup percentage	61%	54%	53%	--	--	--	54%	50%	53%	63%	52%	53%	52%
Billions of dollars													
Total "equipment and software" basis	79.7	91.5	102.8	106.1	127.2	114.4	117.8	87.6	92.0	108.5	117.7	126.1	130.7
Section 179													
Total basis eligible for 179	16.0	35.5	36.9	37.5	40.8	41.6	49.8	41.6	53.5	59.0	61.7	67.1	71.7
Total allowed for 179 deduction	9.7	20.1	21.5	23.7	24.9	25.2	28.0	23.7	32.2	34.3	38.9	43.0	45.8
Total 179 deduction claimed	7.3	15.6	16.4	19.0	20.1	20.1	21.4	17.4	22.6	18.0	27.7	32.5	35.2
179 takeup percentage													
Relative to eligible basis	46%	44%	45%	51%	49%	48%	43%	42%	42%	30%	45%	48%	49%
Relative to allowed	75%	77%	76%	80%	80%	80%	76%	74%	70%	52%	71%	76%	77%
Bonus Depreciation*													
Total basis eligible for bonus	69.7	73.6	81.3	--	--	--	89.9	64.0	66.9	83.8	85.9	88.3	89.7
Bonus amount claimed	12.8	18.2	24.9	1.1	0.8	0.9	24.4	18.1	24.3	52.2	25.4	27.6	25.9
Bonus takeup percentage	61%	57%	61%	--	--	--	54%	57%	59%	62%	59%	63%	58%
NOTE: Listed property bonus claimed	*1.1*	*1.3*	*1.7*	*0.2*	*0.0*	*0.0*	*1.5*	*1.3*	*1.8*	*3.0*	*1.9*	*2.0*	*2.1*
Section 179 limitation	24,000	100,000	102,000	105,000	108,000	125,000	250,000	250,000	500,000	500,000	500,000	500,000	500,000
Section 179 phaseout level	200,000	400,000	410,000	420,000	430,000	500,000	800,000	800,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Bonus Depreciation %	30%	30%/50%	50%	na	na	na	50%	50%	50%/100%	100%	50%	50%	50%

* *Not including listed property*

** *Adjusted to exclude special 179 deductions for disasters, etc.*

[A] *Advance data for 2014*

Table 6: Section 179 and Bonus Use -- Partnerships

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Partnerships													
Total filers	2,242,169	2,375,375	2,546,877	2,763,625	2,947,116	3,096,334	3,146,006	3,168,728	3,248,481	3,285,177	3,388,561	3,460,699	3,611,255
Section 179													
Number with eligible 179 basis	659,162	730,443	773,678	777,524	806,481	831,866	834,980	810,064	778,638	805,665	813,639	866,658	855,679
Number with allowable 179 basis	259,177	291,767	309,264	343,262	350,037	341,521	324,328	329,675	330,045	346,767	366,014	377,786	395,783
Number claiming 179 deduction	186,097	212,618	216,290	246,191	256,624	248,558	235,067	221,018	235,583	185,757	265,020	269,246	296,262
179 takeup percentage													
Relative to eligible basis	28%	29%	28%	32%	32%	30%	28%	27%	30%	23%	33%	31%	35%
Relative to allowed	72%	73%	70%	72%	73%	73%	72%	67%	71%	54%	72%	71%	75%
Bonus Depreciation*													
Number with eligible bonus basis	485,613	501,344	537,519	--	--	--	571,660	546,807	574,761	644,994	589,469	627,083	603,524
Number claiming bonus depreciation	283,190	299,172	306,590	16,308	8,948	6,216	326,379	328,915	335,228	403,652	360,418	394,320	354,894
Bonus takeup percentage	58%	60%	57%	--	--	--	57%	60%	58%	63%	61%	63%	59%
Billions of dollars													
Total "equipment and software" basis	159.7	148.8	154.6	158.4	198.9	223.6	248.4	204.7	191.0	246.8	273.3	296.1	333.5
Section 179													
Total basis eligible for 179	7.6	18.3	20.7	20.7	21.7	24.9	33.7	29.7	40.3	44.7	50.7	52.9	55.8
Total allowed for 179 deduction	2.7	6.1	6.9	7.7	8.0	8.5	10.5	9.4	12.6	14.8	16.8	18.1	18.5
Total 179 deduction claimed	1.9	4.0	4.6	5.4	5.5	5.9	6.8	5.5	7.3	6.7	10.4	11.5	12.6
179 takeup percentage													
Relative to eligible basis	24%	22%	22%	26%	25%	24%	20%	18%	18%	15%	20%	22%	23%
Relative to allowed	68%	65%	67%	70%	69%	70%	65%	58%	58%	46%	62%	64%	68%
Bonus Depreciation*													
Total basis eligible for bonus	150.3	138.6	141.4	--	--	--	227.6	186.4	181.8	231.1	260.1	278.4	312.2
Bonus amount claimed	16.5	25.0	35.7	2.2	2.2	1.6	37.6	40.8	52.7	116.9	70.1	83.8	82.3
Bonus takeup percentage	37%	42%	50%	--	--	--	33%	44%	47%	51%	54%	60%	53%
NOTE: Listed property bonus claimed	*0.5*	*0.4*	*0.5*	*0.6*	*0.7*	*0.5*	*0.7*	*0.7*	*0.5*	*0.8*	*0.5*	*0.6*	*0.3*
Section 179 limitation	24,000	100,000	102,000	105,000	108,000	125,000	250,000	250,000	500,000	500,000	500,000	500,000	500,000
Section 179 phaseout level	200,000	400,000	410,000	420,000	430,000	500,000	800,000	800,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Bonus Depreciation %	30%	30%/50%	50%	na	na	na	50%	50%	50%/100%	100%	50%	50%	50%

* *Not including listed property*

** *Adjusted to exclude special 179 deductions for disasters, etc.*

Table 7: Section 179 and Bonus Use -- Individuals (Sole Proprietors, Farmers, Rental)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Individual Filers													
Total filers	130,076,443	130,423,626	132,226,042	134,372,678	138,394,754	153,560,404	142,450,569	140,494,127	142,892,051	145,370,240	144,928,472	147,351,299	148,606,578
Schedule C, E, F filers	31,327,204	32,254,758	33,454,349	34,672,584	35,506,983	37,140,719	36,312,734	36,641,581	37,110,900	37,796,545	38,604,649	39,282,329	39,976,913
Section 179													
Number with eligible 179 basis	7,331,073	7,584,093	7,752,752	7,585,708	7,752,718	7,846,973	7,269,347	7,118,558	7,245,747	6,973,923	7,300,554	7,411,042	7,436,243
Number with allowable 179 basis	6,673,551	6,969,544	7,132,165	7,026,013	7,225,485	7,272,064	6,682,576	6,523,927	6,640,289	6,318,568	6,717,981	6,817,211	6,861,876
Number claiming 179 deduction	3,991,160	4,196,518	4,374,168	4,471,087	4,641,591	4,727,175	4,305,608	4,127,479	4,166,729	3,546,859	4,317,250	4,348,284	4,402,982
179 takeup percentage													
Relative to eligible basis	54%	55%	56%	59%	60%	60%	59%	58%	58%	51%	59%	59%	59%
Relative to allowed	60%	60%	61%	64%	64%	65%	64%	63%	63%	56%	64%	64%	64%
Bonus Depreciation*													
Number with eligible bonus basis	3,671,563	3,628,978	3,675,679	--	--	--	3,231,288	3,158,520	3,304,256	3,540,879	3,138,048	3,211,029	3,168,404
Number claiming bonus depreciation	1,711,972	1,669,655	1,657,647	77,398	39,265	17,866	1,470,712	1,519,498	1,620,630	1,865,062	1,497,692	1,535,905	1,551,723
Bonus takeup percentage	47%	46%	45%	--	--	--	46%	48%	49%	53%	48%	48%	49%
Billions of dollars													
Total "equipment and software" basis	75.6	90.2	95.9	103.6	103.8	106.4	107.2	88.9	99.9	101.5	124.8	134.0	137.3
Section 179													
Total basis eligible for 179	46.6	76.8	80.8	82.5	86.2	89.4	93.7	79.5	94.1	94.2	115.8	123.4	126.3
Total allowed for 179 deduction	39.7	61.8	65.9	66.7	71.0	73.1	74.6	62.7	74.6	71.2	91.3	99.0	102.4
Total 179 deduction claimed	22.1	36.6	39.7	41.3	44.8	47.5	49.8	41.3	49.6	44.8	64.4	70.9	73.6
179 takeup percentage													
Relative to eligible basis	47%	48%	49%	50%	52%	53%	53%	52%	53%	48%	56%	57%	58%
Relative to allowed	56%	59%	60%	62%	63%	65%	67%	66%	67%	63%	71%	72%	72%
Bonus Depreciation*													
Total basis eligible for bonus	50.5	50.8	52.2	--	--	--	54.7	43.7	47.1	51.8	56.0	58.4	58.3
Bonus amount claimed	6.0	7.3	9.1	0.7	0.8	0.6	9.9	7.3	9.9	18.3	10.0	10.3	10.7
Bonus takeup percentage	40%	33%	35%	--	--	--	36%	33%	34%	35%	36%	35%	37%
NOTE: Listed property bonus claimed	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Section 179 limitation	24,000	100,000	102,000	105,000	108,000	125,000	250,000	250,000	500,000	500,000	500,000	500,000	500,000
Section 179 phaseout level	200,000	400,000	410,000	420,000	430,000	500,000	800,000	800,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Bonus Depreciation %	30%	30%/50%	50%	na	na	na	50%	50%	50%/100%	100%	50%	50%	50%

** Not including listed property*

*** Adjusted to exclude special 179 deductions for disasters, etc.*

Table 8: Section 179 and Bonus Use -- Aggregates

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Number of Filers													
Total number of C, S, Partner & Sch. C, E, F filers	38,823,824	40,019,332	41,547,173	43,095,256	44,282,012	46,092,178	45,291,162	45,620,177	46,158,084	46,888,834	47,816,401	48,612,062	49,603,289
Total number claiming Section 179 deductions	5,271,356	5,611,696	5,834,500	6,043,020	6,202,690	6,209,745	5,628,408	5,328,159	5,414,843	4,528,505	5,707,459	5,740,543	5,889,359
Total number claiming bonus depreciation	2,880,830	2,717,386	2,667,595	143,098	61,629	58,065	2,433,510	2,401,062	2,544,514	3,099,520	2,417,371	2,497,218	2,446,498
Billions of dollars													
NIPA Private Investment Data													
Equipment investment	659.6	669.0	719.2	790.7	856.1	885.8	825.1	644.3	731.8	838.3	937.9	982.8	1,040.7
Prepackaged software	60.3	63.3	67.0	69.2	69.1	70.3	72.8	71.3	62.0	68.2	73.6	77.6	82.9
Plus: Approx. NIPA structures in SOI "equipment"	12.0	12.4	23.8	33.0	37.4	45.8	51.2	50.8	41.5	46.4	57.3	48.9	58.8
Less: Net purchases of used autos and lt trucks	-71.5	-64.1	-64.3	-66.8	-68.8	-73.8	-73.9	-77.7	-74.5	-68.0	-66.6	-72.1	-77.6
Adjusted "new" equipment and software invest	803.4	808.8	874.3	959.7	1031.4	1075.7	1023.0	844.1	909.8	1020.9	1135.4	1181.4	1260.0
SOI Investment Data													
Total SOI "equipment and software" basis	834.1	812.1	849.5	859.4	987.5	978.0	1050.1	882.2	910.3	1027.2	1140.2	1214.2	1293.4
Section 179 Deductions													
C Corporations	4.0	7.5	8.8	9.7	9.2	9.0	9.3	7.8	9.7	8.4	11.9	13.2	13.3
S Corporations	7.3	15.6	16.4	19.0	20.1	20.2	21.4	17.4	22.6	18.0	27.7	32.5	35.2
Partnerships	1.9	4.0	4.6	5.4	5.5	5.9	6.9	5.5	7.3	6.7	10.4	11.5	12.6
Individuals	22.1	36.6	39.7	41.3	44.8	47.5	49.8	41.3	49.6	44.8	64.4	70.9	73.6
179 passthrough amounts													
From S corporations	6.9	14.4	16.2	18.0	18.7	19.0	20.7	16.3	21.0	17.6	26.7	30.2	34.8
From Partnerships	1.7	3.6	3.9	4.0	4.5	4.8	5.7	4.7	5.7	4.9	7.5	9.4	8.5
Excess not used in current year	-1.6	-3.5	-4.3	-5.2	-1.9	-1.3	-1.2	-0.6	-0.7	-0.7	-0.9	-0.8	-0.8
Net passthrough amount in individ 179	6.9	14.6	15.8	16.9	21.3	22.5	25.2	20.4	26.0	21.8	33.3	38.8	42.6
Net Total Section 179 Deductions	**26.0**	**44.0**	**48.5**	**50.9**	**54.0**	**56.5**	**59.2**	**49.1**	**59.3**	**53.2**	**76.3**	**84.1**	**86.9**
Bonus depreciation													
Regular bonus depreciation	116.0	163.6	210.2	13.0	6.9	11.5	202.4	203.5	285.4	543.1	342.6	338.8	344.7
Listed property bonus	2.5	2.8	3.5	0.8	0.7	0.6	3.4	3.0	3.1	5.3	3.4	3.6	3.4
Total Bonus amount claimed	**118.5**	**166.4**	**213.7**	**13.8**	**7.6**	**12.1**	**205.8**	**206.5**	**288.5**	**548.4**	**346.0**	**342.5**	**348.0**
Total, Section 179 and Bonus	**144.5**	**210.5**	**262.2**	**64.7**	**61.6**	**68.6**	**265.0**	**255.6**	**347.8**	**601.7**	**422.3**	**426.5**	**434.9**

7. ECONOMETRIC ANALYSIS: BONUS USE AND ESTIMATED PROBABILITY OF TAKE-UP

To further examine the role of key variables in determining business use of bonus depreciation, we used Probit estimation on selected subset of the C corporation data from 2008. Probit estimation is a binary estimation procedure – based on assigning 0 or 1 values to whether a firm uses or does not use bonus in this case – that therefore allows us to estimate the probability of firm take-up of bonus depreciation for given characteristics.[18]

7.1 The sample

We adjusted the sample by 1) including only those firms with investment basis eligible for bonus; 2) eliminating filers reporting consolidated returns; and 3) including only filers with an identified state location.[19] These changes to the sample help to assure that we have individual corporations with eligible bonus property – and for an identified state because we examine the role of state depreciation law conformity to Federal law. After these adjustments the sample size is 29,869. We use the unweighted data as we are interested in the individual firm behavior and not the aggregate numbers or amounts.

7.2 Specification and results

Table 9 presents the results from the probit estimation of the following equation:

(2) $Bonus\ firm = \beta_0 + \beta_1 State + \beta_2 InvLife + \beta_3 GrsRcpts + \beta_4 LossFirm + \beta_5 NOLD + \sum \gamma_i Ind_i$

where

Bonus firm= 1 for firm using bonus depreciation, = otherwise

State = 1 for State that conforms to Federal for bonus depreciation, =0 otherwise[20]

*InvLife*is the average investment life in years for the firm's investment[21]

*GrsRcpts*is the firm's gross receipts, in $millions

LossFirm= 1 if the firm has net income < 0, = 0 otherwise

NOLD= 1 if the firm has a net operating loss deduction

Ind_i= 1 for firm in 2-digit NAICs industry i, = 0 otherwise (manufacturing dummy is excluded and is the base case of the estimation)

[18] This section is a replication of the same material from Kitchen and Knittel (2011).
[19] The state location variable from the SOI data doesn't preclude multi-state locations for component parts of the corporation; that relationship could limit the interpretation of the state effects observed in the estimation, particularly for large firms.
[20] The state conformity was taken from Gregory and Roll (2010), *BNA Daily Tax Report*.
[21] Note that the weighted average equipment life across all firms in the sample is 5.8 years.

The results, in terms of the signs of the coefficients on the explanatory variables, generally conform to what should be expected from theory and analysis. But caution should be taken in interpreting and applying the results. Because the estimation is Probit, the coefficients of the variables do not represent the marginal impact of the explanatory variable on the estimated probability. The estimated marginal effect in these estimations would be about one-third the magnitude of the shown coefficient estimate; we examine alternative values below but do so by letting the estimation software produce the result. Also, the McFadden R-squared is low at 0.04 – low even for this measure which is often low in Probit estimations. Hence, although the results and following discussion appear reasonable and confirming of priors, there is wide variability in the relationships and limited confidence in prediction.

In Table 9, the state conformity variable has a positive coefficient, aligning with the perspective that a firm would find it easier or less costly to use bonus depreciation if the accounting for depreciation were simpler, i.e. being able to use one set of books for depreciation treatment for tax purposes. The positive coefficient on the investment asset life term conforms to the view that bonus depreciation would be of greater value for firms with longer-lived equipment relative to shorter-lived equipment. The positive coefficient on the gross receipts variable indicates that larger firms are more likely to use bonus depreciation than smaller firms. The negative coefficients on the loss firm variable and on the net operating loss variable conform to the expectation that firms in a loss position or using net operating loss deductions would not find the immediate, accelerated depreciation deductions of bonus depreciation to be of as much value.[22] Finally, the coefficients on the industry variables generally seem reasonable as well. Recalling that the base case is for manufacturing, the lone coefficient that is positive and significant is for the mining industry, a capital intensive industry. The coefficients for most other industries are negative and significant (with a few exceptions). Hence, the results suggest that higher bonus take-up rates would be expected to occur in manufacturing and mining – and lower take-up rates in services and other industries.

To illustrate the implications of the results for the probability of a firm using bonus depreciation, Table 10 shows the estimated probabilities under various conditions. The first case is a large, profitable manufacturing company in a state that conforms to Federal bonus depreciation, and with above-average equipment life (10 years); the estimated probability of bonus use is about 95 percent. In the second case, if instead of being profitable, the firm is in a

[22] Note that firms that are in a loss position or with net operating loss deductions greater than the amount of bonus deduction available for use still often use bonus depreciation; net operating losses can be carried forward, for example. In the restricted sample used for the estimation for Table 8, of the 17,431 firms that used bonus depreciation 7,026 were in a loss position.

Table 9 -- Probit estimation results for C corporation use of bonus depreciation

Dependent variable: Bonus firm = 1 for bonus depreciation > 0; 0 otherwise

Explanatory variable	Coefficient	Std error	z-statistic
Constant	0.024	0.026	0.912
State conformity (1 = yes, 0 = no)	0.066	0.021	3.054
Investment asset life (years)	0.080	0.003	25.785
Gross receipts ($ billions)	0.033	0.006	5.841
Loss firm (1 = yes, 0 = no)	-0.358	0.016	-22.314
Net operating loss (1 = yes, 0 = no)	-0.360	0.027	-13.294
NAIC industries: (1 = yes, 0 = no)			
11 Agriculture	-0.576	0.051	-11.209
21 Mining	0.160	0.055	2.915
22 Utilities	-0.415	0.089	-4.657
23 Construction	-0.105	0.034	-3.077
31 Manufacturing	--	--	--
42 Wholesale trade	-0.013	0.028	-0.476
44 Retail trade	-0.131	0.032	-4.139
48 Trans & Warehousing	-0.216	0.049	-4.400
51 Information	-0.072	0.037	-1.973
52 Finance & Insurance	-0.096	0.029	-3.311
53 Real estate & Leasing	-0.262	0.041	-6.406
54 Prof, Sci & Tech Services	-0.143	0.029	-4.970
55 Holding companies	0.014	0.032	0.431
56 Admin & Support Services	0.086	0.054	1.592
61 Educational services	0.140	0.113	1.238
62 Health care & Social assist	-0.078	0.048	-1.615
71 Arts, Entertain & Recreation	-0.304	0.074	-4.101
72 Accommodation & Food Servs	-0.223	0.054	-4.166
81 Other Services	-0.325	0.061	-5.360
90 Not allocable	-0.668	0.780	-0.856
McFadden R-squared	0.040		
Mean of dependent variable	0.584		
Total observations	29,869		
Observations with dep var = 0	12,438		
Observations with dep var = 1	17,431		

Table 10 -- Representative Examples of Bonus Takeup Probabilities from Probit Estimation Results

	Example for firm type	Probability	Conform	Eqlife	Grsrcpts	lossfirm	NOLD	Industry
			(0,1)	(Years)	($ mils)	(0,1)	(0,1)	(0,1)
1	Large, profitable manufacturing company in conforming state with above average equipment life	0.947	1	10	10,000	0	0	Manuf (base)
2	Same as above, but with loss	0.804	1	10	10,000	1	0	Manuf (base)
3	Large manufacturer with loss in nonconforming state and average equipment life	0.621	0	6	5,000	1	0	Manuf (base)
4	Small manuf company with short life equipment investment, in nonconform state	0.604	0	3	5	0	0	Manuf (base)
5	Medium manuf company in nonconforming state, with loss	0.560	0	6	250	1	0	Manuf (base)
6	Small to medium manuf company in nonconforming state, with NOLD	0.558	0	6	100	0	1	Manuf (base)
7	Large profitable mining company in conforming state	0.899	1	10	7,000	0	0	Mining
8	Small farmer in nonconforming state, with loss	0.362	0	7	1	1	0	Agriculture
9	Small service firm with loss, with short-lived investment in nonconforming state	0.338	0	3	5	1	0	Services

loss position then the estimated probability drops by about 15 percent to 80 percent. The third case considers a large manufacturer in a nonconforming state, in a loss position, and with average equipment life (6 years); the estimated probability for bonus use is 62 percent. Cases 4, 5 and 6 examine small to medium manufacturing firms in nonconforming states, with short to average equipment life and varying loss or net operating loss deduction status; the probabilities are in the 56 percent to 60 percent range. Case 7 considers a large, profitable mining firm in a conforming state with above average equipment, yielding an estimated probability of 90 percent (similar to the first case, except for mining instead of manufacturing and about two-thirds as large in terms of gross receipts). Cases 8 and 9 consider small firms that are in loss position, with short-to-average life equipment, in nonconforming states, in agriculture and in services; the estimated probabilities are low, at 36 percent and 34 percent.

8. SELECTED ISSUES

This section provides information and data on several additional issues, including the distribution of bonus depreciation and Section 179 use by industry, the distribution by income levels, and the challenge of properly accounting for "used" property in making the estimates.

8.1 Distribution of bonus depreciation and Section 179 use by industry

To provide some further information and context that readers and analysts may find of value, Table 11 presents data from 2008 on the use of bonus depreciation and Section 179 expensing by C corporations by two-digit NAICS industry. The data show that, as might be expected, manufacturing accounts for a large share (23 percent) of the use of bonus depreciation with information, wholesale trade and utilities also representing important shares. For Section 179 use by C corporations, the largest users are construction; agriculture, forestry, fishing, and hunting; manufacturing; wholesale trade; and professional, scientific and technical services.

8.2 Distribution by income levels

The distribution of the use of Section 179 and bonus depreciation according to a gross income measure (see Table 12) is largely as one might expect[23]. Section 179 deductions, with their investment limits, are concentrated more at lower income levels; bonus depreciation, with the unlimited amounts of eligible investment, end up being used more by large firms at higher income levels. For example, for individuals, the predominant use of both bonus depreciation and

[23] The gross receipts measure used here is derived in a manner similar to that in the Knittel, et al, (2011) paper on small businesses.

Table 11: Bonus Depreciation and Section 179 by 2-Digit NAICS Industry, 2008 ($ millions)

	2-Digit NAICS Industry	Bonus	% of Total	Section 179	% of Total
	TOTAL	130,409		9,317	
11	Agriculture, Forestry Fishing, Hunting	550	0%	1,107	12%
21	Mining	8,002	6%	139	1%
22	Utilities	13,879	11%	16	0%
23	Construction	1,620	1%	1,507	16%
31	Manufacturing	30,094	23%	1,235	13%
42	Wholesale Trade	12,765	10%	952	10%
44	Retail Trade	11,392	9%	642	7%
46	Wholesale and Retail Not Allocable	0	0%	0	0%
48	Transportation and Warehousing	6,240	5%	402	4%
51	Information	19,648	15%	211	2%
52	Finance and Insurance	5,376	4%	257	3%
53	Real Estate, Rental and Leasing	7,103	5%	268	3%
54	Professional, Scientific and Technical Services	2,829	2%	916	10%
55	Management of Holding Companies	4,463	3%	165	2%
56	Administrative, Support, Waste Mgmt, Remediation Srvcs	1,276	1%	229	2%
61	Educational Services	286	0%	24	0%
62	Health Care and Social Assistance	1,842	1%	724	8%
71	Arts, Entertainment and Recreation	585	0%	99	1%
72	Accommodation and Food Services	2,101	2%	204	2%
81	Other Services	359	0%	221	2%
90	Not Allocable	0	0%	0	0%

Section 179 expensing – generally in excess of 80 percent -- was for gross receipts less than $1 million. In contrast, for C corporations, S corporations, and partnerships, the use of Section 179 expensing was distributed over a broader income range, but with all occurring for firms with less than $1 billion in gross receipts. In the aggregate, the totals shown at the bottom of Table 12 show that generally about one-half or more of Section 179 expensing occurs for firms with less than $1 million in gross receipts. Use of bonus depreciation is generally fairly evenly distributed across income ranges for S corporations and partnerships, but for C corporations bonus use is heavily weighted in the high income range, with more than 75 percent for firms with gross receipts in excess of $1 billion. In aggregate, the total use of bonus depreciation is heavily affected by the C corporation distribution, and the majority use – in the range of 56 percent to 65 percent over the different periods shown – is for firms with gross receipts in excess of $1 billion.

8.3 The challenge of properly accounting for "used property" for bonus basis

In calculating the amount of bonus basis that was eligible for use for bonus we had to make some assumptions for special issues. In particular, because used property is not eligible for bonus depreciation, we had to make assumptions about what share of reported basis was "used"

Table 12: Relative Distribution of Section 179 Deductions and Bonus Depreciation by Business Gross Receipts

	Section 179 Deductions				Bonus Depreciation			
	2002	2003-2007	2008-2009	2010-2014	2002-2004	2008-2009	2011	2012-2014
Section 179 Deduction Limit / Bonus Depreciation Percentage	$24,000	$100,000 - $125,000	$250,000	$500,000	30%-50%	50%	100%	50%
C Corporations								
Gross Business Receipts Range								
Less than $1 million	43%	27%	21%	15%	1%	1%	1%	0%
$1 million up to $10 million	51%	57%	53%	49%	4%	2%	2%	1%
$10 million up to $1 billion	7%	16%	26%	35%	19%	18%	17%	14%
Greather than $1 billion	0%	0%	0%	0%	76%	79%	81%	84%
S Corporations								
Gross Business Receipts Range								
Less than $1 million	56%	37%	27%	21%	18%	14%	11%	12%
$1 million up to $10 million	39%	50%	51%	51%	27%	21%	23%	18%
$10 million up to $1 billion	5%	12%	22%	28%	52%	60%	60%	61%
Greather than $1 billion	0%	0%	0%	0%	3%	5%	7%	9%
Partnerships								
Gross Business Receipts Range								
Less than $1 million	65%	43%	29%	25%	19%	19%	13%	13%
$1 million up to $10 million	32%	48%	55%	54%	18%	22%	14%	14%
$10 million up to $1 billion	3%	9%	16%	21%	39%	36%	38%	37%
Greather than $1 billion	0%	0%	0%	0%	24%	23%	35%	36%
Individual (Net of Pass-Through for Section 179 Numbers)								
Gross Business Receipts Range								
Less than $1 million	96%	90%	83%	96%	83%	75%	94%	93%
$1 million up to $10 million	4%	10%	16%	4%	14%	19%	5%	3%
$10 million up to $1 billion	0%	0%	0%	0%	3%	6%	1%	3%
Greather than $1 billion	0%	0%	0%	0%	0%	0%	0%	0%
Totals								
Gross Business Receipts Range								
Less than $1 million	75%	57%	48%	48%	10%	9%	7%	7%
$1 million up to $10 million	22%	35%	38%	34%	9%	9%	6%	5%
$10 million up to $1 billion	3%	8%	14%	18%	25%	26%	25%	23%
Greather than $1 billion	0%	0%	0%	0%	56%	57%	61%	65%

and not "new". We relied on the Annual Capital Expenditure Survey (ACES) data to make that application -- assuming that 6 percent of reported basis was "used" property. The ACES data is the best available data that we are aware of. Nonetheless, to the extent that actual reported investment basis that is "used" differs from that assumption, the amount of eligible basis in the denominator for the take-up calculation would also be affected. Although the results generally seem reasonable, we still cannot say definitively that they aren't affected by the "used" property assumption we have used. The results for 2008 are an example here. For C corporations, the bonus take-up rate (relative to the amount of investment) is at its lowest -- 47 percent -- in 2008. It is possible that there were increased mergers and acquisitions of firms or purchases of property of failed firms in 2008 as the U.S. economy entered the "great recession." If so, the share of used property in investment might have been higher in 2008 than in other years, and if improperly accounted for it would overstate the amount of new property and understate the bonus take-up rate. Even so, the ACES data did not indicate such a relative change in used property acquisition. We recognize that the results presented can be sensitive to the assumptions made and the calculations involved.

9. CONCLUDING COMMENTS

This paper presents data and evidence on the use of special accelerated depreciation provisions of the past decade, for Section 179 and bonus depreciation. Although firms used both provisions, the observed take-up rates indicate the provisions were not used as extensively as might have been expected *a priori* or in full conformance with the policy perspective of providing a significant investment incentive. Using SOI tax data over the 2002-2014 period, we observed that corporations, pass-through entities, and individuals used Section 179 expensing in the 60 percent to 80 percent range, both in terms of the numbers of firms and relative to total allowed investment amounts. For bonus depreciation, in the years 2002-2004 and 2008-2014, the effective take-up rates were lower than observed for Section 179 expensing. The number of firms using bonus depreciation for eligible investment generally was in the 40 percent to 60 percent range relative to the number eligible, while the bonus depreciation deduction relative to the eligible investment amount generally was in the 50 percent to 70 percent range for C corporations and S corporations, but was at lower ranges of about 40 percent to 60 percent for partnerships and 30 percent to 40 percent for individuals. Total business use of Section 179 expensing and bonus depreciation over the 2002-2014 period averaged nearly $300 billion per year, and more recently over $400 billion per year for 2012-2014. We examined factors that help explain why firms would forgo use of bonus depreciation. In many cases, bonus depreciation may have afforded

little, if any, benefit. Specifically, loss firms and firms with loss carryforwards may realize little cash flow benefit.

Probit analysis of C corporation data from 2008 produced results consistent with such theoretical priors that bonus depreciation use is limited by firms in a loss position, and by firms with net operating loss carryforwards. In addition, the analysis also is consistent with firm's use of bonus depreciation being positively related to 1) the firm's location in a state whose bonus treatment conforms with Federal bonus depreciation; (2) average equipment investment life; 3) the size of the firm; and 4) the firm being a manufacturing or mining firm relative to being in other industries.

While the reasons for the low bonus take-up rates are not fully understood, as discussed in Knittel (2007) that result is consistent with the corporate response to the implementation of the Asset Depreciation Range (ADR) system in 1971. The Revenue Act of 1971 provided a range of asset lives for various classes of assets placed in service after December 1970. The Revenue Act of 1971 allowed firms to use shorter asset lives than provided for under prior law. Although more generous depreciation allowances were made available, Vasquez (1974) found that many firms elected not to use the ADR system and instead used less generous schedules that decreased the present value of deductions. Even among large firms, Vasquez found that only 63 percent of firms elected to use the ADR system. Similar to our results, Vasquez found higher utilization rates for industries dominated by large firms with longer-lived property.

In general, the analysis presented here indicates that bonus depreciation can, in theory, reduce the cost of investment and provide an investment incentive and cash flow benefits, and the data presented show its extensive use by businesses over the years. In practice, however, various factors limit the use of bonus depreciation and its relative value for boosting investment.

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APPENDIX A -- IRS FORM 4562A

Form 4562 — Department of the Treasury, Internal Revenue Service (99)

Depreciation and Amortization
(Including Information on Listed Property)

► See separate instructions. ► Attach to your tax return.

OMB No. 1545-0172

2009

Attachment Sequence No. 67

Name(s) shown on return | Business or activity to which this form relates | Identifying number

Part I Election To Expense Certain Property Under Section 179

Note: *If you have any listed property, complete Part V before you complete Part I.*

1	Maximum amount. See the instructions for a higher limit for certain businesses	1	$250,000
2	Total cost of section 179 property placed in service (see instructions)	2	
3	Threshold cost of section 179 property before reduction in limitation (see instructions)	3	$800,000
4	Reduction in limitation. Subtract line 3 from line 2. If zero or less, enter -0-	4	
5	Dollar limitation for tax year. Subtract line 4 from line 1. If zero or less, enter -0-. If married filing separately, see instructions	5	

6	(a) Description of property	(b) Cost (business use only)	(c) Elected cost

7	Listed property. Enter the amount from line 29	7		
8	Total elected cost of section 179 property. Add amounts in column (c), lines 6 and 7		8	
9	Tentative deduction. Enter the **smaller** of line 5 or line 8		9	
10	Carryover of disallowed deduction from line 13 of your 2008 Form 4562		10	
11	Business income limitation. Enter the smaller of business income (not less than zero) or line 5 (see instructions)		11	
12	Section 179 expense deduction. Add lines 9 and 10, but do not enter more than line 11		12	
13	Carryover of disallowed deduction to 2010. Add lines 9 and 10, less line 12 ►	13		

Note: *Do not use Part II or Part III below for listed property. Instead, use Part V.*

Part II Special Depreciation Allowance and Other Depreciation (Do not include listed property.**)** (See instructions.)

14	Special depreciation allowance for qualified property (other than listed property) placed in service during the tax year (see instructions)	14	
15	Property subject to section 168(f)(1) election	15	
16	Other depreciation (including ACRS)	16	

Part III MACRS Depreciation (Do not include listed property.**)** (See instructions.)

Section A

17	MACRS deductions for assets placed in service in tax years beginning before 2009	17	
18	If you are electing to group any assets placed in service during the tax year into one or more general asset accounts, check here ► ☐		

Section B—Assets Placed in Service During 2009 Tax Year Using the General Depreciation System

(a) Classification of property	(b) Month and year placed in service	(c) Basis for depreciation (business/investment use only—see instructions)	(d) Recovery period	(e) Convention	(f) Method	(g) Depreciation deduction
19a 3-year property						
b 5-year property						
c 7-year property						
d 10-year property						
e 15-year property						
f 20-year property						
g 25-year property			25 yrs.		S/L	
h Residential rental property			27.5 yrs.	MM	S/L	
			27.5 yrs.	MM	S/L	
i Nonresidential real property			39 yrs.	MM	S/L	
				MM	S/L	

Section C—Assets Placed in Service During 2009 Tax Year Using the Alternative Depreciation System

20a Class life					S/L	
b 12-year			12 yrs.		S/L	
c 40-year			40 yrs.	MM	S/L	

Part IV Summary (See instructions.)

21	Listed property. Enter amount from line 28	21	
22	**Total.** Add amounts from line 12, lines 14 through 17, lines 19 and 20 in column (g), and line 21. Enter here and on the appropriate lines of your return. Partnerships and S corporations—see instructions	22	
23	For assets shown above and placed in service during the current year, enter the portion of the basis attributable to section 263A costs	23	

Part V Listed Property (Include automobiles, certain other vehicles, cellular telephones, certain computers, and property used for entertainment, recreation, or amusement.)

Note: *For any vehicle for which you are using the standard mileage rate or deducting lease expense, complete* ***only*** *24a, 24b, columns (a) through (c) of Section A, all of Section B, and Section C if applicable.*

Section A—Depreciation and Other Information (Caution: *See the instructions for limits for passenger automobiles.***)**

24a Do you have evidence to support the business/investment use claimed? ☐ Yes ☐ No **24b** If "Yes," is the evidence written? ☐ Yes ☐ No

(a) Type of property (list vehicles first)	(b) Date placed in service	(c) Business/ investment use percentage	(d) Cost or other basis	(e) Basis for depreciation (business/investment use only)	(f) Recovery period	(g) Method/ Convention	(h) Depreciation deduction	(i) Elected section 179 cost
25 Special depreciation allowance for qualified listed property placed in service during the tax year and used more than 50% in a qualified business use (see instructions)						**25**		
26 Property used more than 50% in a qualified business use:								
		%						
		%						
		%						
27 Property used 50% or less in a qualified business use:								
		%				S/L –		
		%				S/L –		
		%				S/L –		
28 Add amounts in column (h), lines 25 through 27. Enter here and on line 21, page 1 . . .						**28**		
29 Add amounts in column (i), line 26. Enter here and on line 7, page 1							**29**	

Section B—Information on Use of Vehicles

Complete this section for vehicles used by a sole proprietor, partner, or other "more than 5% owner," or related person. If you provided vehicles to your employees, first answer the questions in Section C to see if you meet an exception to completing this section for those vehicles.

	(a) Vehicle 1		(b) Vehicle 2		(c) Vehicle 3		(d) Vehicle 4		(e) Vehicle 5		(f) Vehicle 6	
30 Total business/investment miles driven during the year (**do not** include commuting miles)												
31 Total commuting miles driven during the year												
32 Total other personal (noncommuting) miles driven												
33 Total miles driven during the year. Add lines 30 through 32												
	Yes	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**	**Yes**	**No**
34 Was the vehicle available for personal use during off-duty hours?												
35 Was the vehicle used primarily by a more than 5% owner or related person?												
36 Is another vehicle available for personal use?												

Section C—Questions for Employers Who Provide Vehicles for Use by Their Employees

Answer these questions to determine if you meet an exception to completing Section B for vehicles used by employees who **are not** more than 5% owners or related persons (see instructions).

	Yes	**No**
37 Do you maintain a written policy statement that prohibits all personal use of vehicles, including commuting, by your employees?		
38 Do you maintain a written policy statement that prohibits personal use of vehicles, except commuting, by your employees? See the instructions for vehicles used by corporate officers, directors, or 1% or more owners . . .		
39 Do you treat all use of vehicles by employees as personal use?		
40 Do you provide more than five vehicles to your employees, obtain information from your employees about the use of the vehicles, and retain the information received?		
41 Do you meet the requirements concerning qualified automobile demonstration use? (See instructions.) . .		
Note: *If your answer to 37, 38, 39, 40, or 41 is "Yes," do not complete Section B for the covered vehicles.*		

Part VI Amortization

(a) Description of costs	(b) Date amortization begins	(c) Amortizable amount	(d) Code section	(e) Amortization period or percentage	(f) Amortization for this year
42 Amortization of costs that begins during your 2009 tax year (see instructions):					
43 Amortization of costs that began before your 2009 tax year				**43**	
44 Total. Add amounts in column (f). See the instructions for where to report				**44**	

APPENDIX B -- LEGISLATIVE HISTORY FOR SECTION 179 AND BONUS DEPRECIATION MAIN PROVISIONS (2000-2016)

Section 179 Expensing Timeline

Section 179 expensing

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
(b)(1) Dollar limitation	20,000	24,000	24,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000
	Under PL-104-188 (1996)																
				100,000	100,000	100,000											
				JGTRA 2003													
							100,000	100,000									
							AJCA 2004										
									100,000	100,000							
									TIPRA 2006								
								125,000	125,000	125,000	125,000						
								SBWOTA 2007									
(b)(7) re (b)(1) amounts									250,000	250,000	250,000						
									ESA 2008	ARRA 2009	HIRE 2010						
											500,000	500,000					
											SBJA 2010						
													125,000 inf adj				
													TRUIRJCA 2010				
													500,000	500,000	500,000	500,000 infl adj -->	
													ATRA 2012		TIPA 2014	PATH 2015	
Section (b)(1) limits as amended:																	
NOTE: Leg/Inflation Adj Amounts			24,000	100,000	102,000	105,000	108,000	125,000	250,000	250,000	500,000	500,000	500,000	500,000	500,000	500,000	500,000
(b)(2) Reduction in limitation (by amount exceeding:)	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
	Under PL 99-514																
				400,000	400,000	400,000											
				JGTRA 2003													
							400,000	400,000									
							AJCA 2004										
									400,000	400,000							
									TIPRA 2006								
								500,000	500,000	500,000	500,000						
								SBWOTA 2007									
(b)(7) re (b)(2) amounts									800,000	800,000	800,000						
									ESA 2008	ARRA 2009	HIRE 2010						
											2,000,000	2,000,000					
											SBJA 2010						
													500,000				
													TRUIRJCA 2010				
													2,000,000	2,000,000	2,000,000	2,000,000 infl adj -->	
													ATRA 2012		TIPA 2014	PATH 2015	
Section (b)(2) limits as amended:																	
NOTE: Leg/Inflation Adj Amounts			200,000	400,000	410,000	420,000	430,000	500,000	800,000	800,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000

Bonus Depreciation Timeline

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Bonus Depreciation -- Section 168 Sept 11 Property																	
30 percent Bonus Depr		Post 9/10/2001	X	X	Pre 9/11/04	*											
		JCWAA 2002															
50 percent Bonus Depr				Post 5/5/2003	X	*			X	X	X		X	X	X	X	X
				JGTRA 2003					ESA 2008	ARRA 2009	SBJA 2010		TRUIRJCA 2010	ATRA 2012	TIPA 2014	PATH 2015	
100 Percent Expensing for Sep 2010 - 2011											Post Sept 8, 2010	X					
											TRUIRJCA 2010						

JCWAA 2002 -- Jobs Creation and Worker Assistance Act of 2002 PL 107-147

JGTRRA 2003 -- Jobs And Growth Tax Relief Reconciliation Act of 2003 PL 108-27

AJCA 2004 -- American Jobs Creation Act of 2004 PL 108–357

TIPRA 2006 -- Tax Increase Prevention and Reconciliation Act of 2006 PL 109-222

SWOBTA 2007 (Defense Supplemental)-- U.S. Troop Readiness, Veterans' Care, Katrina Recovery, and Iraq Accountability Appropriations Act, 2007; Small Business and Work Opportunity Tax Act of 2007 -- PL 110-28

ESA 2008 -- Economic Stimulus Act of 2008 PL 110-185

ARRA 2009 -- American Recovery and Reinvestment Act of 2009 -- Feb 2009 PL 111-5

HIRE 2010 -- Hiring Incentives to Restore Employment Act -- March 2010 -- PL 111-147

SBJA 2010 -- Small Business Jobs Act of 2010, H.R. 5297 PL 111-240

TRUIRJCA 2010 -- Tax Relief and Unemployment Insurance Reauthorization and Job Creation Act of 2010, HR 4853 PL 111-312

ATRA 2012 -- American Taxpayer Relief Act of 2012, HR 8, PL 112-240

TIPA 2014 -- Tax Increase Prevention Act of 2014, HR 5771, PL 113-295

PATH 2015 -- Protecting Americans from Tax Hikes Act, PL 114-113, December 18, 2015 (Consolidated Appropriations Act, 2016; Division Q)

APPENDIX C -- DETERMINATION OF INVESTMENT BASIS FOR SECTION 179 AND BONUS

The calculation of the investment basis amounts for Section 179 and bonus depreciation deductions is based on data reported on -- and closely follows the structure of -- IRS ***Form 4562: Depreciation and Amortization*** (see Appendix A). However, because there is not an exact alignment of the Form 4562 data with statutory definitions of qualified eligible property, and also because of the Section 179 investment limits, special accounting and imputations must be made.

Qualified Property

The following descriptions of qualified property are based on information presented in IRS ***Publication 946: How to Depreciation Property (***see *Publication 946* for more details***)***.

Qualified Property, Section 179 Deduction

To qualify for the Section 179 deduction, property must be eligible property purchased for business use.

1. Tangible personal property (generally machinery and equipment and similar, not real property, but including off-the-shelf computer software).
2. Other tangible property (except buildings and their structural components) used as:
   a. An integral part of manufacturing, production, or extraction or of furnishing transportation, communications, electricity, gas, water, or sewage disposal services,
   b. A research facility used in connection with any of the activities in (a) above, or
   c. A facility used in connection with any of the activities in (a) for the bulk storage of fungible commodities.
3. Single purpose agricultural (livestock) or horticultural structures. See chapter 7 of Publication 225 for definitions and information regarding the use requirements that apply to these structures.
4. Storage facilities (except buildings and their structural components) used in connection with distributing petroleum or any primary product of petroleum.
5. Off-the-shelf computer software.
6. Qualified real property (qualified leasehold improvement, restaurant, retail improvement property).

Land and improvements and other "excepted property" do not qualify for the Section 179 deduction.

Qualified Property, Special Depreciation Allowance (Bonus Depreciation)

1. New property, one of the following types:
   a. Tangible property depreciated under the modified accelerated cost recovery system (MACRS) with a recovery period of 20 years or less.
   b. Water utility property
   c. Computer software that is readily available for purchase by the general public, is subject to a nonexclusive license, and has not been substantially modified.
   d. Qualified leasehold improvement property
2. Property acquired by purchase during period bonus provision is in place, and no prior binding contract in place
3. Property must be placed in service by ending date for bonus provision (an additional year for long-production period and certain aircraft property)

Excepted Property:

1. Property placed in service and disposed of in the same year
2. Property converted from business use to personal use in same tax year it is acquired
3. Property required to be depreciated under the Alternative Depreciation System (ADS).
4. Property for which election made to not claim special depreciation allowance.
5. Qualified restaurant property (post 2008)
6. Qualified retail improvement property (post 2008)
7. Property for which election made to accelerate certain credits in lieu of special depreciation allowance

Some Specific Adjustments to the Data

In examining the detailed data, we observed several special cases and potential misreporting that needed to be accounted for. We observed a number of firms that appear to have reported all their depreciation deductions in the "Other depreciation" field of *Form 4562* line 16, and no other detail; in many cases, these were very large amounts and appear to have been an accounting convenience and did not reflect the correct accounting for basis and depreciation deductions. We chose to eliminate those firms from our accounting. Other firms would report deductions for a specific MACRS asset class, but not any associated basis; for those cases, we imputed a basis amount from the reported deduction. For firms that reported a bonus depreciation deduction, but then did not have reported basis equivalent to what mathematically would be the required amount of basis, we imputed the basis to properly reflect the amount for that reported bonus deduction.

Calculation of Section 179 Investment Basis

Section 179 Limits: Section 179 deductions are targeted toward small businesses, and are therefore limited by law, capped by a "dollar limitation" and a "reduction in limitation" (a phase-out once investment reaches and exceeds certain levels). The tables in the text of the paper show the dollar limitation and the phase-out level; Appendix B shows the legislative history for these limits. For example, in 2008, the general Section 179 deduction was limited to a maximum of $250,000 and that limit was reduced dollar-for-dollar as investment exceeded $800,000 (the reduction in limitation), with a total phase-out for investment at $1,050,000.

Adjusting for Disaster and Other Amounts: During the years under consideration in this study, legislation for several special cases expanded the amounts of the allowed Section 179 deductions for disasters -- including for the New York Liberty zone, Gulf Opportunity Zone, Recovery Assistance property, and Disaster Assistance property. We chose to focus on the general Section 179 deduction and to exclude these amounts. The calculation of the investment basis amounts for the case of Section 179 deductions therefore begins by capping the Section 179 deduction amount at the maximum permitted under the general Section 179 limits. The amounts for these special disaster provisions generally were a very small part of the total; for example, for S corporations in 2008 the difference represented less than $33 million of the $21.4 billion total for Section 179 deductions.

"Eligible Property" Basis: The calculated eligible property basis for Section 179 is the sum of the capped Section 179 deduction, reported bonus depreciation, the reported basis amounts for 3-, 5-, 7-, 10-, 15-, and 20-year property, and an imputed software investment basis. The amount of software investment is imputed as it is not reported on Form 4562; software deductions are

reported in line 16 "Other depreciation". Based on examination of NIPA data for off-the-shelf software investment and calculations based on various depreciation patterns, we estimated that a reasonable imputation for software investment basis was to use approximately 84 percent of the current year "other depreciation" amount. One additional component for the basis is the inclusion of the "carryover of disallowed [Section 179] deduction" from the prior year. The amount of the calculated total basis from the summation was then subjected to the Section 179 dollar limitation and the phase-out of the reduction in limitation to determine the eligible Section 179 basis. Note that listed property amounts included in the reported Section 179 deduction are included in this calculated amount of basis, but no additional amounts of listed property beyond that are included (as listed basis amounts are not reported). Note that reported amounts of bonus depreciation are included in this calculation; Section 179 is eligible for claiming prior to bonus and allows for full expensing, so if bonus is used instead it would represent basis eligible for Section 179 that wasn't used for the Section 179 deduction.

The Section 179 Income Test and "Allowed" Basis: In addition to the investment limit and phase-out, Section 179 deductions are subject to a business income limit -- as *Publication 946* states: "limited to the taxable income from the active conduct of any trade or business during the year." Disallowed deduction amounts resulting from the income limitation can be carried over to subsequent years. Using reported income variables by reporter, we calculated the amount of eligible basis under the business income limit to determine the amount of "allowed" basis for Section 179 deductions in the current year.

Calculation of Basis Eligible for Bonus

The calculation for the eligible basis for bonus was similar to that described above for the eligible property basis for Section 179 -- the sum of the MACRS basis amounts, imputed software basis, and reported bonus depreciation -- but the Section 179 deduction amount and any Section 179 carryover amounts are not included in the calculation. Another notable difference is that only "new" property and not "used" property, is eligible for bonus depreciation. Examination of data from the Census Bureau's Annual Capital Expenditure Survey (ACES) over a variety of years showed that expenditures on used investment typically represented about 6 percent of total investment expenditures for equipment. To account for used investment, we therefore reduced the calculated basis by 6 percent. We did not include listed property in our calculations for bonus depreciation and basis. On *Form 4562*, the amount of listed property bonus depreciation is reported separately and included in listed property deductions, but because listed property basis amounts were not available a useful comparison could not be made including listed property.