

THE VALUE OF ACCELERATED DEPRECIATION USE BY FARMERS: EVIDENCE
FROM MICHIGAN

By

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A THESIS

Submitted to
Michigan State University
in partial fulfilment of the requirement
for the degree of

Agricultural, Food and Resource Economics – Master of Science

2016

ABSTRACT

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In 1981 the IRS tax code created Section 179 depreciation deductions. Section 179 was a form of accelerated depreciation, allowing farmers to deduct a larger amount of depreciation in the year an asset was placed in service. In 2002 “Bonus” depreciation was added as another form of accelerated depreciation available to farm tax filers. Both forms of accelerated depreciation allowed farmers to take large amounts of depreciation in the first year relative to the default tax depreciation known as the Modified Accelerated Cost Recovery System (MACRS). These accelerated depreciation deductions allowed farmers to decrease their taxable income, thus saving them money and incentivizing investment. The objectives of this thesis are to examine: which farms use accelerated depreciation, when and how much they use it; what is the after tax present value of accelerated depreciation deductions; and what is farmers realized decreased cost of capital from these tax policies and implications for investment. This research finds that the after tax present value of accelerated depreciation deductions revealed significant values across all farm types and asset classes. Because of accelerated depreciation use farmers realized decreased cost of capital from accelerated depreciation tax policies. Finally, farmer investments were most responsive in 7 and 10 year property from accelerated depreciation use.

This thesis work is dedicated to my wife and family for their continued love and support. A special feeling of gratitude to my wife, Teal, who has been there for me throughout the challenges of graduate school and life. I am thankful for having you in my life.

ACKNOWLEDGMENTS

I would first like to thank my thesis advisor Dr. Christopher Wolf for the immense time, effort and energy he graciously shared with me. The door to Dr. Wolf's office was always open when I had questions or ran into a problem. I would also like to thank the additional members of my committee, composed of Dr. J. Roy Black and Dr. Timothy Harrigan for their guidance during the research process. I truly appreciate the attention and guidance everyone was willing and able to provide over the course of this project.

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Chapter 1. Introduction

In 1981, the IRS tax code created Section 179 depreciation deductions. Section 179 was a form of Accelerated depreciation deductions, allowing farmers to deduct a larger amount of depreciation in the year an asset was placed in service. In 2002 “Bonus” depreciation was added as another form of Accelerated depreciation available to farm tax filers. Both forms of Accelerated depreciation allowed farmers to take large amounts of depreciation in the first year. These deductions allowed farmers to decrease their taxable income, thus saving them money and incentivizing them to increase investments. The effect of this accelerated depreciation on farm investment and management decisions has remained unexamined to date.

There have been many papers looking at tax policy and investment behavior (Edwards and Boehlje, 1980; Reid and Bradford, 1987; Reid et al., 1980; Weersink and Stauber, 1988). To date, none of which have ever looked at a panel of firms and investigated the benefit of utilizing these deductions across all classes of investments. Many researchers have looked at the use of these policies on individual assets. Due to the lack of data, some authors have made assumptions about Accelerated depreciation deductions. These assumptions often incorrectly interpret the mechanics of the IRS tax code and overlook important the details of Accelerated depreciation use. This thesis highlights the complexities of Accelerated depreciation deduction elections and disaggregates tax policies effects.

Hall and Jorgenson (1967) found that “*The effects of Accelerated depreciation are very substantial, especially for investment in structures.*” They go on to state that:

Our basic conclusion is that tax policy is highly effective in changing the level and timing of investment expenditures. In addition, we find that tax policy has had important effects on the composition of investment. According to our estimates, the

liberalization of depreciation rules in 1954 resulted in a substantial shift from equipment to structures.

The finding that tax policy changes the composition of investments further justifies looking at Accelerated depreciation use over a portfolio of investments. This approach of investigation becomes self-evident once a greater understanding of Section 179 and Bonus depreciation deductions incentive structures are realized.

Additional motivation for this research originates in Chisholm (1974) who found that increased levels of depreciation encouraged investment behavior. Kay and Rister (1976) calculated the present values for each possible replacement year instead of using Chisholm's marginal criteria. Kay and Rister found that while Accelerated depreciation did not have as large an effect on optimal replacement age as expected, it did affect the present value of investment. Ariyaratne and Featherstone (2009) found that when looking at 811 Kansas farm business from 1998 to 2007, the addition of machinery and equipment and listed property depreciation created a strong determinate for investment decisions. House and Shapiro (2008) estimated the investment supply elasticity and found that investment in qualified capital increased sharply with the use of Accelerated depreciation. While this paper does not attempt to explain directly drivers of investment, these previous works dictate the importance of understanding the benefits farmers have received from the addition and expansion of Accelerated depreciation tax policies.

The dataset used in this research is unique in its detail and inclusion of financial and tax depreciation information. The set spans 11 years and 7 Section 179 depreciation and 4 Bonus depreciation deduction policy changes. This thesis does not try to explain investment behavior or factors influencing purchases. It carefully examines the use of Accelerated depreciation by asset class, year and farm type and measures the benefits farmers have received from these

policies. By examining actual, farm-level behavior, this research addresses a gap in the existing literature.

The objective of this thesis is to answer the questions of (1) what is the after-tax present value of Accelerated depreciation deductions and (2) what is farmers realized decreased cost of capital from these tax policies. A present value model as presented in Kay and Rister (1976) is used to evaluate Accelerated, Section 179 and Bonus depreciation deductions. The cost of capital model as proposed by Hall and Jorgenson (1967), is used to determine the changes in the opportunity cost of investments given policy changes. The results have policy implications including whether and how much accelerated depreciation is encouraging farm investment.

The next chapter examines the history of Accelerated depreciation policies for farm managers. Chapter 2 also considers the mechanics of farmer choice when using Accelerated depreciation compared to the default depreciation method. Chapter 3 examines the panel dataset of Michigan farms. Summary statistics on taxable farm income, investment, and depreciation choices by year, class and farm type are examined. These statistics reveal the relative frequency and magnitude of Accelerated depreciation use. Chapter 4 calculates the present value of Accelerated depreciation relative to default IRS depreciation by year, class and farm type. The effect of Accelerated depreciation on the cost of capital is examined using the model from Hall and Jorgensen (1967). The reduction in the cost of capital has implications for investment. Finally, Chapter 5 summarizes and concludes.

Chapter 2. Depreciation and Farm Income Tax Management

2.1 Tax Policy History

In 1942, the U.S Treasury created an item-by-item listing of useful asset lives for over 5,000 types of assets used in 57 different industry activity categories in what was known as Bulletin F (Office of Tax Analysis, U.S. Treasury Department, 1989). These useful asset lives became the *de facto* standard for depreciation deductions, which could be refuted only by substantial evidence produced by the taxpayer (Office of Tax Analysis, U.S. Treasury Department, 1989). In the 1954 Code, Congress authorized accelerated methods of depreciation, called accelerated cost recovery system (ACRS), to encourage businesses to increase investment in depreciable assets. The primary motive behind the introduction of the accelerated methods in 1954, however, was to provide a permanent investment incentive (Office of Tax Analysis, U.S. Treasury Department, 1989). The Senate Finance Committee reported,

“More liberal depreciation allowances are anticipated to have far-reaching economic effects. The incentives resulting from the changes are well timed to help maintain the present high level of investment in plant and equipment. The acceleration in the speed of the tax-free recovery of costs is of critical importance in the decision of management to incur risk. The faster tax write-off would increase available working capital and materially aid growing businesses in the financing of their expansion. For all segments of the American economy, liberalized depreciation policies should assist modernization and expansion of industrial capacity, with resulting economic growth, increased production, and a higher standard of living (U.S. Congress (1954), p. 26).”

Before this, only straight line depreciation was used. Straight line depreciation, calculated as [cost-salvage value]/useful life, allocates equal amounts of depreciation each year. ACRS depreciation originally utilized 200% declining balance (DB) and had an alternate option of depreciation utilizing fixed percentages for each class of property annually. In 1962, the IRS abandoned Bulletin F for asset classes, which are still in use today. In 1986, congress modified ACRS and renamed it the modified accelerated cost recovery system (MACRS). The change to MACRS extended the recovery period of assets and consisted of two depreciation systems, the General Depreciation System (GDS) and Alternative Depreciation System (ADS). These systems are still used today, provided different methods and recovery periods used in calculating depreciation expense. To better display the history of these tax policies table 2.1 is below.

Table 2.1 History of Accelerated Depreciation Tax Policy

Tax Year	What it Was	What it Did	Method of Depreciation
1942	Bulletin F	Listing of asset lives	SL
1954	Accelerated Cost Recovery System (ACRS)	Created accelerated methods of depreciation	200% DB/SL
1962	Asset Classes	Abandoned Bulletin F	
1981	Creation of Section 179	Allowed for additional 1 st year depreciation	Maximum investment and maximum expense limitation
1986	Modified ACRS (MACRS)	Extended recovery periods, and created GDS and ADS	ADS=SL GDS=200% DB, 150% DB and SL
1988	Farm property limited to 150%DB	Standardized depreciation method	GDS=150%DB ADS=SL
2002	Creation of Bonus Depreciation (Sec 168(k))	Allowed for additional 1 st year depreciation	Percent of depreciable basis

GDS periods are shorter compared to ADS periods. MACRS provides three depreciation methods under GDS and one depreciation method under ADS. GDS options include the 200%, straight line depreciation rate * 2, and 150%, straight line depreciation rate * 1.5, declining balance (DB) methods and the straight line method over the GDS recovery periods. ADS allows only the straight line method. Under the 150 and 200% DB methods, taxpayers change from declining balance to straight line at the point when straight line deductions are larger. Depreciation on farm property placed in service after 1988 is limited to 150% declining balance unless tax law states otherwise. Once GDS or ADS is elected to be used on an asset, the asset must remain in that depreciation system for its entire depreciable life. According to the IRS Publication 225, Farmer's Tax Guide, 2014, p. 41:

“Your (farmers) use of either GDS or ADS to depreciate property under MACRS determines what depreciation method and recovery period you use. You generally must use GDS unless you are specifically required by law to use ADS, or you elect to use ADS. Required use of ADS. You must use ADS for the following property.

- *All property used predominantly in a farming business and placed in service in any tax year during which an election not to apply the uniform capitalization rules to certain farming costs is in effect.*
- *Listed property used 50% or less in a qualified business use.*
- *Any tax-exempt use property.*
- *Any tax-exempt bond-financed property.*
- *Any property imported from a foreign country for which an Executive Order is in effect because the country maintains trade restrictions or engages in other discriminatory acts.*

- *Any tangible property used predominantly outside the United States during the year.*

If you are required to use ADS to depreciate your property, you cannot claim the special depreciation allowance.”

The IRS allows farms to depreciate most types of tangible business property except land. This includes such things as buildings, machinery, equipment, vehicles, land improvements and breeding livestock. According to IRS Publication 225, Farmer’s Tax Guide, 2014, p. 35:

“To be depreciable the property must meet the following requirements:

- *It must be property the business owns.*
- *It must be used in the business.*
- *It must have a determinable useful life.*
- *It must be expected to last more than one year.”*

Table 2.2 displays frequently used agricultural property and the associated recovery periods for GDS and ADS. For a complete list of recovery periods, see the *Table of Class Lives and Recovery Periods* in Appendix B of Publication 946 (IRS Publication 225, Farmer’s Tax Guide, 2014, p. 41).

Table 2.2 Farm Property and Recovery Periods

Assets	GDS	ADS
	Years	
Tractor units (over-the-road, ie: semi-trucks)	3	4
Hogs (breeding)	3	3
Horses (breeding and working, more than 12 years)	3	10
Automobiles	5	5
Cattle (dairy or breeding)	5	7
Goats and sheep (breeding)	5	5
Logging machinery and equipment	5	6
Truck (13,000 lbs or more)	5	6
Truck (less than 13,000 lbs)	5	5
Alternative energy	5	12
Farm machinery and equipment	7	10
Fences (agricultural)	7	10
Grain bin	7	10
Horses (12 yrs or less)	7	10
Horticultural structures (single purpose)	10	15
Agricultural structures (single purpose)	10	15
• Manure pit		
Drainage facilities	15	20
Paved lots	15	20
Water wells, irrigation well, well house	15	20
Land Improvements	15	20
• Culvert		
• Ditch		
• Drive, road, gravel		
• Lagoon (not manure pit)		
• Land clearing, pond		
• Tile and erosion structure		
Farm buildings (not single purpose)	20	25

To be able to depreciate an asset, the asset must be placed in service the date of which determines the applicable convention. These conventions simplify the depreciation process because they do not require the filer to prove when the property was placed into service. For farmers, a half-year convention applies meaning all property is assumed placed into service was at the midpoint of the year. The farmer then claims a half-year of depreciation on newly acquired property. This results in a half-year amount of depreciation claimed in the last year of depreciation, accounting for the remaining depreciable basis not claimed in the initial purchase year (IRS Publication 225, Farmer's Tax Guide, 2014). The depreciable basis is the amount of deduction the farmer can claim over the useful life of the asset. IRS Publication 225, Farmers Tax Guide, 2014 describes basis for depreciation by:

“The basis for depreciation of MACRS property is the property’s cost or other basis multiplied by the percentage of business/investment use. Reduce that amount by any credits and deduction allocable to the property. The following are examples of some of the credits and deductions that reduce basis.

- *Any deduction for Section 179 property*
- *Any deduction for removal of barriers to the disabled and the elderly.*
- *Any special depreciation allowance (i.e., Bonus depreciation)*
- *Basis adjustment for investment credit property under section 50(c) of the Internal Revenue Code.” (p. 41).*

For example, a property that has a recovery period of three years is depreciated over four recovery periods with a half-year in the first and fourth year.

To account for behavioral responses by taxpayers attempting to increase their depreciation deduction by making a large percent of their total years’ investment in last three

months of the taxable year, the IRS has more than one applicable convention. If 40 percent of the total basis of depreciable property is placed into service in the last three months of the taxable year, the half-year convention no longer applies, and a mid-quarter convention is used. Mid-quarter convention treats all property placed in service during any month as placed in service on the mid-point of such month (26 U.S. Code § 168, 2015).

Table 2.3 provides additional information on deduction amounts per period. Under MACRS, the recovery period is defined as the number of years over which the cost or other basis is recovered (IRS, 2015). All assets that share the same recovery period fall into an asset class.

Table 2.3 MACRS GDS Percentage Table

Recovery Year	3-Year Class	5-Year Class	7-Year Class	10-Year Class	15-Year Class	20-Year Class
	(Percent of Depreciable Basis)					
1	25	15	10.71	7.5	5.00	3.75
2	37.5	25.5	19.13	13.88	9.50	7.219
3	25	17.85	15.03	11.79	8.55	6.677
4	12.5	16.66	12.25	10.02	7.70	6.177
5		16.66	12.25	8.74	6.93	5.713
6		8.33	12.25	8.74	6.23	5.285
7			12.25	8.74	5.90	4.888
8			6.13	8.74	5.90	4.522
9				8.74	5.91	4.462
10				8.74	5.90	4.461
11				4.37	5.91	4.462
12-15					5.90	4.461
16					2.95	4.462
17-20						4.461
21						2.231

Note: Annual Recovery (Percentage of Original Depreciable Basis), (150% DB is used for farm property placed in service after 1988. Half-year convention)

2.2 Depreciation Examples

To better understand the mechanics of MACRS, an example is given in Table 2.4. Calculating MACRS depreciation deduction starts with the basis of the asset placed in service, which is often the purchase price. Because no asset with a remaining basis was traded for this asset, the purchase price serves as the initial basis of the deduction and is annually adjusted to account for potential credits and adjustments. The initial basis is the asset cost multiplied by the percent of business use (IRS Publication 225, Farmer's Tax Guide, 2014, p. 41). The depreciable basis is the amount of basis remaining after proper credits and adjustments, such as salvage value, investment credits, and Accelerated depreciation, are made. The depreciable basis is spread over the useful life of an asset as defined by the relevant asset class. In the example, the property placed in service is 10-year property. As assumed, it has a half-year convention. The recovery rate is the percent of the depreciable basis that is taken that period. This amount is captured in the depreciation expense column in the table below. Accumulated depreciation is the cumulative value of depreciation taken. At the end of the final recovery period, this value will equal the depreciable basis of the asset. Similarly, the net book value, calculated as (depreciable basis-accumulated depreciation), of the asset will reach zero in the same period because this column represents the amount of basis remaining.

The initial input values for Table 2.4 example include a purchase price of \$650,000 and \$0 in salvage value. This gives the asset a depreciable basis of \$650,000 ($\$650,000 - \0). The estimated life of this asset is ten years, and a half-year convention applies. The net book value calculated is the depreciable basis less the accumulated depreciation.

Table 2.4 Example of MACRS GDS 150% Declining Balance Method

Year	Recovery Rate	Depreciable Basis	Depreciation Expense	Accumulated MACRS Depreciation	Net Book Value
	%	\$			
1	7.50	650,000	48,750	48,750	601,250
2	13.88	650,000	90,220	138,970	511,030
3	11.79	650,000	76,635	215,605	434,395
4	10.02	650,000	65,130	280,735	369,265
5	8.74	650,000	56,810	337,545	312,455
6	8.74	650,000	56,810	394,355	255,645
7	8.74	650,000	56,810	451,165	198,835
8	8.74	650,000	56,810	507,975	142,025
9	8.74	650,000	56,810	564,785	85,215
10	8.74	650,000	56,810	621,595	28,405
11	4.37	650,000	28,405	650,000	0

The Economic Recovery Tax Act of 1981 introduced what we recognize today as Section 179 depreciation deduction. When the shift to the MACRS recovery system was introduced in 1986, Sec 179 continued. Internal Revenue Code Section 179 is formally titled the “Election to Expense Certain Depreciable Business Assets.” Section 179 states that *“A taxpayer may elect to treat the cost of any Section 179 property as an expense which is not chargeable to capital account. Any cost so treated shall be allowed as a deduction for the taxable year in which the Section 179 property is placed in service”* (26 U.S. Code § 179 - Election to expense certain depreciable business assets, 2015). Section 179 allows farms to deduct the full purchase price of qualifying equipment purchased or financed during the tax year. The taxpayer can deduct the full purchase price of a new business investment from their gross taxable income (IRS, 2015).

Section 179 sets a maximum expense deduction and maximum investment limit for the tax year. The maximum expense deduction is the largest value a business can choose to elect as their Section 179 deduction in the current year. The maximum investment limitation dictates

how much a business can spend in the year and still claim a Section 179 deduction. The maximum investment limitation decreases the maximum expense deduction dollar for dollar if total investment in eligible property is over the current investment dollar limit. For example: if a farm purchases \$2,500,000 worth of eligible property when the current investment limit is \$2,000,000, their Section 179 deduction is reduced to zero: \$2,500,000 of purchases - \$2,000,000 maximum investment limit = \$500,000 of dollar for dollar reduction in Section 179 deduction. \$500,000 maximum Section 179 expense - \$500,000 dollar for dollar reduction in deduction = \$0 eligible for Section 179 deduction.

In addition to the Section 179 expensing allowance, taxpayers have the option of claiming an additional first-year, or Bonus, depreciation allowance as stated in section 168(k) of the IRS tax code (Congressional Research Service, 2015). *“The Job Creation and Worker Assistance Act of 2002 (P.L. 107-147) created the bonus depreciation allowance. It was equal to 30% of the adjusted basis of new qualified property acquired after September 11, 2001”* (Congressional Research Service, 2015). The “Bonus” is the ability to deduct immediately a percentage of the cost of the qualifying asset purchased. Bonus depreciation applies only to new MACRS GDS property with a recovery period of 20 years or less that is placed into service for business use in the current year. It may not be taken on used property, assets that require an ADS recovery period, or assets that have a recovery period longer than 20 years. Bonus depreciation may be claimed overall qualifying assets in an asset class after deductions that reduce the depreciable basis have been taken. Bonus depreciation may be taken over multiple asset classes in the current year. The remaining depreciable basis of the asset after Bonus depreciation is taken is placed on a regular MACRS depreciation deduction in the following years. The Bonus depreciation deduction is only limited by the total amount invested in an asset

class. *“Bonus depreciation is useful to very large businesses spending more than the Section 179 spending cap (\$2,000,000 in 2015) on new capital equipment. Also, businesses with a net loss are still qualified to deduct some of the cost of new equipment and carry-forward the loss”* (IRS, 2015). Bonus depreciation may be taken on carryover basis from trade-ins. Carryover basis is the amount of undepreciated basis. Carryover basis plus the basis of the newly acquired property is the amount eligible to be depreciated in the year a newly purchased asset is placed in service. Carryover basis is not eligible for Section 179 depreciation (IRS, 2015). If a business trades in an asset that was purchased new for a new asset, the remaining undepreciated basis from the old asset is included in the amount eligible for Bonus depreciation of the newly purchased asset. For example, if the asset traded in was purchased new and has a depreciable basis of \$100,000 left and the new asset replacing it has a depreciable basis of \$300,000 the basis amount eligible for Bonus depreciation will be \$400,000.

Section 179 does not allow filers to create a net farm loss. As with any deduction, the greatest benefit of the deduction is derived by allocating the deduction to the longest recovery period (IRS, 2015). This added allowance accelerated the depreciation of qualified property, lowering the cost of capital for investment in those assets and increasing the cash flow of companies making such investments (Congressional Research Service, 2015).

When utilizing Bonus depreciation, the recovery rate percent (or percent of depreciable basis deducted each period) in the first year will naturally increase. Table 2.5 displays Section 179 maximum investment limitations and the maximum expense deductions for tax years 2004 through 2014.

Table 2.5 Section 179 Investment and Expense Deduction Limitations and Bonus Deduction, 2004-2014

Tax Year	Maximum Sec 179 Expense Deduction	Maximum Sec 179 Investment Limitation	Bonus Deduction (% of Total Expense)
	\$		%
2004	102,000	410,000	50
2005	105,000	420,000	0
2006	108,000	430,000	0
2007	125,000	500,000	0
2008	250,000	800,000	50
2009	250,000	800,000	50
2010	500,000	2,000,000	50
2011	500,000	2,000,000	100
2012	500,000	2,000,000	50
2013	500,000	2,000,000	50
2014	500,000	2,000,000	50

When electing deductions to reduce the depreciable basis of property farmers have the option of electing two Accelerated depreciation deductions, any additional investment credits, and a regular yearly MACRS GDS 150% DB depreciation. Section 179 and Bonus depreciation are the available Accelerated depreciation options farmers may elect either or both of these deductions on investments placed in service for the current year. If a farmer elects only one of the Accelerated deductions, that amount is subtracted from the asset's current depreciable basis, and MACRS depreciation deductions are calculated from the new adjusted basis. If the taxpayer elects both forms of Accelerated depreciation in the current year, Section 179 must be deducted first followed by Bonus depreciation. The remaining book value after this deduction is then again depreciated via MACRS over the appropriate recovery periods.

In Table 2.6 there is an example of Section 179 use, Bonus depreciation use, and joint use of Section 179 and Bonus use. In each example, the remaining depreciable basis is assigned to MACRS depreciation over the remaining recovery periods. For each example, the purchase

price is \$650,000 with a salvage value of \$0 and the asset has a 10-year recovery period with a half-year convention. We also assume the maximum investment limitation is not exceeded, and 2014 Accelerated depreciation regulations apply. Recovery period 0 represents adjustments to the depreciable basis before the first year MACRS depreciation is taken on the remaining adjusted depreciable basis. The MACRS GDS recovery rate is 150% DB.

Table 2.6 Example of Section 179, Bonus and Joint Use of Accelerated Depreciation Deduction

Recovery Period (Years)	MACRS Recovery Rate (%)	Section 179 and MACRS Depreciation Deductions					Bonus and MACRS Depreciation Deductions					Section 179, Bonus and MACRS Depreciation Deductions				
		Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Section 179	Accumulated MACRS Depreciation	Net Book Value	Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Bonus	Accumulated MACRS Depreciation	Net Book Value	Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Bonus and Section 179	Accumulated MACRS Depreciation	Net Book Value
		\$					\$					\$				
0	-	650,000	0	500,000	0	150,000	650,000	0	325,000	0	325,000	650,000	0	575,000	0	75,000
1	7.5	150,000	11,250	511,250	11,250	138,750	325,000	24,375	349,375	24,375	300,625	75,000	5,625	580,625	5,625	69,375
2	13.88	150,000	20,820	532,070	32,070	117,930	325,000	45,110	394,485	69,485	255,515	75,000	10,410	591,035	16,035	58,965
3	11.79	150,000	17,685	549,755	49,755	100,245	325,000	38,318	432,803	107,803	217,198	75,000	8,843	599,878	24,878	50,123
4	10.02	150,000	15,030	564,785	64,785	85,215	325,000	32,565	465,368	140,368	184,633	75,000	7,515	607,393	32,393	42,608
5	8.74	150,000	13,110	577,895	77,895	72,105	325,000	28,405	493,773	168,773	156,228	75,000	6,555	613,948	38,948	36,053
6	8.74	150,000	13,110	591,005	91,005	58,995	325,000	28,405	522,178	197,178	127,823	75,000	6,555	620,503	45,503	29,498
7	8.74	150,000	13,110	604,115	104,115	45,885	325,000	28,405	550,583	225,583	99,418	75,000	6,555	627,058	52,058	22,943
8	8.74	150,000	13,110	617,225	117,225	32,775	325,000	28,405	578,988	253,988	71,013	75,000	6,555	633,613	58,613	16,388
9	8.74	150,000	13,110	630,335	130,335	19,665	325,000	28,405	607,393	282,393	42,608	75,000	6,555	640,168	65,168	9,833
10	8.74	150,000	13,110	643,445	143,445	6,555	325,000	28,405	635,798	310,798	14,203	75,000	6,555	646,723	71,723	3,278
11	4.37	150,000	6,555	650,000	150,000	0	325,000	14,203	650,000	325,000	0	75,000	3,278	650,000	75,000	0

The first example in Table 2.6 demonstrates the use of Section 179 depreciation with the remaining depreciable basis being depreciated via MACRS. Farmers have the option of selecting any Section 179 dollar amount equal to or lower than their allowable limit. In this exercise, we utilized the maximum allowable Section 179 expense of \$500,000. The investment of \$650,000 less the Section 179 deduction provides the net book value in period 0, which is used as the depreciable basis for the period 1 MACRS depreciation expense calculation. Use of Section 179 in period 0 plus the MACRS deduction in period 1 is the total first-year depreciation deduction, \$511,250. In this example, the first year deduction is approximately 79% of the initial investment. The MACRS depreciation expense is the rate recovery rate times the appropriate adjusted depreciable basis. The MACRS depreciation expense from periods 2 through 11 decreased, thus allowing the farmer to capture more of the non-cash depreciation expense early in the assets life. The accumulated depreciation with Section 179 is the cumulative amount of depreciation taken in that period consisting of Section 179 deduction plus all previous MACRS deductions. Accumulated depreciation with Section 179 will sum to the initial basis at the end of the depreciation period. Similarly, accumulated MACRS depreciation is the cumulative amount of MACRS deduction and will sum to the adjusted depreciable basis initially used in calculated period 1 MACRS deduction in the final depreciation period. The net book value is the depreciable basis less the accumulated MACRS depreciation and will be \$0 at the end of the final depreciation period.

The third example includes the use of both forms of Accelerated depreciation. When electing both deductions Section 179 must be used first followed by Bonus and then the remaining (if any) adjusted depreciable basis is applied to MACRS. The total first-year

deduction in the last section was \$580,625, or approximately 89% of the initial investment. To calculate the first year deduction Section 179 is subtracted from the initial basis first ($650,000 - 500,000 = 150,000$). This is done for two reasons. First, Section 179 (\$500,000 in this example) must be taken before Bonus depreciation. Second, by subtracting the Section 179 deduction, a new adjusted depreciable basis is created that will be used for calculating the Bonus deduction. This newly adjusted basis is then used to calculate the Bonus depreciation deduction. Bonus depreciation in this example is 50% of the depreciable basis ($150,000 * .50 = 75,000$). These two deductions are then added to create the total first year Accelerated depreciation deduction ($500,000 + 75,000 = 575,000$). After these deductions are taken the adjusted depreciable basis used for MACRS is \$75,000. The addition of the first year MACRS deduction (5,625) with Accelerated depreciation deductions (575,000) equals the total first year depreciation deduction of \$580,625.

As the examples above show, utilizing both forms of Accelerated depreciation can increase the total first-year deduction. In the Section 179 example, the total first-year depreciation was \$511,250. Total first-year depreciation when utilizing Bonus was \$349,375. When both forms of Accelerated depreciation were employed the total year, one deduction was \$580,625. The IRS dictates the order of election when the producer utilizes both forms of Accelerated depreciation. If Section 179 and Bonus are used, Section 179 must be used first followed by Bonus and then MACRS. The IRS dictates this order to minimize the total amount of depreciation claimed in the first year. To illustrate the reasoning behind the order of election Table, 2.7 provides two scenarios of different order elections.

Table 2.7 Order of Accelerated Depreciation Election

	Purchase price (\$)	First elected deduction	Adjusted depreciable basis (\$)	Second elected deduction	Accelerated first-year deduction(\$)
Scenario 1	650,000	Section 179	--	Bonus	--
	--	500,000	150,000	75,000	575,000
Scenario 2	650,000	Bonus	--	Section 179	--
	--	325,000	325,000	325,000	650,000

In Table 2.7 Scenario 1 demonstrates Section 179 being utilized first followed by Bonus. In this scenario, the total Accelerated first-year deduction is \$575,000. Scenario 2 where Bonus is used first yields a \$650,000 Accelerated first-year deduction. In both scenarios, the Section 179 amount elected is the maximum allowed for that situation. Bonus depreciation was taken at 50% of the depreciable basis.

This chapter provided a brief history of US tax depreciation, description of asset classes and the mechanics used to calculate depreciation deductions. Multiple examples of MACRS and Accelerated depreciation deductions were provided and explained. The following chapters examine how agricultural producers have used MACRS and Accelerated depreciation in their farm businesses. Chapter 3 provides summary statistics on the data set by farm size and depreciation use and takes a closer look at the details of Bonus depreciations.

Chapter 3. Data and Summary Statistics

The panel data set used in this research includes 66 farm operations and from 2004 through 2014. Sixty-five of the 66 farms had 11 years of complete tax and financial information. The remaining farm is missing farm income and expense information for 2014. Of the 66 farms, 29 are dairy, and 31 are crop farms. The remaining six are categorized as diversified and include beef (1), custom heifer raiser (1), hog (3) and vegetable (1) enterprises. All producers in the data utilized the common MACRS depreciation method as allowed by IRS.

3.1 Farm Size

To examine the size of the farms in the dataset gross farm income (GFI), Schedule F net farm profit or loss, and acres operated were used. Gross farm income is defined as all farm-related income the operation generated in a given year. It includes income from milk and crop sales, rental income, government payments, insurance income, and any other farm income. Schedule F net farm profit or loss is calculated from the farms GFI less tax depreciation and total cash expenses. Tax depreciation includes all forms of depreciation taken on Schedule F, including deductions from Accelerated and MACRS. Acres operated includes all land, rented and owned, that was used in production. GFI is broken down by farm type in table 3.1 and is grouped by size in table 3.2.

Table 3.1 Gross Farm Income by Farm-Type, 2004-2014

Variable	Observations	Mean	Std. Dev.	Min	Max
		\$			
All Farms	653	1,357,355	1,669,207	24,388	15,900,000
Crop Farms	308	776,525	659,729	24,388	3,037,790
Dairy Farms	285	1,894,807	2,234,477	28,338	15,900,000
Diversified Farms	60	1,786,059	1,071,822	463,187	4,571,987

The largest GFI of \$15,900,000 was from a dairy farm, and the smallest GFI of \$24,388 was a crop farm. The number of observations between these two types of farms was similar while the standard deviation and maximum values were not. These large differences make it difficult to compare GFI across farm type. The most common farm size by GFI was one to three million dollars.

Table 3.2 Frequency of Gross Farm Income

Gross Farm Income Range (\$)	Frequency	Percent
0-500,000	184	28.2
500,001-1,000,000	188	28.8
1,000,001-3,000,000	222	34.0
3,000,001-8,000,000	50	7.7
8,000,001+	9	1.4

Table 3.3 Gross Farm Income by Farm-Type and Year

	Crop Farms					Dairy Farms					Diversified Farms				
	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max
		\$					\$					\$			
2004	27	552,476	496,795	24,388	2,145,914	24	1,238,667	1,522,960	193,733	7,243,896	6	1,594,197	1,188,930	463,187	3,506,824
2005	25	611,543	513,393	30,322	2,158,749	23	1,288,743	1,629,060	199,478	7,487,369	5	1,513,307	1,232,277	581,935	3,506,824
2006	25	601,766	521,676	46,724	2,067,119	25	1,247,307	1,396,082	192,967	6,608,370	5	1,417,738	1,136,032	518,153	3,285,926
2007	26	690,819	608,100	47,915	2,751,202	25	1,748,560	1,974,593	219,806	8,367,034	5	1,554,827	1,055,878	573,460	3,249,422
2008	29	771,193	651,470	109,178	2,910,991	27	2,279,050	3,265,460	96,856	15,900,000	6	1,852,748	1,162,531	653,988	3,939,854
2009	30	776,518	654,548	75,520	2,586,944	28	1,421,450	1,526,964	59,236	7,345,444	6	1,752,287	1,263,043	618,655	4,139,534
2010	29	684,482	545,338	51,550	2,167,388	28	1,753,363	1,823,406	54,500	8,112,246	6	1,989,161	1,260,503	688,065	4,167,769
2011	29	933,378	683,336	95,263	2,290,591	27	2,236,931	2,262,030	58,116	9,922,914	6	2,221,066	1,412,599	777,020	4,571,987
2012	29	1,001,146	809,327	93,248	2,983,883	27	2,222,137	2,436,257	28,338	11,000,000	5	1,768,332	809,803	855,809	2,704,246
2013	29	954,687	784,173	129,290	2,924,097	26	2,423,102	2,542,457	77,484	11,000,000	5	1,912,445	922,885	839,996	3,074,479
2014	30	888,718	768,365	129,199	3,037,790	25	2,877,180	2,950,402	102,625	12,500,000	5	1,974,703	882,637	931,026	3,101,936
Total	308					285					60				

Table 3.3 breaks down mean GFI by farm type and year revealing a trend of increasing GFI for all three farm types from 2004 to 2014. The high grain prices in 2011, 2012 and 2013 resulted in higher crop farm GFI compared to early years. Dairy GFI painted a similar picture except in 2009 when there were low milk prices.

The profit a farm report to the IRS is generated from their Form 1040 Schedule F “Profit or Loss from Farming.” The Schedule F net farm profit or loss was calculated as reported farm gross income fewer farm expenses. Table 3.4 summarizes average Schedule F net farm profit or loss by farm type. Dairy farms had a larger average Schedule F Profit and larger standard deviation than the other farm types. Crop farms and diversified farms had similar Schedule F average profits. The bulk of farm Schedule F profits, 40%, fell in the \$100,001 to \$500,000 Schedule F net farm profit range. The range below that, from \$1-\$100,000 had 258 observations, 40% of the total. These two Schedule F ranges hold the majority farms represented in the data, and this is clearly depicted in table 3.5.

Table 3.4 Schedule F, Net Farm Profit or Loss by Farm-Type

Variable	Observations	Mean	Std. Dev.	Min	Max
		\$			
All Farms	652	207,017	669,198	-1,257,156	14,400,000
Crop Farms	307	118,398	182,125	-1,257,156	849,347
Dairy Farms	285	320,188	981,773	-1,180,411	14,400,000
Diversified Farms	60	122,886	140,103	-539,663	454,668

Table 3.5 Frequency of Schedule F, Net Farm Profit or Loss

Net Profit or Loss Range (\$)	Frequency	Percent
0 and Less	83	12.7
1-100,000	258	39.6
100,001-500,000	262	40.2
500,001-1,000,000	25	3.8
1,000,001+	24	3.7

Table 3.6 Schedule F, Net Farm Profit or Loss by Farm-Type and Year

	Crop Farms					Dairy Farms					Diversified Farms				
	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max
		\$					\$					\$			
2004	27	66,580	123,895	-94,260	506,446	24	197,442	334,421	-40,260	1,550,011	6	134,433	73,434	56,258	252,570
2005	25	80,561	119,882	-44,708	453,120	23	236,802	522,003	-60,525	2,254,163	5	154,287	108,722	67,680	335,360
2006	25	37,624	71,494	-136,359	216,134	25	157,799	311,426	-77,862	1,488,660	5	132,295	119,798	21,733	300,853
2007	26	58,247	140,300	-415,658	346,149	25	259,888	356,592	-78,816	1,558,517	5	146,133	108,426	44,971	312,586
2008	29	30,375	271,908	-1,257,156	435,920	27	785,837	2,759,626	-89,655	14,400,000	6	120,980	190,868	-180,455	389,258
2009	30	139,586	126,384	4,886	489,378	28	51,213	239,970	-284,395	1,128,971	6	35,956	298,995	-539,663	268,606
2010	29	118,031	155,890	-185,740	525,677	28	192,168	360,325	-85,418	1,310,030	6	156,204	166,364	-6,041	454,668
2011	29	187,957	144,921	-17,786	621,205	27	336,917	530,073	-130,674	2,406,676	6	155,515	115,870	18,205	357,052
2012	29	235,917	219,502	-136,179	838,705	27	389,596	640,309	-91,779	2,309,050	5	106,369	43,271	62,181	164,482
2013	29	192,107	235,346	-98,291	849,347	26	338,408	756,034	-1,180,411	2,819,933	5	93,185	87,394	10,574	209,952
2014	30	128,968	166,355	-50,796	763,215	25	567,180	741,441	28,155	3,253,441	5	118,659	91,626	-20,855	219,457
Total	307					285					60				

Table 3.6 displays a similar trend for Schedule F net farm profit or loss as table 3.3 does when looking at GFI. Schedule F net farm profit or loss increased over the years with higher profits being realized in high GFI years. The low prices of 2009 in the dairy industry are again depicted with a low Schedule F mean value.

To further investigate the size of farming operations the production resource of land is evaluated. The number of acres operated includes rented and owned land. Table 3.7 shows the average number of acres operated by farm type. The average number of acres was close to 1,000 across all categories. The small minimum farm size of 60 acres shows there may be some crop farmers in that data that did not farm full time. However, it was not the norm in this data. The largest number of farms fall between the range of 501 to 1,000 acres.

Table 3.7 Acres Operated by Farm-Type

Variable	Observations	Mean	Std. Dev.	Min	Max
		Acres			
All Farms	706	1,042	803	60	4,664
Crop Farms	337	1,118	886	60	4,664
Dairy Farms	312	931	761	115	4,337
Diversified Farms	57	1,197	254	388	1,638

Table 3.8 Frequency of Acres Operated

Bin Value (\$)	Frequency	Percent
0-250	50	7
251-500	132	19
501-1,000	263	37
1,001-1,500	128	18
1,501+	133	19

Table 3.9 Acres Operated by Farm-Type and Year

	Crop Farms					Dairy Farms					Diversified Farms				
	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max	Obs	Mean	Std.	Min	Max
		Acres					Acres					Acres			
2004	30	1,069	843	102	3,497	28	877	773	179	3,960	5	1,074	223	726	1,263
2005	30	1,112	990	96	4,664	28	884	762	179	3,831	5	1,153	237	773	1,396
2006	30	1,142	958	95	3,943	28	897	762	256	3,831	5	1,179	299	704	1,441
2007	30	1,123	934	156	3,625	28	888	750	214	3,831	5	1,182	246	823	1,505
2008	31	1,113	913	156	3,596	28	924	820	293	4,275	5	1,249	243	853	1,460
2009	31	1,095	878	156	3,473	29	961	812	215	4,337	5	1,165	181	854	1,302
2010	31	1,091	879	60	3,410	29	874	661	140	3,573	5	1,227	199	904	1,379
2011	31	1,115	861	151	3,410	29	941	732	199	3,573	5	1,317	133	1,193	1,513
2012	31	1,123	822	151	3,246	29	983	761	200	3,858	5	1,229	225	1,004	1,541
2013	31	1,184	947	151	3,606	29	1,007	791	125	3,998	6	1,162	444	388	1,638
2014	31	1,133	855	151	3,246	27	1,004	853	115	4,304	6	1,226	348	773	1,638
Total	337					312					57				

Table 3.9 shows crop farms were on average, 193 acres larger than dairy farms and all types of operations grew over the years. On average crop farms and diversified farms operated a similar amount of acres.

Pairwise correlation coefficients of GFI, acres operated and Schedule F net farm profit or loss is examined in Table 3.10. GFI had the strongest correlation to acres operated and Schedule F net farm profit or loss.

Table 3.10 Pairwise Correlation of Size Variables

	GFI	Acres operated
GFI	1.00	--
Acres operated	0.59	1.00
Schedule F Net Farm Profit or Loss	0.71	0.27

3.2 Income Tax Depreciation

Table 3.11 shows the summary stats for Section 179 expense taken, Bonus depreciation deduction and first year MACRS depreciation taken. The maximum expense possible to elect over the 11-year period for Section 179 was \$500,000. This amount was eligible as the maximum deduction in the later years of the data. It is important to note the large value of maximum Bonus depreciation taken. Bonus depreciation can be used on the carryover basis of like-kind exchanges. The remaining carryover basis for the year of replacement and the remaining excess basis, if any, for the year of a replacement for the acquired MACRS property are eligible for the additional first-year depreciation deduction. The applicable percentage of additional first-year depreciation deduction applies to the remaining carryover basis and remaining the excess basis of the acquired MACRS property (IRS, 2014).

Table 3.11 Depreciation Summary Statistics Not Conditional on Accelerated Depreciation Use

Variable	Observations	Mean	Std. Dev.	Min	Max
		\$			
Section 179 Expense	726	21,951	54,180	0	500,000
Bonus	726	4,970	41,270	0	688,892
First Year MACRS	726	5,838	10,357	0	85,402

Table 3.12 Summary Statistics of Section 179 Use Conditional on Election of Section 179 Depreciation Deduction

Variable	Observations	Mean	Std. Dev.	Min	Max
		\$			
All Farms	305	52,250	73,570	101	500,000
Crop Farms	175	50,968	79,182	101	500,000
Dairy Farms	92	45,142	47,654	765	212,010
Diversified Farms	38	75,360	93,372	236	361,847

Table 3.12 shows that when Section 179 depreciation deduction is used the average deduction is close to \$50,000 for crop and dairy farms. Diversified farms had the highest average Section 179 depreciation deduction with \$75,360. As expected, these conditional mean values are larger than the unconditional mean for Section 179 depreciation as shown in table 3.11. The maximum Section 179 expense over the available years varied by year but was as high as \$500,000.

Table 3.13 Frequency and Average Amount of Section 179 Depreciation Deduction Taken by Year and Farm-Type, Conditional on Section 179 Use

Year	Max Expense (\$)	All Farms		Crop Farms		Dairy Farms		Diversified	
		Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)
2004	102,000	26	22,670	12	16,492	10	25,213	4	34,843
2005	105,000	30	29,766	12	23,738	13	31,677	5	39,263
2006	108,000	21	20,702	12	15,837	6	18,453	3	44,662
2007	125,000	29	29,479	13	22,216	13	28,056	3	67,125
2008	250,000	28	46,612	16	33,368	9	58,104	3	82,772
2009	250,000	17	47,360	13	42,797	2	54,079	2	70,303
2010	500,000	26	39,274	17	41,191	6	33,320	3	40,320
2011	500,000	32	73,486	21	73,252	8	61,811	3	106,256
2012	500,000	34	58,117	21	65,241	8	51,794	5	38,314
2013	500,000	32	92,354	20	90,268	8	62,575	4	162,341
2014	500,000	30	91,665	18	80,757	9	85,918	3	174,352
Total/Average		305	52,250	175	50,968	92	45,142	38	75,360

Table 3.13 provides a breakdown of the deduction by farm type and year. It is important to note the maximum allowable Section 179 expense per year. When looking across all farms, the frequency of deductions taken was fairly consistent with the exception of 2009. In 2009, the total deductions were lower because of decreased frequency of Section 179 use by dairy farms. From 2008 to 2009 dairy farms had an average decrease in GFI of 62%. With a decrease in taxable income, the need for tax deductions decreased. Over the 11-year period, the total average deduction increased with average GFI. Crop farms use of Section 179 increased 2011 to 2013 because of increase in income over the same period. During the same three-year period, the average deduction is taken also increased.

Table 3.14 Section 179 Use by Asset Class

	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total
All	23	135	267	53	75	0	553
Crops	16	70	155	9	55	0	305
Dairy	4	40	80	30	9	0	163
Diversified	3	25	32	14	11	0	85

Table 3.15 Section 179 Use by Asset Class, Farm-Type and Year

	Crop Farms							Dairy Farms							Diversified Farms							
	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Grand Total
	Farm																					
2004	1	3	10	1	2	0	17	0	4	8	3	0	0	15	0	1	4	1	0	0	6	38
2005	1	6	10	1	4	0	22	0	7	13	4	2	0	26	0	2	2	3	1	0	8	56
2006	3	3	12	1	4	0	23	0	3	4	2	0	0	9	1	2	2	0	1	0	6	38
2007	2	5	11	0	4	0	22	0	5	13	2	1	0	21	0	1	3	1	0	0	5	48
2008	0	4	14	0	4	0	22	2	5	8	2	2	0	19	1	3	3	2	1	0	10	51
2009	0	11	6	0	4	0	21	0	0	1	2	0	0	3	0	1	1	0	1	0	3	27
2010	1	5	16	0	6	0	28	0	2	5	2	1	0	10	0	3	3	1	0	0	7	45
2011	3	9	19	2	5	0	38	0	4	6	5	0	0	15	0	1	3	2	2	0	8	61
2012	2	6	21	1	11	0	41	0	1	7	1	1	0	10	0	4	5	2	3	0	14	65
2013	2	11	19	1	5	0	38	1	4	7	3	1	0	16	1	4	3	1	1	0	10	64
2014	1	7	17	2	6	0	33	1	5	8	4	1	0	19	0	3	3	1	1	0	8	60
Total	16	70	155	9	55	0	305	4	40	80	30	9	0	163	3	25	32	14	11	0	85	553

Table 3.15 provides the frequency of deductions by asset class and farm type. Crop farms had the highest number of deductions and asset class 7, which includes machinery and equipment, was the most frequently used class. No deductions were taken for class 20 property as there were no assets purchased that had a 20-year depreciation schedule and were eligible for direct expensing. Table 3.15 shows a distinct increase in the frequency of Section 179 depreciation deduction taken by crop farms across all classes and specifically in class 7 in years 2011-2013. Asset class 15 also saw an increase in elections in 2012 by crop farmers. The most notable point of interest for dairy farm elections is the frequency in 2009 of 3, again linked to a decrease in GFI that year. Class 7 holds the highest number of elections across all farm types. Tables 3.16 and 3.17 breakdown investment frequency and dollar amounts by class across all farms. These tables provide the backdrop to the decisions influencing elections made in table 3.15.

Table 3.16 Frequency of Farm Investment, Eligibility for Section 179 Direct Expensing and Section 179 Depreciation Deduction Taken by Asset Class.

Asset Class	Investment per asset class		Amount eligible for Section 179 direct expensing		Section 179 depreciation deduction taken		
	Frequency	Percent	Frequency	Percent ^a of Eligible	Frequency	Percent ^b of Eligible	Percent ^c Taken
3	87	5	87	100	23	26	26
5	461	26	460	100	135	29	29
7	632	35	631	100	267	42	42
10	191	11	190	99	53	28	28
15	205	12	180	88	75	42	37
20	43	2	0	0	0	0	0
27.5	25	1	0	0	0	0	0
Non-Dep Property	137	8	0	0	0	0	0
Total	1,781		1,556		553		

Percent^a=Frequency of eligible Section 179 depreciation deductions/frequency of investment in that class

Percent^b=Frequency of Section 179 depreciation deductions taken/frequency of investments eligible for Section 179 depreciation

Percent^c=Frequency of deductions taken/frequency of investment

The last two columns in Table 3.16 show the percent of deductions that were taken when the investment was eligible for the deduction and the percent of deductions that were taken from all investments in that asset class. These two metrics are the same with the exception of class 15 property. 42% of the time a deduction was taken when it was eligible and 37% of the time a deduction was taken when investment in that asset class was made. These two columns show the consistency with which Section 179 was utilized when available. With the majority of investment in asset classes 3 through 15 being eligible for Section 179 direct expensing, the percent of deductions taken on eligible property and percent of the deduction taken on invested property were similar. When an investment was made in class 3 property, 26% of the time producers elected to direct expense all or part of it. For class 5 assets, 29% of the time farmers took a Section 179 direct expense. Class 7 had the highest percent frequency of Section 179 depreciation deduction with 42% of farmers taking at least some direct expensing. This particularly noteworthy when looking at how relatively large the total percent of investment was in class 7 property with 35% of all investment.

Table 3.17 Average of Investment, Amount Eligible for Section 179 Direct Expensing and Section 179 Depreciation Deduction Taken by Asset Class

Asset Class	Average farm investment	Average Amount eligible for Section 179 direct expensing	Average Section 179 depreciation deduction taken
	(\$/Year)		
3	24,413	24,738	28,351
5	47,388	45,404	28,351
7	121,225	119,831	73,970
10	114,431	112,657	55,476
15	30,400	28,663	21,747
20	50,742	0	0
27.5	81,102	0	0
Non-Depreciable Property	234,569	0	0

Table 3.17 provides average values to the frequencies used in table 3.16. The last column of average Section 179 depreciation deductions taken provides insight into how much farmers were deducting on average from the purchase price of their assets placed in service. The largest average value of depreciation deduction was for class 7 property at \$73,970. As expected the average deduction were larger in longer-lived asset classes. Asset classes 7 and 10 had the highest average depreciation deduction taken. These classes had the highest average total farm investment made in them, so a corresponding Section 179 depreciation deduction was expected.

Bonus depreciation is the second type of Accelerated depreciation available to farmers. It can be claimed on only new property placed into service, and the depreciation deduction is set at a percent of total depreciable basis, usually equal to the purchase price. Unlike Section 179 depreciation deductions, when claiming a Bonus depreciation deduction, the farmer must claim the entire value of the deduction, and it must be taken over all eligible property that shares the same asset class. In this dataset, there was a total of 47 Bonus depreciation deduction taken across all operations for the 111 year period. Table 3.18 shows the summary stats of Bonus depreciation deductions conditional on Bonus depreciation use. Dairy farms had the largest average Bonus depreciation deduction at \$179,748. The number of observations for Bonus depreciation deductions was fewer than that of Section 179. The average value of Bonus depreciation deductions is higher across all farm types (\$100,886 versus \$52,250) than Section 179 depreciation deductions. This higher average Bonus deduction was driven by the high deductions taken by dairy farmers (\$179,748 average Bonus versus \$45,142 average Section 179 depreciation deduction).

Table 3.18 Summary Statistics of Bonus Depreciation Conditional on Elected Bonus Depreciation Deduction

Variable	Observations	Mean	Std. Dev.	Min	Max
		\$			
Bonus Expense Taken	70	100,886	203,402	476	1,377,784
Crop	33	41,279	64,002	476	345,318
Dairy	29	179,748	292,504	2,470	1,377,784
Diversified	8	60,894	50,102	2,715	144,273

To better understand Bonus depreciation use across farm types per year, table 3.19 displays frequency of deductions and average amounts.

Table 3.19 Frequency and Average Amount of Bonus Depreciation Deduction by Year and Farm-Type

Year	Bonus(%)	All Farms		Crop Farms		Dairy Farms		Diversified	
		Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)	Frequency	Ave Deduction (\$)
2004	50	17	95,861	5	30,465	9	144,701	3	58,331
2005	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0
2008	50	4	222,067	2	8,865	2	869	0	0
2009	50	1	10,086	1	10,086	0	0	0	0
2010	50	8	34,451	3	6,823	4	43,975	1	79,238
2011	100	13	196,216	10	67,045	3	626,786	0	0
2012	50	12	70,052	8	47,108	3	153,683	1	2,715
2013	50	7	56,870	2	25,552	2	58,390	3	76,735
2014	50	8	58,618	2	31,592	6	67,626	0	0
Total/Average		70	100,886	33	41,279	29	179,748	8	60,894

The Bonus depreciation percent each year is the percent of depreciable basis that can be claimed as a deduction. In 2005-2007, there was no Bonus depreciation available. Across all farms, the frequency of Bonus deduction uses increased with the percent of Bonus depreciation. Additionally, the average deduction amount increased in those years. Average dairy farm Bonus depreciation was the highest in six of the eight years Bonus depreciation was available. This is not surprising given their higher gross farm income as well. In 2009 there were no Bonus depreciation deductions claimed for dairy farms in the data. A reflection of their decreased GFI. The average Bonus depreciation deduction for dairy farms over this period was \$179,748 with diversified farm Bonus depreciation deductions coming in a distant second with an average value of \$60,894. Tables 3.20 and 3.21 breakdown investment frequency and by class across all farm types and years. These tables provide context to the decisions influencing the elections made in table 3.19.

Table 3.20 Frequency of Bonus Use by Asset Class, 2004-2014

	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total
	Observations						
All Farms	2	12	23	7	6	20	70
Crop Farms	0	4	10	2	4	13	33
Dairy Farms	1	7	11	5	1	4	29
Diversified Farms	1	1	2	0	1	3	8

Table 3.21 Bonus Use by Asset Class by Farm-Type and Year

	Crop Farms							Dairy Farms							Diversified Farms							
	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20	Total	Cum Total
	Observations																					
2004	0	1	1	1	0	2	5	0	3	3	1	0	2	9	0	1	1	0	0	1	3	17
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	1	0	0	0	1	2	0	1	1	0	0	0	2	0	0	0	0	0	0	0	4
2009	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2010	0	0	1	0	0	2	3	0	0	2	1	0	1	4	0	0	0	0	0	1	1	8
2011	0	2	2	0	3	3	10	0	0	1	2	0	0	3	0	0	0	0	0	0	0	13
2012	0	0	4	1	1	2	8	0	1	1	0	0	1	3	1	0	0	0	0	0	1	12
2013	0	0	1	0	0	1	2	0	1	1	0	0	0	2	0	0	1	0	1	1	3	7
2014	0	0	1	0	0	1	2	1	1	2	1	1	0	6	0	0	0	0	0	0	0	8
Total	0	4	10	2	4	13	33	1	7	11	5	1	4	29	1	1	2	0	1	3	8	70

Table 3.21 shows the most frequently selected asset class for Bonus Depreciation is class 7 property. The frequency of Bonus depreciation deductions trends with the frequency of investment by class except 20-year property. As previously discussed, class 20 investments were not eligible for direct expensing under the Section 179 IRS tax rules. This asset class is eligible for expensing only via Bonus depreciation. Producers taking advantage of this policy distinction were frequently electing Bonus depreciation on 20-year property. This is especially true for crop farms. It is possible to crop farms have a greater demand for non-single use agricultural structures that would qualify for Bonus depreciation where animal agriculture has a greater demand for single-use agricultural structures that qualify for Section 179 depreciation deductions. Table 3.21 shows a distinct increase in Bonus depreciation deductions being made by crop farmers in the correspondingly high GFI years of 2011 and 2012. Most crop farmers elected to use their Bonus deductions on class twenty and seven-year property in those years. Dairy farmers utilized Bonus depreciation most often on seven year property.

Table 3.22 Frequency of Bonus Depreciation Taken as a Percent of Investment

Asset Class	Investment per asset class		Bonus depreciation deduction frequency	
	Frequency	Percent	Frequency	Percent ^a
3	87	5	2	2
5	461	26	12	3
7	632	35	23	4
10	191	11	7	4
15	205	12	6	3
20	43	2	20	47
27.5	25	1	--	--
Non-Depreciable Property	137	8	--	--
Total	1,781		70	4%

Percent^a=Frequency of Bonus depreciation deduction taken/frequency of investment

Table 3.22 breaks down how frequently Bonus depreciation deductions were used in each asset class. Class 7 was the most frequent class used to take a Bonus depreciation deduction, as

it is the most invested in class. The number that stands out the most is the 20 occurrences of Bonus depreciation taken on the 20-year property (farm buildings, non-single use). When looking at the percent of Bonus depreciation deductions taken given investment, 47% of the time a deduction as taken on class 20 assets when an investment was made. On average, Bonus depreciation deductions were taken on 4% of eligible investment decisions.

Table 3.23 Average Investment and Bonus Depreciation Deduction Taken by Class

Asset Class	Average farm investment	Bonus depreciation deduction
		\$
3	24,413	38,775
5	47,388	86,189
7	121,225	186,833
10	114,431	93,659
15	30,400	14,830
20	50,742	45,424
27.5	81,102	--
Non-Depreciable Property	234,569	--

Table 3.23 provides the average Bonus depreciation deduction taken with class seven property having the highest average deduction taken at \$186,833. These Bonus depreciation deductions were conditional on use of the deduction. The mean depreciation values show that because of the mandatory percentage requirement of Bonus depreciation deductions when an election was made, the average amount of depreciation is relatively high.

3.3 Bonus Depreciation Carryover Basis

As previously mentioned, Bonus depreciation allows the farmer to utilize carryover basis. To examine this scenario further, the following example and definitions are taken from the IRS from section 1.168(k)(f)(5)(ii)(B)(G)(H)(I):

- *“Exchanged or involuntarily converted MACRS property*

- *Exchanged property* - MACRS property that is transferred by the taxpayer (i.e.: sold)
- *Involuntarily Converted* – MACRS property that is acquired in connection with an involuntary conversion of other MACRS property (i.e.: a replacement is purchased after the original is destroyed in a fire)
- *Time of disposition*
 - *When the disposition of the exchanged or involuntarily converted MACRS, property takes place.*
- *Carryover basis, is the lesser of:*
 - *The basis of the exchanged or involuntarily converted MACRS property; or*
 - *The adjusted depreciable basis of the exchanged or involuntarily converted MACRS property.*
- *Adjusted depreciable basis*
 - *The basis of the exchanged or involuntarily converted MACRS property after adjustments to basis (i.e.: depreciation deductions)*
- *Excess basis*
 - *Any excess of the basis in the acquired MACRS property over the carryover basis*
- *Remaining carryover basis*
 - *The carryover basis reduced by:*
 - *The percentage of the property that is not involved in business use*
 - *Any adjustment to basis*
- *Remaining excess basis*
 - *The excess basis reduced by:*
 - *The percent of the property that is not involved in business use*

- *Any Section 179 expense*
- *Any adjustments to basis provided by other provisions “*

The following example illustrates the procedure of utilizing Bonus depreciation on carryover basis:

(i) In 2012, a farmer acquired for \$20,000 and placed in service a new tractor. The tractor qualified property under section 168(k)(1), meaning eligible for Bonus Depreciation, and is 7-year property under section 168(e). The farmer depreciated the tractor under the general depreciation system of section 168(a) by using the 150-percent declining balance method of depreciation, a 7-year recovery period, and the half-year convention. The farmer elected to use the optional depreciation tables to compute the depreciation allowance for the purple tractor, meaning he used Bonus depreciation. In 2013, the farmer acquired a new tractor by exchanging the purple tractor and \$5,000 cash in a like-kind exchange. The tractor is qualified property under section 168(k)(1) and is 7-year property under section 168(e). Under Bonus depreciation rules, the farmer decided to apply Bonus depreciation to the exchange of the old tractor for the new tractor. Because the trade between the old and new tractors was made in separate years, additional first-year depreciation deduction (Bonus and Section 179) is allowable for the acquired MACRS property (the new tractor) in the year of replacement.

(ii) For 2012, the farmer is allowed a 50-percent additional first year depreciation deduction of \$10,000 for the old tractor (unadjusted basis of \$20,000 multiplied by .50), and a regular MACRS depreciation deduction of \$1,071 for the old tractor (the remaining adjusted depreciable basis of \$10,000 multiplied by the annual depreciation rate of 0.1071 for recovery period 1).

(iii) For 2013, the farmer is allowed a regular MACRS depreciation deduction of

\$956.50 for the old tractor (the remaining adjusted depreciable basis of \$10,000 multiplied by the annual depreciation rate of 0.1913 for recovery period two times a half year, due to half-year convention).

(iv) 50-percent additional first year depreciation deduction for the new tractor is allowable for the remaining carryover basis at the time of replacement of \$7,972.50 (the old tractor's unadjusted depreciable basis of \$20,000 minus additional first year depreciation deduction allowable of \$10,000 minus 2012 regular MACRS depreciation deduction of \$1,071 minus 2013 regular MACRS depreciation deduction of \$956.50) and for the remaining excess basis at the time of replacement of \$5,000 (cash paid for the blue tractor). Thus, the 50-percent additional first-year depreciation deduction for the remaining carryover basis at the time of replacement equals \$3,986.25 (\$7972.50 multiplied by 0.50) and for the remaining excess basis at the time of replacement equals \$2,500 (\$5,000 multiplied by 0.50), which totals \$6,486.25.

Table 3.24 Bonus Depreciation on Carryover Basis Example

Year 2012, Old Tractor		Year 2013, Old Tractor		Year 2013, New Tractor	
Unadjusted Basis(\$)	20,000	MACRS 150% DB, Period 2(\$)	956.5	Excess Basis(\$)	5,000
Bonus Depreciation Deduction (50%)(\$)	10,000	Carryover Basis(\$)	7,972.5	Carryover Basis Bonus Depreciation Deduction(\$)	3,986.25
MACRS 150% DB, Period 1(\$)	1,071	Excess Basis(\$)	5,000	Excess Basis Bonus Depreciation Deduction (50%) (\$)	2,500
Adjusted Depreciable Basis(\$)	8,929			Total Blue Tractor Bonus Depreciation Deduction(\$)	6,486.25
Total Period 1 Depreciation(\$)	11,071				

As shown in the example, with the addition of carryover basis, it is possible for a farm to have a total depreciation deduction greater than the total amount invested in that year (\$6,486.25

in 2013 depreciation deduction and \$5,000 of investment made). The use of carryover basis accounts for the previously reported high maximum total first-year depreciation deduction.

Chapter 4. Analyzing the Farm Effects of Accelerated Depreciation

This chapter analyzes the effects of Accelerated depreciation use by Michigan farms. To accomplish this, the present value of the Accelerated tax depreciation as it was used by the farms is calculated in the next section. Following that, the cost of capital is calculated for both MACRS and Accelerated depreciation methods as utilized. The results indicate the value of Accelerated depreciation both in absolute dollar terms and its effect on the cost of capital.

4.1 Value of Depreciation Allowances

Present value (PV) is the current value of a future sum of money discounted to the current period (Hanson, Robison, and Black, 2016). A single year PV is calculated by:

$$PV = \frac{Value}{(1 + r)^n}$$

Where *Value* is the future amount of money to be discounted, represented by the current year total depreciation deduction. The discount rate is *r* and *n* is the number of time periods.

The total PV for each decision is the sum PV of each period.

$$PV = \sum_{i=1}^n \frac{Value_n}{(1 + rate)^n}$$

Table 4.1 Example of Section 179, Bonus and Joint Use of Accelerated Depreciation Deduction

Recovery Period (Years)	MACRS GDS Recovery Rate (%)	Section 179 and MACRS Depreciation Deductions					Bonus and MACRS Depreciation Deductions					Section 179, Bonus and MACRS Depreciation Deductions				
		Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Section 179	Accumulated MACRS Depreciation	Net Book Value	Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Bonus	Accumulated MACRS Depreciation	Net Book Value	Depreciable Basis	MACRS Depreciation Expense	Accumulated Depreciation with Bonus and Section 179	Accumulated MACRS Depreciation	Net Book Value
		\$					\$					\$				
0	-	650,000	0	500,000	0	150,000	650,000	0	325,000	0	325,000	650,000	0	575,000	0	75,000
1	7.5	150,000	11,250	511,250	11,250	138,750	325,000	24,375	349,375	24,375	300,625	75,000	5,625	580,625	5,625	69,375
2	13.88	150,000	20,820	532,070	32,070	117,930	325,000	45,110	394,485	69,485	255,515	75,000	10,410	591,035	16,035	58,965
3	11.79	150,000	17,685	549,755	49,755	100,245	325,000	38,318	432,803	107,803	217,198	75,000	8,843	599,878	24,878	50,123
4	10.02	150,000	15,030	564,785	64,785	85,215	325,000	32,565	465,368	140,368	184,633	75,000	7,515	607,393	32,393	42,608
5	8.74	150,000	13,110	577,895	77,895	72,105	325,000	28,405	493,773	168,773	156,228	75,000	6,555	613,948	38,948	36,053
6	8.74	150,000	13,110	591,005	91,005	58,995	325,000	28,405	522,178	197,178	127,823	75,000	6,555	620,503	45,503	29,498
7	8.74	150,000	13,110	604,115	104,115	45,885	325,000	28,405	550,583	225,583	99,418	75,000	6,555	627,058	52,058	22,943
8	8.74	150,000	13,110	617,225	117,225	32,775	325,000	28,405	578,988	253,988	71,013	75,000	6,555	633,613	58,613	16,388
9	8.74	150,000	13,110	630,335	130,335	19,665	325,000	28,405	607,393	282,393	42,608	75,000	6,555	640,168	65,168	9,833
10	8.74	150,000	13,110	643,445	143,445	6,555	325,000	28,405	635,798	310,798	14,203	75,000	6,555	646,723	71,723	3,278
11	4.37	150,000	6,555	650,000	150,000	0	325,000	14,203	650,000	325,000	0	75,000	3,278	650,000	75,000	0
Total PV(\$)		608,768					560,665					629,384				

The example above in Table 4.1 shows three examples of Accelerated depreciation use. At the bottom of Table 4.1, the PV amount of the entire depreciation deduction, including MACRS, is calculated. The first example had a total depreciation deduction PV of \$608,768. The PV of MACRS depreciation deductions over the same period with no Accelerated depreciation is \$471,329. The use of Section 179 deduction in the first year generated a PV increase of \$137,439 for the producer. The actual tax savings for the producer would be this value multiplied by the tax rate.

In the second example of Table 4.1, Bonus depreciation was used as the method of Accelerated depreciation with the adjusted depreciable basis being applied to an MACRS depreciation schedule. When utilizing Bonus depreciation, the farmer must elect the full amount of the Bonus deduction across all qualifying assets in that asset class. Farmers are not allowed to elect Bonus depreciation on individual items if other qualifying assets share the same asset class. The Bonus depreciation deduction was assumed to be 50% of the investment ($\$650,000 \times 0.50 = \$325,000$). The depreciable basis is then \$325,000. The total first-year depreciation deduction was \$349,375, approximately 54% of the initial investment. By incorporating all periods' depreciation expenses, a PV of \$560,665 was calculated assuming an 8% discount rate. This is \$425,232 larger than the PV of MACRS only. This chapter examines Accelerated depreciation election and the PV of deductions. The PV of Accelerated depreciation deductions is calculated by subtracting the PV of a deduction with no Accelerated depreciation use from the PV of Accelerated depreciation. This value is then multiplied by the appropriate historical tax rate to find the after-tax PV of the depreciation deduction. Tax rates assume the

farmer is filing as a married taxpayer filing jointly. The farms calculated Schedule F net farm profit or loss is used to determine the appropriate tax bracket.

Table 4.2 Summary Statistics of Accelerated Depreciation After-Tax Present Values

Asset Class	Section 179	Bonus	Both Deductions	Total Accelerated Depreciation	Mean ATPV of Accelerated Depreciation	Standard Deviation	Min	Max
	Observations				\$			
3	23	2	1	24	727	978	24	3,824
5	135	12	3	144	1,071	2,269	1	18,212
7	267	23	11	279	4,702	9,766	9	98,032
10	53	7	1	59	4,125	8,946	7	54,426
15	75	6	1	80	2,009	2,086	3	12,473
20	0	20	0	20	6,997	11,665	290	51,651
Total	553	70	17	606	-	-	-	-

Table 4.2 shows the after-tax present value (ATPV) frequency and summary statistics of Section 179 and Bonus depreciation deductions taken, conditional on the use of either form of Accelerated depreciation. ATPV is defined as the present value of the Accelerated depreciation less the present value of the same investments under MACRS depreciation multiplied by the applicable tax rate. The largest depreciation deduction ATPV of \$54,426 was due to the use of a Bonus depreciation deduction in a year with a negative Schedule F net farm profit or loss. Bonus depreciation may be used in years with negative Schedule F profit or loss while that option is not available for Section 179 depreciation deductions.

The minimum values in Table 4.2 represent Accelerated depreciation deductions elected. The high maximum values and low minimum values are driven by unique users of Accelerated depreciation and warrant further investigation of Accelerated depreciation use by type, asset class and farm type.

4.2 Section 179 Present Values

To find the first year benefit individual producers received from the deductions they took, the present value of their depreciation deductions was multiplied by their tax rate. This after tax present value is calculated for Section 179 and Bonus depreciation deductions. The section below looks at these values by farm type, year, and asset class.

Table 4.3 After Tax Present Value Summary Statistics of Section 179 Depreciation Deduction

Asset Class	Observations	Mean ATPV	Standard Deviation	Min	Max
		\$			
3	23	757	988	36	3,824
5	135	826	1,352	1	8,617
7	267	4,058	7,202	9	54,710
10	53	4,159	9,342	7	54,426
15	75	2,020	2,132	3	12,473
20	0	-	-	-	-
Total	553				

The mean ATPVs for each asset class trends with the total investment and frequency of investment statistics. Class 7, which applies to machinery and equipment, was the most common property to which Section 179 was applied. Class 10, which includes single purpose agricultural structures, had the highest mean ATPV. Class 20 property had no observations; this does not come as a surprise as the 20-year agricultural property is non-single purpose farm buildings (e.g., farm shops). To qualify for Section 179 direct expensing a facility must be a single purpose agricultural (livestock) or horticultural structure (IRS, 2014). These single purpose structures are categorized by the IRS as 10-year property.

The minimum ATPV for class 5 and 15 properties, accurately represent Section 179 deductions taken off \$60 and \$30 respectively. When electing a Section 179 depreciation deduction the farmer has the option of choosing any dollar value up to the total depreciable basis,

barring any adjustments and limitations. To better understand the utilization of Section 179 direct expensing, tables 4.4 and 4.5 break down the deduction by category. In Table 4.5 the ratio that is calculated is the average PV of the depreciation deduction divided by the amount of the deduction. This ratio allows for a standardized comparison of deductions across asset classes and investment values.

Table 4.4 After Tax Present Value of Section 179 Summary Statistics by Farm-Type and Asset Class

	Crop Farms					Dairy Farms					Diversified Farms					
Asset Class	Obs	Mean	Std Dev	Min	Max	Obs	Mean(\$)	Std Dev	Min	Max	Obs	Mean(\$)	Std Dev	Min	Max	Total
		\$					\$					\$				
3	16	660	983	36	3,824	4	1,072	1,437	68	3,206	3	857	312	518	1,132	23
5	70	797	1,219	5	6,400	40	847	1,328	5	6,290	25	873	1,748	1	8,617	135
7	155	3,790	6,659	20	34,377	80	3,684	6,295	16	39,156	32	6,297	10,857	9	54,710	267
10	9	1,682	2,227	7	6,197	30	5,793	12,036	52	54,426	14	2,251	2,924	105	8,081	53
15	55	2,043	1,879	100	8,787	9	2,355	4,040	3	12,473	11	1,635	1,113	298	3,275	75
Total	305					163					85					553

Table 4.5 After Tax Present Value Ratio of Section 179 Depreciation Deductions

	Crop Farms		Dairy Farms		Diversified Farms	
Asset Class	Observations	Ratio (%)	Observations	Ratio (%)	Observations	Ratio (%)
Class 3	16	2	4	7	3	2
Class 5	70	4	40	5	25	4
Class 7	155	5	80	6	32	6
Class 10	9	4	30	8	14	6
Class 15	55	9	9	11	11	7
Total	305		163		85	

Note: ATPV Ratio of Section 179 Depreciation (%) = (Average present value of Section 179 depreciation deduction/average amount of Section 179 depreciation deduction)

In Table 4.4, the largest average ATPV per class was realized by diversified farms using class 7 property. The largest ATPV across all observations and farm types were \$54,710. Crop farms most frequently used this deduction and did so most predominantly in class 7 property. Table 4.5 displays the mean ATPV ratios as a function of mean Section 179 depreciation deductions taken. The ATPV ratio (Average ATPV of depreciation deduction/average amount of Section 179 depreciation deduction), describes the relationship between the depreciation deduction taken and the benefit of the deduction. The ATPV ratio shows how much of the Section 179 depreciation deductions value was realized in the year the deduction was taken. This ratio also allows for comparison across asset classes and farms. A greater ATPV ratio represents a larger dollar-for-dollar benefit to the farmer. For example, an ATPV ratio of 3% provides a benefit of \$0.03 on every dollar of deduction. The largest ATPV ratio of Section 179 depreciation deductions was realized by dairy farms when investing in 15-year property. Crop and diversified farms saw their largest ATPV Ratio of 9% in class 15 assets as well. In general, the longer asset classes had a higher ATPV ratio, providing greater value to the farmer. This is expected as the present value of deductions in longer-lived assets is greater than assets with shorter tax lives.

4.3 Bonus Depreciation Present Values

Bonus depreciation has specific characteristics that make it different in the election from Section 179 depreciation deductions. These different characteristics, or rules, mean that the assets that Section 179 and Bonus depreciation are being used on are often different. To analyze the benefits received from Bonus depreciation deductions, this section, and the tables below identify Bonus depreciation deduction values by farm type, year, asset class and their associated after-tax present values.

Table 4.6 After Tax Present Value Summary Statistics of Bonus Depreciation Deductions

Asset Class	Observations	Mean	Standard Deviation	Min	Max
		\$			
3	2	1,615	2,250	24	3,206
5	12	4,073	5,906	87	18,212
7	23	16,572	24,554	63	98,032
10	7	9,408	15,325	160	42,870
15	6	2,857	2,758	18	7,921
20	20	6,997	11,665	290	51,651
Total	70				

Table 4.6 reveals that the highest number of ATPV Bonus depreciation allowances occurred in class 7 property followed closely by class 20 property. The high number of observations in 20-year property is largely attributed to the rules for electing Accelerated depreciation. To elect Accelerated depreciation on any assets in this class, farmers would have to use Bonus depreciation as non-single purpose property that does not qualify for Section 179 depreciation deductions. Class 7 had an average ATPV of \$16,572 with the highest value being \$98,032. Since Bonus depreciation requires the producer to take a fixed percent of the depreciable basis of new property, it is not surprising the mean ATPV of Bonus depreciation deductions was greater than Section 179 mean ATPV.

Table 4.7 After Tax Present Value Bonus Depreciation Summary Statistics by Farm-Type and Asset Class

	Crop Farms					Dairy Farms					Diversified Farms					
Asset Class	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Total
		\$					\$					\$				
3	0	.	.	.	.	1	3,206	.	3,206	3,206	1	24	.	24	24	2
5	4	759	701	87	1,613	7	6,491	6,879	405	18,212	1	403	.	403	403	12
7	10	3,106	3,170	63	9,245	11	26,253	29,623	1,828	98,032	2	30,655	34,018	6,601	54,710	23
10	2	570	579	160	979	5	12,943	17,248	590	42,870	0	.	.	.	.	7
15	4	2,881	3,560	18	7,921	1	2,889	.	2,889	2,889	1	2,727	.	2,727	2,727	6
20	13	6,684	13,706	290	51,651	4	4,279	3,964	293	8,506	3	11,979	9,453	5,048	22,747	20
Total	33					29					8					70

Table 4.8 After Tax Present Value Ratio of Bonus Depreciation Deductions Taken

	Crop Farms		Dairy Farms		Diversified Farms	
Asset Class	Observations	PV Ratio (%)	Observations	PV Ratio (%)	Observations	PV Ratio (%)
3	0	.	1	4	1	1
5	4	2	7	5	1	2
7	10	7	11	8	2	24
10	2	3	5	11	0	.
15	4	23	1	15	1	15
20	13	13	4	27	3	19
Total	33		29		8	

Note: ATPV Ratio of Bonus Depreciation(%) = (Average present value of Bonus depreciation deduction/average amount Bonus depreciation deduction

Table 4.7 shows crop and dairy farms had a similar frequency of observations, with dairy farms average ATPV being much larger. When diversified farms did elect a Bonus deduction, it came at a much larger ATPV. Dairy farms had the highest maximum ATPV of Bonus depreciation of \$98,032, which was realized on class 7 property. Class 20 property has the highest number of observations for crop farms and an ATPV of \$6,684. Diversified farms had their largest average ATPV being realized in class 7 property of \$30,655.

Table 4.8 allows for a comparison between the observations of the Bonus depreciation deductions taken in each class by examining the ATPV ratio. This ratio is calculated the same as the ATPV ratio of Section 179 depreciation. The ratio is calculated by dividing the average after-tax present value of Bonus depreciation divided by the average amount of Bonus depreciation deduction. The ATPV ratio of Bonus depreciation for class 20 property of dairy farms was the highest across all farm types and asset classes at 27%, meaning a benefit of \$0.27 was immediately realized for every dollar of Bonus depreciation deduction taken. Dairy farms realized the largest benefits in class 15 and 20 properties at 15% and 27% respectively. Diversified farms had the largest benefit in class 7 property with an ATPV ratio of 24%. Crop farms saw the greatest benefit in 15-year property with a PV ratio of 23%.

Across all farm types and asset classes, farmers benefited from both forms of Accelerated depreciation deductions. The use of ATPV and ATPV ratios shows the immediately realized value of the deduction to the producer.

4.4 Cost of Capital

Many studies examining the effect of tax policy on capital investment measured this effect using the cost of capital (Hall-Jorgenson, 1967). The cost of capital refers to the opportunity cost of making a specific investment. The cost of capital is the rate of return that

could have been earned by putting the same money into a different investment or the cost of funds used to finance the business. Hall and Jorgenson (1967), refer to cost of capital as:

$$(r - \pi + \delta) \frac{(1 - k - \tau z)}{(1 - \tau)}$$

where:

- r is the rate of return the company requires to attract investors
- π is the inflation rate on capital goods
- δ is the rate of economic depreciation
- τ is the tax rate
- k is the investment credit rate
- z is the present value of depreciation deduction

For r , the farms return on equity was assumed to be 0.06. The capital goods inflation rate, π , of 0.06 was used on class 3, 5 and 7 assets. An inflation rate of 0.03 was used for class 10, 15 and 20 year property. The inflation rates were calculated from the average percent change per year in the prices paid index from the United States Department of Agriculture National Agricultural Statistics Service from 2004-2014. The economic depreciation rate, δ , comes from work done by Brazell and Mackie (2000), who purpose an economic depreciation life 12 years for machinery and equipment and 20 years for longer lived assets. These useful lives translate into an economic depreciation rate of 0.083 and 0.05 respectively. The statutory tax rate, τ , used is the marginal IRS tax rate the farm uses dictated by their Schedule F net farm profit or loss assuming married, filing jointly tax status. No farms utilized investment credits, k , over this time period. To calculate z , the present value of the depreciation deduction, the present value of the depreciation deduction rate is calculated. To evaluate the cost of capital between MACRS depreciation and Accelerated depreciation deductions the tables below summarize the present

value of the depreciation deduction rates for each asset class and year. These present values are used in the cost of capital calculation and show the current benefit producers realize from the use of the deduction. Accelerated depreciation PVs are calculated by subtracting the first year Accelerated depreciation deduction from the appropriate depreciable basis of the asset with the remaining adjusted depreciable basis applied to the appropriate MACRS depreciation schedule. To account for the change in percent of depreciable basis being deducted in each recovery period for MACRS depreciation caused by the larger first year Accelerated depreciation percentage, all subsequent MACRS depreciation rates are weighted by the percent of first year investment. This methodology is used in tables 4.10 and 4.11. Whereas the percent of first year Accelerated depreciation deductions is unique for each investment and Accelerated depreciation deduction decision, the values in tables 4.10 and 4.11 for Accelerated depreciation, Section 179 depreciation and Bonus depreciation are the average PV for each Accelerated depreciation deduction decision for that asset class and recovery period.

Table 4.9 Average Present Value Depreciation Rates by Class and Recovery Period for MACRS and Accelerated Depreciation Tables

	MACRS Depreciation Rates							MACRS with Accelerated Depreciation Rates					
Recovery Period	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20		Class 3	Class 5	Class 7	Class 10	Class 15	Class 20
1	0.2500	0.1500	0.1071	0.0750	0.0500	0.0375		0.9431	0.8333	0.8210	0.8439	0.9072	0.7661
2	0.3472	0.2361	0.1771	0.1285	0.0880	0.0668		0.0264	0.0604	0.0470	0.0239	0.0095	0.0264
3	0.2143	0.1530	0.1289	0.1011	0.0733	0.0572		0.0163	0.0392	0.0342	0.0188	0.0079	0.0226
4	0.0992	0.1323	0.0972	0.0795	0.0611	0.0490		0.0075	0.0338	0.0258	0.0148	0.0066	0.0194
5	0	0.1225	0.0900	0.0642	0.0509	0.0420		0	0.0313	0.0239	0.0119	0.0055	0.0166
6	0	0.0567	0.0834	0.0595	0.0424	0.0360		0	0.0145	0.0221	0.0110	0.0046	0.0142
7	0	0	0.0772	0.0551	0.0372	0.0308		0	0	0.0205	0.0102	0.0040	0.0122
8	0	0	0.0358	0.0510	0.0344	0.0264		0	0	0.0095	0.0095	0.0037	0.0104
9	0	0	0	0.0472	0.0319	0.0241		0	0	0	0.0088	0.0034	0.0095
10	0	0	0	0.0437	0.0295	0.0223		0	0	0	0.0081	0.0032	0.0088
11	0	0	0	0.0202	0.0274	0.0207		0	0	0	0.0038	0.0029	0.0082
12	0	0	0	0	0.0253	0.0191		0	0	0	0	0.0027	0.0076
13	0	0	0	0	0.0235	0.0177		0	0	0	0	0.0025	0.0070
14	0	0	0	0	0.0217	0.0164		0	0	0	0	0.0023	0.0065
15	0	0	0	0	0.0201	0.0152		0	0	0	0	0.0022	0.0060
16	0	0	0	0	0.0093	0.0141		0	0	0	0	0.0010	0.0056
17	0	0	0	0	0	0.0130		0	0	0	0	0	0.0051
18	0	0	0	0	0	0.0121		0	0	0	0	0	0.0048
19	0	0	0	0	0	0.0112		0	0	0	0	0	0.0044
20	0	0	0	0	0	0.0103		0	0	0	0	0	0.0041
21	0	0	0	0	0	0.0048		0	0	0	0	0	0.0019
PV Per Class	0.9107	0.8505	0.7967	0.7251	0.6260	0.5467		0.9932	0.9707	0.9593	0.9536	0.9635	0.9567

Table 4.10 Average Present Value Depreciation Rates by Class and Recovery Period for Section 179 and Bonus Depreciation Tables

	Section 179 Depreciation Rates							Bonus Depreciation					
Recovery Period	Class 3	Class 5	Class 7	Class 10	Class 15	Class 20		Class 3	Class 5	Class 7	Class 10	Class 15	Class 20
1	0.9569	0.8483	0.8253	0.8611	0.9204	0		0.6364	0.6541	0.7443	0.7357	0.7565	0.7661
2	0.0199	0.0567	0.0458	0.0217	0.0083	0		0.1684	0.1012	0.0676	0.0367	0.0225	0.0264
3	0.0123	0.0368	0.0333	0.0171	0.0069	0		0.1039	0.0656	0.0492	0.0289	0.0188	0.0226
4	0.0057	0.0318	0.0251	0.0134	0.0058	0		0.0481	0.0567	0.0371	0.0227	0.0157	0.0194
5	0	0.0294	0.0233	0.0109	0.0048	0		0	0.0525	0.0344	0.0184	0.0131	0.0166
6	0	0.0136	0.0215	0.0101	0.0040	0		0	0.0243	0.0318	0.0170	0.0109	0.0142
7	0	0	0.0199	0.0093	0.0035	0		0	0	0.0295	0.0157	0.0095	0.0122
8	0	0	0.0092	0.0086	0.0032	0		0	0	0.0137	0.0146	0.0088	0.0104
9	0	0	0	0.0080	0.0030	0		0	0	0	0.0135	0.0082	0.0095
10	0	0	0	0.0074	0.0028	0		0	0	0	0.0125	0.0076	0.0088
11	0	0	0	0.0034	0.0026	0		0	0	0	0.0058	0.0070	0.0082
12	0	0	0	0	0.0024	0		0	0	0	0	0.0065	0.0076
13	0	0	0	0	0.0022	0		0	0	0	0	0.0060	0.0070
14	0	0	0	0	0.0020	0		0	0	0	0	0.0056	0.0065
15	0	0	0	0	0.0019	0		0	0	0	0	0.0052	0.0060
16	0	0	0	0	0.0009	0		0	0	0	0	0.0024	0.0056
17	0	0	0	0	0	0		0	0	0	0	0	0.0051
18	0	0	0	0	0	0		0	0	0	0	0	0.0048
19	0	0	0	0	0	0		0	0	0	0	0	0.0044
20	0	0	0	0	0	0		0	0	0	0	0	0.0041
21	0	0	0	0	0	0		0	0	0	0	0	0.0019
PV Per Class	0.9949	0.9733	0.9602	0.9587	0.9687	0		0.9567	0.9392	0.9418	0.9215	0.9042	0.9567

Table 4.9 shows greater present values from Accelerated depreciation use over strict MACRS use for all asset classes. The difference between the PV of Accelerated depreciation and MACRS PV increases as the assets useful life increases. Class 3 assets see an increase of 0.0825 from Accelerated depreciation use. Class 5 assets have an increase of 0.1202 in PV and this difference monotonically increases over 7, 10 and 15-year property with class 20 assets showing a 0.41 increase in PV from Accelerated depreciation use. The use of Accelerated depreciation shows a positive PV increase to producers when they elect any form of Accelerated depreciation. Table 4.10 shows a greater PV for Section 179 depreciation deductions. No class 20 property is eligible for Section 179 depreciation deductions. The higher PV from Section 179 depreciation deductions can be explained by the ability to deduct 100% of the depreciable basis of the investment in the first year where Bonus depreciation allows for a specific percent, often less than 100, to be deducted. Bonus depreciation shows one of its highest PV in class 20 property. From the PV in tables 4.9 and 4.10, the cost of capital is calculated for MACRS depreciation, Accelerated depreciation, Section 179 depreciation and Bonus depreciations.

Table 4.11 Summary Statistics for Cost of Capital with MACRS Depreciation

Asset Class	Observations	Mean	Std. Dev.	Min	Max
Cost of Capital					
Class 3	63	0.0857	0.0012	0.0838	0.0879
Class 5	317	0.0876	0.0021	0.0844	0.0911
Class 7	353	0.0889	0.0029	0.0849	0.0941
Class 10	132	0.0887	0.0036	0.0824	0.0944
Class 15	125	0.0916	0.0049	0.0833	0.0996
Class 20	123	0.0837	0.0015	0.0810	0.0861
Total	1,113				

The cost of capital for traditional MACRS depreciation in Table 4.11 provides reference points for Accelerated depreciation cost of capital changes. The highest cost of capital is class

15 assets with the lowest being class 20. Table 4.11 shows the cost of capital for every asset class has a small standard deviation.

Table 4.12 Cost of Capital by Class for Accelerated Depreciation Use

Asset Class	Observations	Mean	Std. Dev.	Min	Max
		Cost of Capital			
Class 3	24	0.0832	0.0007	0.083	0.0853
Class 5	144	0.0840	0.0017	0.0815	0.0892
Class 7	279	0.0842	0.0022	0.0728	0.0919
Class 10	59	0.0817	0.0029	0.08	0.0898
Class 15	80	0.0813	0.0032	0.08	0.0939
Class 20	20	0.0816	0.0011	0.08	0.0830
Total	606				

Table 4.12 shows that when accounting for the use of Accelerated depreciation, the mean cost of capital has decreased overall asset classes as compared to the MACRS cost of capital. Class 15 assets have the lowest cost of capital at 0.0813. The highest average cost of capital with Accelerated depreciation use is class 7 property. To learn of the influence from each part of Accelerated depreciation, Table 4.13 provides the average cost of capital for Section 179 and Bonus depreciation deductions.

Table 4.13 Cost of Capital by Asset Class for Section 179 and Bonus Depreciation Deductions

	Section 179					Bonus					
Asset Class	Obs.	Mean	Std. Dev.	Min	Max	Obs.	Mean	Std. Dev.	Min	Max	Difference
		Cost of Capital					Cost of Capital				
Class 3	23	0.0832	0.0006	0.083	0.0853	2	0.0848	0.0007	0.0842	0.0853	0.0016
Class 5	135	0.0839	0.0016	0.083	0.0892	12	0.0853	0.0019	0.0815	0.0875	0.0014
Class 7	267	0.0842	0.0021	0.0825	0.0919	23	0.0848	0.0034	0.0728	0.0890	0.0006
Class 10	53	0.0815	0.0028	0.08	0.0898	7	0.0835	0.0033	0.08	0.0872	0.002
Class 15	75	0.0810	0.0028	0.08	0.0939	6	0.0847	0.0052	0.08	0.0905	0.0037
Class 20	0					20	0.0816	0.0011	0.08	0.0830	0.0816
Total	553					70					

Difference^a= Bonus cost of capital-Section 179 cost of capital

When looking at Section 179 and Bonus depreciation deductions cost of capital, Section 179 has a lower cost of capital over every eligible asset class. The largest difference between Section 179 and Bonus depreciation costs of capital is found in class 15 property. Table 4.14 shows all farm types with the similar average cost of capital when looking across all asset classes when Section 179 depreciation was used. Table 4.15 again shows the average cost of capital by farm type is fairly consistent when utilizing Bonus depreciation.

Table 4.14 Cost of Capital by Farm-Type and Asset Class for Section 179 Depreciation Deductions

Crop Farms						Dairy Farms					Diversified Farms					
Asset Class	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Total
		Cost of Capital						Cost of Capital					Cost of Capital			
Class 3	16	0.0831	0.0005	0.0830	0.0851	4	0.0836	0.0011	0.0830	0.0853	3	0.0830	0.0000	0.0830	0.0830	23
Class 5	70	0.0836	0.0013	0.0830	0.0889	40	0.0844	0.0020	0.0830	0.0892	25	0.0840	0.0016	0.0830	0.0873	135
Class 7	155	0.0841	0.0020	0.0830	0.0910	80	0.0843	0.0020	0.0825	0.0900	32	0.0844	0.0026	0.0830	0.0919	267
Class 10	9	0.0804	0.0013	0.0800	0.0838	30	0.0820	0.0032	0.0800	0.0898	14	0.0810	0.0023	0.0800	0.0875	53
Class 15	55	0.0812	0.0032	0.0800	0.0939	9	0.0800	0.0000	0.0800	0.0800	11	0.0809	0.0020	0.0800	0.0862	75
Total	305					163					85					553

Table 4.15 Cost of Capital by Farm-Type and Asset Class for Bonus Depreciation Deductions

Crop Farms						Dairy Farms					Diversified Farms					
Asset Class	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Obs	Mean	Std Dev	Min	Max	Total
		Cost of Capital						Cost of Capital					Cost of Capital			
Class 3	0	.	.	.	.	1	0.0853	.	0.0853	0.0853	1	0.0842	.	0.0842	0.0842	2
Class 5	4	0.0843	0.0026	0.0815	0.0875	7	0.0860	0.0014	0.0833	0.0872	1	0.0841	.	0.0841	0.0841	12
Class 7	10	0.0851	0.0020	0.0830	0.0885	11	0.0847	0.0046	0.0728	0.0890	2	0.0836	0.0008	0.0830	0.0842	23
Class 10	2	0.0857	0.0004	0.0854	0.0859	5	0.0826	0.0036	0.0800	0.0872	0	.	.	.	.	7
Class 15	4	0.0820	0.0040	0.0800	0.0881	1	0.0898	.	0.0898	0.0898	1	0.0905	.	0.0905	0.0905	6
Class 20	13	0.0812	0.0012	0.0800	0.0830	4	0.0823	0.0006	0.0815	0.0829	3	0.0822	0.0007	0.0818	0.0830	20
Total	33					29					8					70

Table 4.16 Cost of Capital by Asset Class Across Years for MACRS Depreciation

Asset Class	Obs	2004	Obs	2005	Obs	2006	Obs	2007	Obs	2008	Obs	2009	Obs	2010	Obs	2011	Obs	2012	Obs	2013	Obs	2014	Total
Class 3	6	0.086	8	0.086	9	0.086	4	0.085	8	0.086	5	0.085	4	0.084	7	0.086	3	0.087	5	0.086	4	0.087	63
Class 5	30	0.088	28	0.087	36	0.087	29	0.088	26	0.087	37	0.087	27	0.087	21	0.088	27	0.088	29	0.088	27	0.088	317
Class 7	36	0.088	36	0.089	41	0.089	35	0.089	35	0.088	28	0.089	31	0.088	24	0.090	25	0.090	30	0.090	32	0.090	353
Class 10	12	0.087	8	0.088	15	0.087	17	0.090	19	0.089	14	0.088	10	0.087	8	0.090	12	0.090	13	0.090	4	0.093	132
Class 15	9	0.091	7	0.091	7	0.089	14	0.093	7	0.094	17	0.091	11	0.088	15	0.092	10	0.094	15	0.091	13	0.093	125
Class 20	5	0.083	6	0.084	12	0.083	12	0.083	17	0.084	16	0.083	6	0.083	10	0.083	10	0.084	11	0.084	18	0.084	123
Total	98		93		120		111		112		117		89		85		87		103		98		1,113

Table 4.17 Cost of Capital by Asset Class Across Years for Section 179 Depreciation Deductions Taken

Asset Class	Obs	2004	Obs	2005	Obs	2006	Obs	2007	Obs	2008	Obs	2009	Obs	2010	Obs	2011	Obs	2012	Obs	2013	Obs	2014	Total
Class 3	1	0.083	1	0.083	4	0.084	2	0.083	3	0.083	0	.	1	0.083	3	0.083	2	0.083	4	0.083	2	0.084	23
Class 5	8	0.084	15	0.084	8	0.084	11	0.084	12	0.084	12	0.084	10	0.083	14	0.084	11	0.085	19	0.084	15	0.084	135
Class 7	22	0.085	25	0.084	18	0.084	27	0.084	25	0.084	8	0.084	24	0.084	28	0.084	33	0.085	29	0.084	28	0.084	267
Class 10	5	0.082	8	0.083	3	0.085	3	0.080	4	0.081	2	0.080	3	0.080	9	0.080	4	0.081	5	0.082	7	0.081	53
Class 15	2	0.082	7	0.080	5	0.080	5	0.080	7	0.080	5	0.083	7	0.080	7	0.080	15	0.082	7	0.082	8	0.082	75
Total	38		56		38		48		51		27		45		61		65		64		60		553

Table 4.18 Cost of Capital by Asset Class Across Years for Bonus Deduction Deductions Taken

Asset Class	Obs	2004	Obs	2005	Obs	2006	Obs	2007	Obs	2008	Obs	2009	Obs	2010	Obs	2011	Obs	2012	Obs	2013	Obs	2014	Total
Class 3	0	.	0	.	0	.	0	.	0	.	0	.	0	.	0	.	1	0.084	0	.	1	0.085	2
Class 5	5	0.086	0	.	0	.	0	.	2	0.086	0	.	0	.	2	0.082	1	0.086	1	0.083	1	0.087	12
Class 7	5	0.086	0	.	0	.	0	.	1	0.082	0	.	3	0.087	3	0.080	5	0.086	3	0.084	3	0.085	23
Class 10	2	0.086	0	.	0	.	0	.	0	.	0	.	1	0.080	2	0.080	1	0.086	0	.	1	0.087	7
Class 15	0	.	0	.	0	.	0	.	0	.	0	.	0	.	3	0.080	1	0.088	1	0.091	1	0.090	6
Class 20	5	0.082	0	.	.	.	0	.	1	0.082	1	0.081	4	0.081	3	0.080	3	0.082	2	0.083	1	0.082	20
Total	17		0		0		0		4		1		8		13		12		7		8		70

Tables 4.16, 4.17 and 4.18 allow for a comparison of the cost of capital between different depreciation elections for the same year and asset class. Over the years, the cost of capital remains consistent within each depreciation type. One of the biggest changes in the cost of capital between years comes from Bonus depreciation in 2011 when there was a decrease in the cost of capital in all asset classes, potentially due to the 100% Bonus depreciation deduction allowed that year. The large policy changes in Section 179 depreciation happened between 2006-2007, 2007-2008, and 2009-2010. Between 2006 and 2007 there was a slight decrease in the cost of capital for class 3 and 10-year property. From 2007-2008, there was little to no change in the cost of capital. The largest Section 179 policy expansion in 2009-2010 saw a modest reduction in 5 and 15-year property.

Table 4.19 Average Cost of Capital by Depreciation Type

Asset Class	MACRS Depreciation	Accelerated Depreciation		Section 179 Depreciation		Bonus Depreciation	
	Cost of Capital	Cost of Capital	Percent Change	Cost of Capital	Percent Change	Cost of Capital with	Percent Change
3	0.0857	0.0832	-2.92	0.0832	-2.92	0.0848	-1.05
5	0.0876	0.0840	-4.11	0.0839	-4.22	0.0853	-2.63
7	0.0889	0.0842	-5.29	0.0842	-5.29	0.0848	-4.61
10	0.0887	0.0817	-7.89	0.0815	-8.12	0.0835	-5.86
15	0.0916	0.0813	-11.24	0.0810	-11.57	0.0847	-7.53
20	0.0837	0.0816	-2.51	.	.	0.0816	-2.51

Note: Percent Change = change from MACRS Depreciation Cost of Capital

Table 4.19 provides a side by side comparison of the depreciation types as well as the difference between the respective type and MACRS depreciation. The average MACRS depreciation cost of capital is calculated from the investments that used no accelerated depreciation. The forms of accelerated depreciation were calculated conditionally on use. Accelerated, Section 179 and Bonus depreciation each lowered the cost of capital. The greatest decrease in the cost of capital came from the use of Section 179 depreciation deductions. These

deductions drove down the average Accelerated depreciation cost of capital. When Section 179 depreciation deductions were eligible, the reduction in the cost of capital increases as asset lives increased. This means that Section 179 depreciation deductions lower the opportunity cost of a purchases more for longer lives assets than they do for shorter ones, thus incentivizing greater investments in longer-lived items. The greater decrease caused by Section 179 depreciation can be largely attributed to the policy characteristics of the deduction. Section 179 allows producers to deduction 100% of the depreciable basis of property in the first year if eligible. Bonus depreciation dictates a percent of depreciable basis be claimed in the first year. Section 179's potential for larger weighting of first-year depreciation deductions shows to drive up the PV of the depreciation deduction thus driving down the cost of capital. The greatest decrease in the cost of capital occurred in 15-year property when Section 179 depreciation was used. The cost of capital decreased by 11.57% compared to utilizing MACRS depreciation alone. These tax policy incentives have proven to provide a benefit to farmers in both the present value of the depreciation deduction as well as a reduction in the cost of capital when an investment decision is made.

Table 4.20 calculates the changes in cost of capital with r set at the actual long-term ROE for each operation. The MACRS cost of capital, is the cost of capital the farmer would have had if they would not have utilized the accelerated depreciation deduction. Table 4.20 assumes the use of the farms average ROE with a lower ROE limit of 6% and an upper limit of 11%. The calculation also assumes a 3% inflation rate on capital good for class 3, 5, and 7 property and 6% inflation for class 10, 15 and 20 year property. The results share the same pattern as table 4.19 in that as asset classes lengthen the cost of capital decreases with the use of the accelerated depreciation deduction.

Table 4.20 Average Cost of Capital by Depreciation Type: Internal ROE of 6-11%

		Accelerated Depreciation			Section 179 Depreciation				Bonus Depreciation			
Asset Class	Obs	MACRS Cost of Capital	Acc Dep Cost of Capital	Percent Change	Obs	MACRS Cost of Capital	Sec 179 Cost of Capital	Percent Change	Obs	MACRS Cost of Capital	Bonus Cost of Capital	Percent Change
3	24	0.1341	0.1292	-3.66	23	0.1340	0.1290	-3.76	2	0.1389	0.1358	-2.20
5	144	0.1293	0.1235	-4.51	135	0.1289	0.1230	-4.60	12	0.1372	0.1324	-3.51
7	279	0.1293	0.1216	-5.96	267	0.1292	0.1216	-5.94	23	0.1337	0.1249	-6.62
10	59	0.1331	0.1223	-8.14	53	0.1315	0.1206	-8.27	7	0.1474	0.1357	-7.97
15	80	0.1421	0.1239	-12.84	75	0.1411	0.1229	-12.95	6	0.1569	0.1377	-12.22
20	20	0.1402	0.1253	-10.62			.	.	20	0.1402	0.1253	-10.62

Note: Percent Change = change from MACRS Depreciation Cost of Capital
ROE in the average internal ROE with a lower limit of 6% and upper limit is 11%

4.5 Effect on Investment

To measure the responsiveness of farm investment to the depreciation tax policy changes, economists use the elasticity of investment. Investment elasticity is the percentage change in investment with respect to the percentage change in the user cost of capital. Lui found that the elasticity was -2.0 in some cases, meaning a one percent decrease in the cost of capital would result in a two percent increase in investment. Hassett and Hubbard (2002) reviewed the literature on the effect of tax policy on business investment and concluded that the elasticity of investment on the tax-adjusted user cost of capital is between -0.5 and -1.0. Using the range of investment elasticity suggested by Hassett and Hubbard, Table 4.21 displays the resulting increase in investment by asset class for both types of Accelerated depreciation together, then Section 179 and Bonus depreciation independently.

Table 4.21 Investment Responses Relative to MACRS Depreciation

	Accelerated Depreciation		Section 179 Depreciation		Bonus Depreciation	
	Investment Elasticity					
Asset Class	-0.5	-1.0	-0.5	-1.0	-0.5	-1.0
	% change					
3	1.46	2.92	1.46	2.92	0.53	1.05
5	2.06	4.11	2.11	4.22	1.32	2.63
7	2.65	5.29	2.65	5.29	2.30	4.61
10	3.94	7.89	4.06	8.12	2.93	5.86
15	5.62	11.24	5.79	11.57	3.76	7.53
20	1.26	2.51	.	.	1.26	2.51

Note: Percent Change = change from investment under MACRS Depreciation.

The largest responses in investment occur in the 10 and 15-year property although seven year property also has a relatively large response to accelerated depreciation. Section 179 is driving more investment than Bonus depreciation. If expansion of these policies is driven by the

desire to decrease the cost of capital farmers face when making an investment decision, then it appears to be working.

Chapter 5. Summary and Conclusions

In 1981, the IRS tax code changed to allow for Section 179 Accelerated depreciation deductions. In 2002, Bonus depreciation was added as an additional form of first-year depreciation. These changes were initially created to incentive the investments made in equipment. While the agricultural industry is not the only beneficiary of Accelerated depreciation deductions, it has become commonplace for farmers to take advantage of the deductions available to them. With the widespread use of these tax tools that are designed to decrease the taxable incomes of farmers, it is important to quantify the benefits producers are receiving.

In this panel data set of 66 farms spanning 11 years, there have been 305 Section 179 depreciation deductions taken with an average value of \$52,250 and 70 Bonus depreciation deductions taken with an average value of \$100,886. Over the 11 year time period, there has been 7 Section 179 depreciation tax policy changes and four Bonus depreciation policy changes. Changes in policy levels signal governmental preferences towards increased or decreased business investment. A driver of investment is the return a firm receives from the addition of a new capital asset. This paper quantified the benefits a farm receives from the addition of Accelerated depreciation when an investment is made. This has been done through present value analysis of the depreciation deduction and via depiction of the reduction in the cost of capital.

The present value of the depreciation deduction is the immediate benefit the farmer receives from electing an Accelerated depreciation deduction. The present value is multiplied by the tax rate to account for the farmers true depreciation deduction value. These present values of depreciation deductions offer farmers a large benefit in the year investment is made. The average after-tax present value of \$6,997 for a Bonus depreciation deduction when investment in

Class 20 property is made means that the producer is receiving \$6,997 worth of value in the current year by electing the Bonus depreciation over utilizing MACRS depreciation alone. This immediate depreciation benefit then translates into a decreased cost of investment for the producer. This change in cost can be captured by calculating the cost of capital.

The cost of capital represents the opportunity cost the farmer faces when making an investment in the business. The internal cost of capital dictates the businesses required a return from the investment they are making. If the cost of the asset they are deciding to invest in can be lowered through Accelerated depreciation deductions, the business can more easily generate the required return from that asset, thus increasing the likelihood of capital investment. This paper calculated the decrease in cost of capital that was attributed to Accelerated depreciation deductions. Use of Accelerated depreciation created an average decrease in the cost of capital of up to 11.24%. For the most frequently invested in the asset class, class 7, there was a 5.29% decrease in the cost of capital from using Accelerated depreciation.

These immediate benefits in present value that translate into a decrease in the cost of capital for farmers from the election of Accelerated depreciation are worth noting. Farmers are seeing large benefits from these tax policies, especially in years of high net farm income. With Section 179 maximum expense and investment limits monotonically increasing over the life of the policy, it is important to know the resulting producer benefits. If the expansion of these policies is driven by the desire to decrease the cost of capital farmers face when making an investment decision, then it appears to be working. Further research would need to be done to form any conclusions on Accelerated depreciation deductions role in farmer investment behavior.

APPENDIX

```

Clear
set more off
*Import FINAN's
import excel "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Telfarm FINAN Data.xlsx", sheet("Compiled") firstrow
save "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Farm Level .dta", replace
clear
*Import Depreciation
import excel "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/LP Imports All Years Tax Info.xlsx", sheet("Dep from Bob") firstrow
save "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Tax Level.dta", replace
clear
*Import Beg and Ending Farm Type
import excel "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Data Set for End and Beg Farm Type_Dec_Compiled.xls", sheet("Sheet1") firstrow
keep FarmID Year BegFarmType EndFarmType
save "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Farm Type.dta", replace
clear
use "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Farm Level .dta"
*Farm Yr uniquely identifies observations
duplicates report FarmID Year
duplicates list FarmID Year
drop if FarmID==650065 & (Year==1995 | Year==1996) & FamilyLiving==.
*Fixing ID's (Did it in excel) and re-ran do file
*Merging FINAN and Depreciation excel files
merge 1:m FarmID Year using "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Tax Level.dta"
tab Year if _m==1
*Farms that Had No tax info but has FINAN's
tab FarmID if _m==1 & Year>2003
*Farms that had no FINANs but had tax
tab FarmID if _m==2 & Year>2003
drop _merge
*Merging 3rd file for Farm Type
**Run lines 1-8 in do file
*keep FarmID Year BegFarmType EndFarmType
merge m:1 FarmID Year using "/Users/LeonardPolzin/Desktop/Files/2015/MSU/Thesis/Current Working Files/Work with Hammy/Farm Type.dta"
*****Dropping Observations*****
**Dropping Fruit but keeping trees**
sort FarmID Year
by FarmID: drop if FarmID==110411
by FarmID: drop if FarmID==640461
**Dropping the Tree Farm**
by FarmID: drop if FarmID==31088

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**Dropping 2 farms
*Dropping FarmID 300152, they only had a 2014 FINAN and not much information in thier dep
sort FarmID Year
by FarmID: drop if FarmID==300152
*Dropping 780036 becasue they only have 2012-2014 Dep Information. He (Krupp) is a part-time farmer.
by FarmID: drop if FarmID==780036
**Dropping if FarmID is Blank
by FarmID: drop if FarmID==.
*Tells you how many farms did not have beg and end Farm type information
codebook FarmID if _m==1
order FarmID Year BusinessID EndFarmType BegFarmType
drop if Year<=2003
replace EndFarmType= FarmTypeCashFarmIncomeSect if EndFarmType=="" & BegFarmType==""
replace BegFarmType = FarmTypeCashFarmIncomeSect if EndFarmType==FarmTypeCashFarmIncomeSect &
BegFarmType==""
*Number of Business ID's associated with one Farm
*** _N ---> total number of observations for "FarmID Year" combo***
bysort FarmID Year: gen NubBus2 =_N
codebook FarmID
*collapsing
preserve
bysort FarmID Year: keep if _n==1
tab NubBus2
restore
preserve
bysort FarmID BusinessID: keep if _n==1
tab FarmID BusinessID
restore
bysort FarmID:egen Temp=max(NubBus2)
gen XYZ=NubBus2
replace XYZ=. if Temp!=NubBus2 //Means there was some change in number of business ID's
preserve
bysort FarmID: keep if _n==1
tab XYZ
restore
*****Renaming*****
rename AV FinanMACRS_CrYr_C3
rename AW FinanMACRS_CrYr_C5
rename AX FinanMACRS_CrYr_C7
rename AY FinanMACRS_CrYr_C10
rename AZ FinanMACRS_CrYr_C15
rename BA FinanMACRS_CrYr_20
rename BB FinanMACRS_CrYr_275
rename BC FinanMACRS_CrYr_315

***** Making Class 31.5 year property into 27.5 year class property because TelFarm had it
coded wrong*****
rename TotalInvestmentinClass275 Old_TotalInvestmentinClass275
rename Costof179PropertyClass275 Old_Costof179PropertyClass275
rename TotalElectedCostofClass275 Old_TotalElectedCostofClass275
rename SpecialDepreciationonClass27 Old_SpecialDepreciationonClass27

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rename FinanMACRS_CrYr_275 Old_FinanMACRS_CrYr_275
rename TotalInvestmentinClass315 Old_TotalInvestmentinClass315
rename Costof179PropertyClass315 Old_Costof179PropertyClass315
rename TotalElectedCostofClass315 Old_TotalElectedCostofClass315
rename SpecialDepreciationonClass31 Old_SpecialDepreciationonClass31
rename FinanMACRS_CrYr_315 Old_FinanMACRS_CrYr_315
gen TotalInvestmentinClass275 = Old_TotalInvestmentinClass275+Old_TotalInvestmentinClass315
gen Costof179PropertyClass275 = Old_Costof179PropertyClass275 +Old_Costof179PropertyClass315
gen TotalElectedCostofClass275 = Old_TotalElectedCostofClass275+Old_TotalElectedCostofClass315
gen SpecialDepreciationonClass275 = Old_SpecialDepreciationonClass27+Old_SpecialDepreciationonClass31
gen FinanMACRS_CrYr_275=Old_FinanMACRS_CrYr_275+Old_FinanMACRS_CrYr_315
*****
drop XYZ Temp NubBus2 _merge
tab1 Netoperatingprofit CashandChecking Networkh
replace Netoperatingprofit="1533156" if Netoperatingprofit=="1,533,,156"
destring Netoperatingprofit, replace
destring CashandChecking, replace
replace Networkh="451073" if Networkh=="4,510,73"
destring Networkh, replace
*destring EndFarmType, replace
*destring BegFarmType, replace
*destring FarmType
gen Z_Dis_Rate=0.08
***Doing NPV*****
**NPV Class 3
*NPV C3 With Accelerated Depreciation
gen Basis_C3 = TotalInvestmentinClass3-TotalElectedCostforClass3-SpecialDepreciationonClass3
gen MACRS_Yr1_C3=Basis_C3*.25
gen Total_Y1_Ded_WithAccDep_C3= TotalElectedCostforClass3+SpecialDepreciationonClass3+MACRS_Yr1_C3
gen MACRS_Yr2_WithAccDep_C3= Basis_C3*.3750
gen MACRS_Yr3_WithAccDep_C3= Basis_C3*.25
gen MACRS_Yr4_WithAccDep_C3= Basis_C3*.1250
gen NPV_WithAccDep_C3= Total_Y1_Ded_WithAccDep_C3/1+ MACRS_Yr2_WithAccDep_C3/(1.08^1)+
MACRS_Yr3_WithAccDep_C3/(1.08^2)+ MACRS_Yr4_WithAccDep_C3/(1.08^3)
gen Wolf_PV_MACRS_Yr1_C3 = (0.25)/1
gen Wolf_PV_MACRS_Yr2_C3 = (0.3750)/((1+Z_Dis_Rate)^1)
gen Wolf_PV_MACRS_Yr3_C3 = (0.25)/((1+Z_Dis_Rate)^2)
gen Wolf_PV_MACRS_Yr4_C3 = (0.1250)/((1+Z_Dis_Rate)^3)
gen Wolf_Sum_MACRS_C3 =
Wolf_PV_MACRS_Yr1_C3+Wolf_PV_MACRS_Yr2_C3+Wolf_PV_MACRS_Yr3_C3+Wolf_PV_MACRS_Yr4_C3
gen X_AccDep_Rate_C3=(TotalElectedCostforClass3+SpecialDepreciationonClass3)/TotalInvestmentinClass3
gen Z_Wolf_Yr0_C3=X_AccDep_Rate_C3
gen Z_Wolf_Yr1_C3= (1-X_AccDep_Rate_C3)*Wolf_PV_MACRS_Yr1_C3
gen Z_Wolf_Yr2_C3= (1-X_AccDep_Rate_C3)*Wolf_PV_MACRS_Yr2_C3
gen Z_Wolf_Yr3_C3= (1-X_AccDep_Rate_C3)*Wolf_PV_MACRS_Yr3_C3
gen Z_Wolf_Yr4_C3= (1-X_AccDep_Rate_C3)*Wolf_PV_MACRS_Yr4_C3
gen Z_SumWolf_C3= Z_Wolf_Yr0_C3+Z_Wolf_Yr1_C3+Z_Wolf_Yr2_C3+Z_Wolf_Yr3_C3+Z_Wolf_Yr4_C3
*browse Total_Y1_Ded_C3 MACRS_Yr2_C3 MACRS_Yr3_C3 MACRS_Yr4_C3 NPV_C3
*NPV C3 With Out Accelerated Depreciation
gen Total_Y1_Ded_NoAccDep_C3= TotalInvestmentinClass3*.25
gen MACRS_Yr2_NoAccDep_C3= TotalInvestmentinClass3*.375

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gen MACRS_Yr3_NoAccDep_C3= TotalInvestmentinClass3*.25
gen MACRS_Yr4_NoAccDep_C3= TotalInvestmentinClass3*.1250
gen NPV_NoAccDep_C3= Total_Y1_Ded_NoAccDep_C3/1+ MACRS_Yr2_NoAccDep_C3/(1.08^1)+
MACRS_Yr3_NoAccDep_C3/(1.08^2)+ MACRS_Yr4_NoAccDep_C3/(1.08^3)
*NPV of Accelerated Depreciation ie: The difference
gen NPVofAccDep_C3=NPV_WithAccDep_C3-NPV_NoAccDep_C3
**NPV Class 5
*NPV C5 With Accelerated Depreciation
gen Basis_C5 = TotalInvestmentinClass5-TotalElectedCostforClass5-SpecialDepreciationonClass5
gen MACRS_Yr1_C5=Basis_C5*.15
gen Total_Y1_Ded_WithAccDep_C5= TotalElectedCostforClass5+SpecialDepreciationonClass5+MACRS_Yr1_C5
gen MACRS_Yr2_WithAccDep_C5= Basis_C5*.2550
gen MACRS_Yr3_WithAccDep_C5= Basis_C5*.1785
gen MACRS_Yr4_WithAccDep_C5= Basis_C5*.1666
gen MACRS_Yr5_WithAccDep_C5= Basis_C5*.1666
gen MACRS_Yr6_WithAccDep_C5= Basis_C5*.0833
gen NPV_WithAccDep_C5= Total_Y1_Ded_WithAccDep_C5/1+ MACRS_Yr2_WithAccDep_C5/(1.08^1)+
MACRS_Yr3_WithAccDep_C5/(1.08^2)+ MACRS_Yr4_WithAccDep_C5/(1.08^3)+
MACRS_Yr5_WithAccDep_C5/(1.08^4)+MACRS_Yr6_WithAccDep_C5/(1.08^5)
gen X_AccDep_Rate_C5=(TotalElectedCostforClass5+SpecialDepreciationonClass5)/TotalInvestmentinClass5
gen Wolf_PV_MACRS_Yr1_C5 = (0.15)/1
gen Wolf_PV_MACRS_Yr2_C5 = (0.2550)/((1+Z_Dis_Rate)^1)
gen Wolf_PV_MACRS_Yr3_C5 = (0.1785)/((1+Z_Dis_Rate)^2)
gen Wolf_PV_MACRS_Yr4_C5 = (0.1666)/((1+Z_Dis_Rate)^3)
gen Wolf_PV_MACRS_Yr5_C5 = (0.1666)/((1+Z_Dis_Rate)^4)
gen Wolf_PV_MACRS_Yr6_C5 = (0.0833)/((1+Z_Dis_Rate)^5)
gen Wolf_Sum_MACRS_C5 =
Wolf_PV_MACRS_Yr1_C5+Wolf_PV_MACRS_Yr2_C5+Wolf_PV_MACRS_Yr3_C5+Wolf_PV_MACRS_Yr4_C5+Wolf_P
V_MACRS_Yr5_C5+Wolf_PV_MACRS_Yr6_C5
gen Z_Wolf_Yr0_C5=X_AccDep_Rate_C5
gen Z_Wolf_Yr1_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr1_C5
gen Z_Wolf_Yr2_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr2_C5
gen Z_Wolf_Yr3_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr3_C5
gen Z_Wolf_Yr4_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr4_C5
gen Z_Wolf_Yr5_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr5_C5
gen Z_Wolf_Yr6_C5= (1-X_AccDep_Rate_C5)*Wolf_PV_MACRS_Yr6_C5
gen Z_SumWolf_C5
=Z_Wolf_Yr0_C5+Z_Wolf_Yr1_C5+Z_Wolf_Yr2_C5+Z_Wolf_Yr3_C5+Z_Wolf_Yr4_C5+Z_Wolf_Yr5_C5+Z_Wolf_Yr6_
C5
*browse Total_Y1_Ded_C3 MACRS_Yr2_C3 MACRS_Yr3_C3 MACRS_Yr4_C3 NPV_C3
*NPV C5 With Out Accelerated Depreciation
gen Total_Y1_Ded_NoAccDep_C5= TotalInvestmentinClass5*.15
gen MACRS_Yr2_NoAccDep_C5= TotalInvestmentinClass5*.2550
gen MACRS_Yr3_NoAccDep_C5= TotalInvestmentinClass5*.1785
gen MACRS_Yr4_NoAccDep_C5= TotalInvestmentinClass5*.1666
gen MACRS_Yr5_NoAccDep_C5= TotalInvestmentinClass5*.1666
gen MACRS_Yr6_NoAccDep_C5= TotalInvestmentinClass5*.0833
gen NPV_NoAccDep_C5= Total_Y1_Ded_NoAccDep_C5/1+ MACRS_Yr2_NoAccDep_C5/(1.08^1)+
MACRS_Yr3_NoAccDep_C5/(1.08^2)+ MACRS_Yr4_NoAccDep_C5/(1.08^3)+ MACRS_Yr5_NoAccDep_C5/(1.08^4)+
MACRS_Yr6_NoAccDep_C5/(1.08^5)
*NPV of Accelerated Depreciation ie: The difference

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gen NPVofAccDep_C5=NPV_WithAccDep_C5-NPV_NoAccDep_C5
**NPV Class 7
*NPV C7 With Accelerated Depreciation
gen Basis_C7 = TotalInvestmentinClass7-TotalElectedCostforClass7-SpecialDepreciationonClass7
gen MACRS_Yr1_C7=Basis_C7*.1071
gen Total_Y1_Ded_WithAccDep_C7= TotalElectedCostforClass7+SpecialDepreciationonClass7+MACRS_Yr1_C7
gen MACRS_Yr2_WithAccDep_C7= Basis_C7*.1913
gen MACRS_Yr3_WithAccDep_C7= Basis_C7*.1503
gen MACRS_Yr4_WithAccDep_C7= Basis_C7*.1225
gen MACRS_Yr5_WithAccDep_C7= Basis_C7*.1225
gen MACRS_Yr6_WithAccDep_C7= Basis_C7*.1225
gen MACRS_Yr7_WithAccDep_C7= Basis_C7*.1225
gen MACRS_Yr8_WithAccDep_C7= Basis_C7*.0613
gen NPV_WithAccDep_C7= Total_Y1_Ded_WithAccDep_C7/1+ MACRS_Yr2_WithAccDep_C7/(1.08^1)+
MACRS_Yr3_WithAccDep_C7/(1.08^2)+ MACRS_Yr4_WithAccDep_C7/(1.08^3)+
MACRS_Yr5_WithAccDep_C7/(1.08^4)+ MACRS_Yr6_WithAccDep_C7/(1.08^5)+
MACRS_Yr7_WithAccDep_C7/(1.08^6)+ MACRS_Yr8_WithAccDep_C7/(1.08^7)
gen X_AccDep_Rate_C7=(TotalElectedCostforClass7+SpecialDepreciationonClass7)/TotalInvestmentinClass7
gen Wolf_PV_MACRS_Yr1_C7 = (0.1071)/1
gen Wolf_PV_MACRS_Yr2_C7 = (0.1913)/((1+Z_Dis_Rate)^1)
gen Wolf_PV_MACRS_Yr3_C7 = (0.1503)/((1+Z_Dis_Rate)^2)
gen Wolf_PV_MACRS_Yr4_C7 = (0.1225)/((1+Z_Dis_Rate)^3)
gen Wolf_PV_MACRS_Yr5_C7 = (0.1225)/((1+Z_Dis_Rate)^4)
gen Wolf_PV_MACRS_Yr6_C7 = (0.1225)/((1+Z_Dis_Rate)^5)
gen Wolf_PV_MACRS_Yr7_C7 = (0.1225)/((1+Z_Dis_Rate)^6)
gen Wolf_PV_MACRS_Yr8_C7 = (0.0613)/((1+Z_Dis_Rate)^7)
gen Wolf_Sum_MACRS_C7 =
Wolf_PV_MACRS_Yr1_C7+Wolf_PV_MACRS_Yr2_C7+Wolf_PV_MACRS_Yr3_C7+Wolf_PV_MACRS_Yr4_C7+Wolf_P
V_MACRS_Yr5_C7+Wolf_PV_MACRS_Yr6_C7+Wolf_PV_MACRS_Yr7_C7+Wolf_PV_MACRS_Yr8_C7
gen Z_Wolf_Yr0_C7=X_AccDep_Rate_C7
gen Z_Wolf_Yr1_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr1_C7
gen Z_Wolf_Yr2_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr2_C7
gen Z_Wolf_Yr3_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr3_C7
gen Z_Wolf_Yr4_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr4_C7
gen Z_Wolf_Yr5_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr5_C7
gen Z_Wolf_Yr6_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr6_C7
gen Z_Wolf_Yr7_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr7_C7
gen Z_Wolf_Yr8_C7= (1-X_AccDep_Rate_C7)*Wolf_PV_MACRS_Yr8_C7
gen Z_SumWolf_C7=
Z_Wolf_Yr0_C7+Z_Wolf_Yr1_C7+Z_Wolf_Yr2_C7+Z_Wolf_Yr3_C7+Z_Wolf_Yr4_C7+Z_Wolf_Yr5_C7+Z_Wolf_Yr6_C
7+Z_Wolf_Yr7_C7+Z_Wolf_Yr8_C7
*browse
*NPV C7 With Out Accelerated Depreciation
gen Total_Y1_Ded_NoAccDep_C7= TotalInvestmentinClass7*.1071
gen MACRS_Yr2_NoAccDep_C7= TotalInvestmentinClass7*.1913
gen MACRS_Yr3_NoAccDep_C7= TotalInvestmentinClass7*.1503
gen MACRS_Yr4_NoAccDep_C7= TotalInvestmentinClass7*.1225
gen MACRS_Yr5_NoAccDep_C7= TotalInvestmentinClass7*.1225
gen MACRS_Yr6_NoAccDep_C7= TotalInvestmentinClass7*.1225
gen MACRS_Yr7_NoAccDep_C7= TotalInvestmentinClass7*.1225
gen MACRS_Yr8_NoAccDep_C7= TotalInvestmentinClass7*.0613

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gen NPV_NoAccDep_C7= Total_Y1_Ded_NoAccDep_C7/1+ MACRS_Yr2_NoAccDep_C7/(1.08^1)+
MACRS_Yr3_NoAccDep_C7/(1.08^2)+ MACRS_Yr4_NoAccDep_C7/(1.08^3)+ MACRS_Yr5_NoAccDep_C7/(1.08^4)+
MACRS_Yr6_NoAccDep_C7/(1.08^5)+ MACRS_Yr7_NoAccDep_C7/(1.08^6)+ MACRS_Yr8_NoAccDep_C7/(1.08^7)
*NPV of Accelerated Depreciation ie: The difference
gen NPVofAccDep_C7=NPV_WithAccDep_C7-NPV_NoAccDep_C7
**NPV Class 10
*NPV C10 With Accelerated Depreciation
gen Basis_C10 = TotalInvestmentinClass10-TotalElectedCostforClass10-SpecialDepreciationonClass10
gen MACRS_Yr1_C10=Basis_C10*0.0750
gen Total_Y1_Ded_WithAccDep_C10= TotalElectedCostforClass10+SpecialDepreciationonClass10+MACRS_Yr1_C10
gen MACRS_Yr2_WithAccDep_C10= Basis_C10*.1388
gen MACRS_Yr3_WithAccDep_C10= Basis_C10*.1179
gen MACRS_Yr4_WithAccDep_C10= Basis_C10*.1002
gen MACRS_Yr5_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr6_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr7_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr8_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr9_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr10_WithAccDep_C10= Basis_C10*.0874
gen MACRS_Yr11_WithAccDep_C10= Basis_C10*.0437
gen NPV_WithAccDep_C10= Total_Y1_Ded_WithAccDep_C10/1+ MACRS_Yr2_WithAccDep_C10/(1.08^1)+
MACRS_Yr3_WithAccDep_C10/(1.08^2)+ MACRS_Yr4_WithAccDep_C10/(1.08^3)+
MACRS_Yr5_WithAccDep_C10/(1.08^4)+ MACRS_Yr6_WithAccDep_C10/(1.08^5)+
MACRS_Yr7_WithAccDep_C10/(1.08^6)+
MACRS_Yr8_WithAccDep_C10/(1.08^7)+MACRS_Yr9_WithAccDep_C10/(1.08^8)+
MACRS_Yr10_WithAccDep_C10/(1.08^9)+ MACRS_Yr11_WithAccDep_C10/(1.08^10)
gen X_AccDep_Rate_C10=(TotalElectedCostforClass10+SpecialDepreciationonClass10)/TotalInvestmentinClass10
gen Wolf_PV_MACRS_Yr1_C10 = (0.0750)/1
gen Wolf_PV_MACRS_Yr2_C10 = (0.1388)/((1+Z_Dis_Rate)^1)
gen Wolf_PV_MACRS_Yr3_C10 = (0.1179)/((1+Z_Dis_Rate)^2)
gen Wolf_PV_MACRS_Yr4_C10 = (0.1002)/((1+Z_Dis_Rate)^3)
gen Wolf_PV_MACRS_Yr5_C10 = (0.0874)/((1+Z_Dis_Rate)^4)
gen Wolf_PV_MACRS_Yr6_C10 = (0.0874)/((1+Z_Dis_Rate)^5)
gen Wolf_PV_MACRS_Yr7_C10 = (0.0874)/((1+Z_Dis_Rate)^6)
gen Wolf_PV_MACRS_Yr8_C10 = (0.0874)/((1+Z_Dis_Rate)^7)
gen Wolf_PV_MACRS_Yr9_C10 = (0.0874)/((1+Z_Dis_Rate)^8)
gen Wolf_PV_MACRS_Yr10_C10 = (0.0874)/((1+Z_Dis_Rate)^9)
gen Wolf_PV_MACRS_Yr11_C10 = (0.0437)/((1+Z_Dis_Rate)^10)
gen Wolf_Sum_MACRS_C10 =
Wolf_PV_MACRS_Yr1_C10+Wolf_PV_MACRS_Yr2_C10+Wolf_PV_MACRS_Yr3_C10+Wolf_PV_MACRS_Yr4_C10+W
olf_PV_MACRS_Yr5_C10+Wolf_PV_MACRS_Yr6_C10+Wolf_PV_MACRS_Yr7_C10+Wolf_PV_MACRS_Yr8_C10+Wolf
_PV_MACRS_Yr9_C10+Wolf_PV_MACRS_Yr10_C10+Wolf_PV_MACRS_Yr11_C10
gen Z_Wolf_Yr0_C10=X_AccDep_Rate_C10
gen Z_Wolf_Yr1_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr1_C10
gen Z_Wolf_Yr2_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr2_C10
gen Z_Wolf_Yr3_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr3_C10
gen Z_Wolf_Yr4_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr4_C10
gen Z_Wolf_Yr5_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr5_C10
gen Z_Wolf_Yr6_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr6_C10
gen Z_Wolf_Yr7_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr7_C10
gen Z_Wolf_Yr8_C10= (1-X_AccDep_Rate_C10)*Wolf_PV_MACRS_Yr8_C10

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$$\text{gen Z_Wolf_Yr9_C10} = (1 - X_AccDep_Rate_C10) * \text{Wolf_PV_MACRS_Yr9_C10}$$

$$\text{gen Z_Wolf_Yr10_C10} = (1 - X_AccDep_Rate_C10) * \text{Wolf_PV_MACRS_Yr10_C10}$$

$$\text{gen Z_Wolf_Yr11_C10} = (1 - X_AccDep_Rate_C10) * \text{Wolf_PV_MACRS_Yr11_C10}$$

$$\text{gen Z_SumWolf_C10} = \text{Z_Wolf_Yr0_C10} + \text{Z_Wolf_Yr1_C10} + \text{Z_Wolf_Yr2_C10} + \text{Z_Wolf_Yr3_C10} + \text{Z_Wolf_Yr4_C10} + \text{Z_Wolf_Yr5_C10} + \text{Z_Wolf_Yr6_C10} + \text{Z_Wolf_Yr7_C10} + \text{Z_Wolf_Yr8_C10} + \text{Z_Wolf_Yr9_C10} + \text{Z_Wolf_Yr10_C10} + \text{Z_Wolf_Yr11_C10}$$

*browse Total_Y1_Ded_C10 MACRS_Yr2_C10 MACRS_Yr3_C10 MACRS_Yr4_C10
 *NPV C10 With Out Accelerated Depreciation

$$\text{gen Total_Y1_Ded_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0750$$

$$\text{gen MACRS_Yr2_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .1388$$

$$\text{gen MACRS_Yr3_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .1179$$

$$\text{gen MACRS_Yr4_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .1002$$

$$\text{gen MACRS_Yr5_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr6_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr7_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr8_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr9_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr10_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0874$$

$$\text{gen MACRS_Yr11_NoAccDep_C10} = \text{TotalInvestmentinClass10} * .0437$$

$$\text{gen NPV_NoAccDep_C10} = \text{Total_Y1_Ded_NoAccDep_C10} / 1 + \text{MACRS_Yr2_NoAccDep_C10} / (1.08^1) + \text{MACRS_Yr3_NoAccDep_C10} / (1.08^2) + \text{MACRS_Yr4_NoAccDep_C10} / (1.08^3) + \text{MACRS_Yr5_NoAccDep_C10} / (1.08^4) + \text{MACRS_Yr6_NoAccDep_C10} / (1.08^5) + \text{MACRS_Yr7_NoAccDep_C10} / (1.08^6) + \text{MACRS_Yr8_NoAccDep_C10} / (1.08^7) + \text{MACRS_Yr9_NoAccDep_C10} / (1.08^8) + \text{MACRS_Yr10_NoAccDep_C10} / (1.08^9) + \text{MACRS_Yr11_NoAccDep_C10} / (1.08^{10})$$

*NPV of Accelerated Depreciation ie: The difference

$$\text{gen NPVofAccDep_C10} = \text{NPV_WithAccDep_C10} - \text{NPV_NoAccDep_C10}$$

**NPV Class 15
 *NPV C15 With Accelerated Depreciation

$$\text{gen Basis_C15} = \text{TotalInvestmentinClass15} - \text{TotalElectedCostofClass15} - \text{SpecialDepreciationonClass15}$$

$$\text{gen MACRS_Yr1_C15} = \text{Basis_C15} * .05$$

$$\text{gen Total_Y1_Ded_WithAccDep_C15} = \text{TotalElectedCostofClass15} + \text{SpecialDepreciationonClass15} + \text{MACRS_Yr1_C15}$$

$$\text{gen MACRS_Yr2_WithAccDep_C15} = \text{Basis_C15} * .0950$$

$$\text{gen MACRS_Yr3_WithAccDep_C15} = \text{Basis_C15} * .0855$$

$$\text{gen MACRS_Yr4_WithAccDep_C15} = \text{Basis_C15} * .0770$$

$$\text{gen MACRS_Yr5_WithAccDep_C15} = \text{Basis_C15} * .0693$$

$$\text{gen MACRS_Yr6_WithAccDep_C15} = \text{Basis_C15} * .0623$$

$$\text{gen MACRS_Yr7_WithAccDep_C15} = \text{Basis_C15} * .0590$$

$$\text{gen MACRS_Yr8_WithAccDep_C15} = \text{Basis_C15} * .0590$$

$$\text{gen MACRS_Yr9_WithAccDep_C15} = \text{Basis_C15} * .0591$$

$$\text{gen MACRS_Yr10_WithAccDep_C15} = \text{Basis_C15} * .0590$$

$$\text{gen MACRS_Yr11_WithAccDep_C15} = \text{Basis_C15} * .0591$$

$$\text{gen MACRS_Yr12_WithAccDep_C15} = \text{Basis_C15} * .0590$$

$$\text{gen MACRS_Yr13_WithAccDep_C15} = \text{Basis_C15} * .0591$$

$$\text{gen MACRS_Yr14_WithAccDep_C15} = \text{Basis_C15} * .0590$$

$$\text{gen MACRS_Yr15_WithAccDep_C15} = \text{Basis_C15} * .0591$$

$$\text{gen MACRS_Yr16_WithAccDep_C15} = \text{Basis_C15} * .0295$$

$$\text{gen NPV_WithAccDep_C15} = \text{Total_Y1_Ded_WithAccDep_C15} / 1 + \text{MACRS_Yr2_WithAccDep_C15} / (1.08^1) + \text{MACRS_Yr3_WithAccDep_C15} / (1.08^2) + \text{MACRS_Yr4_WithAccDep_C15} / (1.08^3) + \text{MACRS_Yr5_WithAccDep_C15} / (1.08^4) + \text{MACRS_Yr6_WithAccDep_C15} / (1.08^5) +$$

$MACRS_Yr7_WithAccDep_C15/(1.08^6)+$
 $MACRS_Yr8_WithAccDep_C15/(1.08^7)+MACRS_Yr9_WithAccDep_C15/(1.08^8)+$
 $MACRS_Yr10_WithAccDep_C15/(1.08^9)+ MACRS_Yr11_WithAccDep_C15/(1.08^{10})+$
 $MACRS_Yr12_WithAccDep_C15/(1.08^{11})+ MACRS_Yr13_WithAccDep_C15/(1.08^{12})+$
 $MACRS_Yr14_WithAccDep_C15/(1.08^{13})+ MACRS_Yr15_WithAccDep_C15/(1.08^{14})+$
 $MACRS_Yr16_WithAccDep_C15/(1.08^{15})$
 $gen\ X_AccDep_Rate_C15=(TotalElectedCostofClass15+SpecialDepreciationonClass15)/TotalInvestmentinClass15$
 $gen\ Wolf_PV_MACRS_Yr1_C15 = (0.05)/1$
 $gen\ Wolf_PV_MACRS_Yr2_C15 = (0.0950)/((1+Z_Dis_Rate)^1)$
 $gen\ Wolf_PV_MACRS_Yr3_C15 = (0.0855)/((1+Z_Dis_Rate)^2)$
 $gen\ Wolf_PV_MACRS_Yr4_C15 = (0.0770)/((1+Z_Dis_Rate)^3)$
 $gen\ Wolf_PV_MACRS_Yr5_C15 = (0.0693)/((1+Z_Dis_Rate)^4)$
 $gen\ Wolf_PV_MACRS_Yr6_C15 = (0.0623)/((1+Z_Dis_Rate)^5)$
 $gen\ Wolf_PV_MACRS_Yr7_C15 = (0.0590)/((1+Z_Dis_Rate)^6)$
 $gen\ Wolf_PV_MACRS_Yr8_C15 = (0.0590)/((1+Z_Dis_Rate)^7)$
 $gen\ Wolf_PV_MACRS_Yr9_C15 = (0.0591)/((1+Z_Dis_Rate)^8)$
 $gen\ Wolf_PV_MACRS_Yr10_C15 = (0.0590)/((1+Z_Dis_Rate)^9)$
 $gen\ Wolf_PV_MACRS_Yr11_C15 = (0.0591)/((1+Z_Dis_Rate)^{10})$
 $gen\ Wolf_PV_MACRS_Yr12_C15 = (0.0590)/((1+Z_Dis_Rate)^{11})$
 $gen\ Wolf_PV_MACRS_Yr13_C15 = (0.0591)/((1+Z_Dis_Rate)^{12})$
 $gen\ Wolf_PV_MACRS_Yr14_C15 = (0.0590)/((1+Z_Dis_Rate)^{13})$
 $gen\ Wolf_PV_MACRS_Yr15_C15 = (0.0591)/((1+Z_Dis_Rate)^{14})$
 $gen\ Wolf_PV_MACRS_Yr16_C15 = (0.0295)/((1+Z_Dis_Rate)^{15})$
 $gen\ Wolf_Sum_MACRS_C15 =$
 $Wolf_PV_MACRS_Yr1_C15+Wolf_PV_MACRS_Yr2_C15+Wolf_PV_MACRS_Yr3_C15+Wolf_PV_MACRS_Yr4_C15+W$
 $olf_PV_MACRS_Yr5_C15+Wolf_PV_MACRS_Yr6_C15+Wolf_PV_MACRS_Yr7_C15+Wolf_PV_MACRS_Yr8_C15+Wolf$
 $_PV_MACRS_Yr9_C15+Wolf_PV_MACRS_Yr10_C15+Wolf_PV_MACRS_Yr11_C15+Wolf_PV_MACRS_Yr12_C15+Wol$
 $f_PV_MACRS_Yr13_C15+Wolf_PV_MACRS_Yr14_C15+Wolf_PV_MACRS_Yr15_C15+Wolf_PV_MACRS_Yr16_C15$
 $gen\ Z_Wolf_Yr0_C15=X_AccDep_Rate_C15$
 $gen\ Z_Wolf_Yr1_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr1_C15$
 $gen\ Z_Wolf_Yr2_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr2_C15$
 $gen\ Z_Wolf_Yr3_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr3_C15$
 $gen\ Z_Wolf_Yr4_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr4_C15$
 $gen\ Z_Wolf_Yr5_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr5_C15$
 $gen\ Z_Wolf_Yr6_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr6_C15$
 $gen\ Z_Wolf_Yr7_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr7_C15$
 $gen\ Z_Wolf_Yr8_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr8_C15$
 $gen\ Z_Wolf_Yr9_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr9_C15$
 $gen\ Z_Wolf_Yr10_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr10_C15$
 $gen\ Z_Wolf_Yr11_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr11_C15$
 $gen\ Z_Wolf_Yr12_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr12_C15$
 $gen\ Z_Wolf_Yr13_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr13_C15$
 $gen\ Z_Wolf_Yr14_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr14_C15$
 $gen\ Z_Wolf_Yr15_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr15_C15$
 $gen\ Z_Wolf_Yr16_C15= (1-X_AccDep_Rate_C15)*Wolf_PV_MACRS_Yr16_C15$
 gen
 $Z_SumWolf_C15=Z_Wolf_Yr0_C15+Z_Wolf_Yr1_C15+Z_Wolf_Yr2_C15+Z_Wolf_Yr3_C15+Z_Wolf_Yr4_C15+Z_Wolf$
 $_Yr5_C15+Z_Wolf_Yr6_C15+Z_Wolf_Yr7_C15+Z_Wolf_Yr8_C15+Z_Wolf_Yr9_C15+Z_Wolf_Yr10_C15+Z_Wolf_Yr11$
 $_C15+Z_Wolf_Yr12_C15+Z_Wolf_Yr13_C15+Z_Wolf_Yr14_C15+Z_Wolf_Yr15_C15+Z_Wolf_Yr16_C15$
 *browse Total_Y1_Ded_C10 MACRS_Yr2_C10 MACRS_Yr3_C10 MACRS_Yr4_C10
 *NPV C15 With Out Accelerated Depreciation

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gen Total_Y1_Ded_NoAccDep_C15= TotalInvestmentinClass15*.05
gen MACRS_Yr2_NoAccDep_C15= TotalInvestmentinClass15*.0950
gen MACRS_Yr3_NoAccDep_C15= TotalInvestmentinClass15*.0855
gen MACRS_Yr4_NoAccDep_C15= TotalInvestmentinClass15*.0770
gen MACRS_Yr5_NoAccDep_C15= TotalInvestmentinClass15*.0693
gen MACRS_Yr6_NoAccDep_C15= TotalInvestmentinClass15*.0623
gen MACRS_Yr7_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr8_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr9_NoAccDep_C15= TotalInvestmentinClass15*.0591
gen MACRS_Yr10_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr11_NoAccDep_C15= TotalInvestmentinClass15*.0591
gen MACRS_Yr12_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr13_NoAccDep_C15= TotalInvestmentinClass15*.0591
gen MACRS_Yr14_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr15_NoAccDep_C15= TotalInvestmentinClass15*.0590
gen MACRS_Yr16_NoAccDep_C15= TotalInvestmentinClass15*.0295
gen NPV_NoAccDep_C15= Total_Y1_Ded_NoAccDep_C15/1+ MACRS_Yr2_NoAccDep_C15/(1.08^1)+
MACRS_Yr3_NoAccDep_C15/(1.08^2)+ MACRS_Yr4_NoAccDep_C15/(1.08^3)+
MACRS_Yr5_NoAccDep_C15/(1.08^4)+ MACRS_Yr6_NoAccDep_C15/(1.08^5)+
MACRS_Yr7_NoAccDep_C15/(1.08^6)+ MACRS_Yr8_NoAccDep_C15/(1.08^7)+
MACRS_Yr9_NoAccDep_C15/(1.08^8)+ MACRS_Yr10_NoAccDep_C15/(1.08^9)+
MACRS_Yr11_NoAccDep_C15/(1.08^10)+ MACRS_Yr12_NoAccDep_C15/(1.08^11)+
MACRS_Yr13_NoAccDep_C15/(1.08^12)+ MACRS_Yr14_NoAccDep_C15/(1.08^13)+
MACRS_Yr15_NoAccDep_C15/(1.08^14)+ MACRS_Yr16_NoAccDep_C15/(1.08^15)
*NPV of Accelerated Depreciation ie: The difference
gen NPVofAccDep_C15=NPV_WithAccDep_C15-NPV_NoAccDep_C15
**NPV Class 20
*NPV C20 With Accelerated Depreciation
gen Basis_C20 = TotalInvestmentinClass20-TotalElectedCostofClass20-SpecialDeprecationonClass20
gen MACRS_Yr1_C20=Basis_C20*.03750
gen Total_Y1_Ded_WithAccDep_C20=TotalElectedCostofClass20+SpecialDeprecationonClass20+MACRS_Yr1_C20
gen MACRS_Yr2_WithAccDep_C20= Basis_C20*.07219
gen MACRS_Yr3_WithAccDep_C20= Basis_C20*.06677
gen MACRS_Yr4_WithAccDep_C20= Basis_C20*.06177
gen MACRS_Yr5_WithAccDep_C20= Basis_C20*.05713
gen MACRS_Yr6_WithAccDep_C20= Basis_C20*.05285
gen MACRS_Yr7_WithAccDep_C20= Basis_C20*.04888
gen MACRS_Yr8_WithAccDep_C20= Basis_C20*.04522
gen MACRS_Yr9_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr10_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr11_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr12_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr13_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr14_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr15_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr16_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr17_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr18_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr19_WithAccDep_C20= Basis_C20*.04462
gen MACRS_Yr20_WithAccDep_C20= Basis_C20*.04461
gen MACRS_Yr21_WithAccDep_C20= Basis_C20*.02231

```

$$\text{gen NPV_WithAccDep_C20} = \text{Total_Y1_Ded_WithAccDep_C20}/1 + \text{MACRS_Yr2_WithAccDep_C20}/(1.08^1) +$$

$$\text{MACRS_Yr3_WithAccDep_C20}/(1.08^2) + \text{MACRS_Yr4_WithAccDep_C20}/(1.08^3) +$$

$$\text{MACRS_Yr5_WithAccDep_C20}/(1.08^4) + \text{MACRS_Yr6_WithAccDep_C20}/(1.08^5) +$$

$$\text{MACRS_Yr7_WithAccDep_C20}/(1.08^6) +$$

$$\text{MACRS_Yr8_WithAccDep_C20}/(1.08^7) + \text{MACRS_Yr9_WithAccDep_C20}/(1.08^8) +$$

$$\text{MACRS_Yr10_WithAccDep_C20}/(1.08^9) + \text{MACRS_Yr11_WithAccDep_C20}/(1.08^{10}) +$$

$$\text{MACRS_Yr12_WithAccDep_C20}/(1.08^{11}) + \text{MACRS_Yr13_WithAccDep_C20}/(1.08^{12}) +$$

$$\text{MACRS_Yr14_WithAccDep_C20}/(1.08^{13}) + \text{MACRS_Yr15_WithAccDep_C20}/(1.08^{14}) +$$

$$\text{MACRS_Yr16_WithAccDep_C20}/(1.08^{15}) + \text{MACRS_Yr17_WithAccDep_C20}/(1.08^{16}) +$$

$$\text{MACRS_Yr18_WithAccDep_C20}/(1.08^{17}) + \text{MACRS_Yr19_WithAccDep_C20}/(1.08^{18}) +$$

$$\text{MACRS_Yr20_WithAccDep_C20}/(1.08^{19}) + \text{MACRS_Yr21_WithAccDep_C20}/(1.08^{20})$$

$$\text{gen X_AccDep_Rate_C20} = (\text{TotalElectedCostofClass20} + \text{SpecialDeprecationonClass20}) / \text{TotalInvestmentinClass20}$$

$$\text{gen Wolf_PV_MACRS_Yr1_C20} = (0.03750)/1$$

$$\text{gen Wolf_PV_MACRS_Yr2_C20} = (0.07219)/((1 + \text{Z_Dis_Rate})^1)$$

$$\text{gen Wolf_PV_MACRS_Yr3_C20} = (0.06677)/((1 + \text{Z_Dis_Rate})^2)$$

$$\text{gen Wolf_PV_MACRS_Yr4_C20} = (0.06177)/((1 + \text{Z_Dis_Rate})^3)$$

$$\text{gen Wolf_PV_MACRS_Yr5_C20} = (0.05713)/((1 + \text{Z_Dis_Rate})^4)$$

$$\text{gen Wolf_PV_MACRS_Yr6_C20} = (0.05285)/((1 + \text{Z_Dis_Rate})^5)$$

$$\text{gen Wolf_PV_MACRS_Yr7_C20} = (0.04888)/((1 + \text{Z_Dis_Rate})^6)$$

$$\text{gen Wolf_PV_MACRS_Yr8_C20} = (0.04522)/((1 + \text{Z_Dis_Rate})^7)$$

$$\text{gen Wolf_PV_MACRS_Yr9_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^8)$$

$$\text{gen Wolf_PV_MACRS_Yr10_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^9)$$

$$\text{gen Wolf_PV_MACRS_Yr11_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^{10})$$

$$\text{gen Wolf_PV_MACRS_Yr12_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^{11})$$

$$\text{gen Wolf_PV_MACRS_Yr13_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^{12})$$

$$\text{gen Wolf_PV_MACRS_Yr14_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^{13})$$

$$\text{gen Wolf_PV_MACRS_Yr15_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^{14})$$

$$\text{gen Wolf_PV_MACRS_Yr16_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^{15})$$

$$\text{gen Wolf_PV_MACRS_Yr17_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^{16})$$

$$\text{gen Wolf_PV_MACRS_Yr18_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^{17})$$

$$\text{gen Wolf_PV_MACRS_Yr19_C20} = (0.04462)/((1 + \text{Z_Dis_Rate})^{18})$$

$$\text{gen Wolf_PV_MACRS_Yr20_C20} = (0.04461)/((1 + \text{Z_Dis_Rate})^{19})$$

$$\text{gen Wolf_PV_MACRS_Yr21_C20} = (0.02231)/((1 + \text{Z_Dis_Rate})^{20})$$

$$\text{gen Wolf_Sum_MACRS_C20} =$$

$$\text{Wolf_PV_MACRS_Yr1_C20} + \text{Wolf_PV_MACRS_Yr2_C20} + \text{Wolf_PV_MACRS_Yr3_C20} + \text{Wolf_PV_MACRS_Yr4_C20} +$$

$$\text{Wolf_PV_MACRS_Yr5_C20} + \text{Wolf_PV_MACRS_Yr6_C20} + \text{Wolf_PV_MACRS_Yr7_C20} + \text{Wolf_PV_MACRS_Yr8_C20} +$$

$$\text{Wolf_PV_MACRS_Yr9_C20} + \text{Wolf_PV_MACRS_Yr10_C20} + \text{Wolf_PV_MACRS_Yr11_C20} + \text{Wolf_PV_MACRS_Yr12_C20} +$$

$$\text{Wolf_PV_MACRS_Yr13_C20} + \text{Wolf_PV_MACRS_Yr14_C20} + \text{Wolf_PV_MACRS_Yr15_C20} + \text{Wolf_PV_MACRS_Yr16_C20} +$$

$$\text{Wolf_PV_MACRS_Yr17_C20} + \text{Wolf_PV_MACRS_Yr18_C20} + \text{Wolf_PV_MACRS_Yr19_C20} + \text{Wolf_PV_MACRS_Yr20_C20} +$$

$$\text{Wolf_PV_MACRS_Yr21_C20}$$

$$\text{gen Z_Wolf_Yr0_C20} = \text{X_AccDep_Rate_C20}$$

$$\text{gen Z_Wolf_Yr1_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr1_C20}$$

$$\text{gen Z_Wolf_Yr2_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr2_C20}$$

$$\text{gen Z_Wolf_Yr3_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr3_C20}$$

$$\text{gen Z_Wolf_Yr4_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr4_C20}$$

$$\text{gen Z_Wolf_Yr5_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr5_C20}$$

$$\text{gen Z_Wolf_Yr6_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr6_C20}$$

$$\text{gen Z_Wolf_Yr7_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr7_C20}$$

$$\text{gen Z_Wolf_Yr8_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr8_C20}$$

$$\text{gen Z_Wolf_Yr9_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr9_C20}$$

$$\text{gen Z_Wolf_Yr10_C20} = (1 - \text{X_AccDep_Rate_C20}) * \text{Wolf_PV_MACRS_Yr10_C20}$$

```

gen Z_Wolf_Yr11_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr11_C20
gen Z_Wolf_Yr12_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr12_C20
gen Z_Wolf_Yr13_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr13_C20
gen Z_Wolf_Yr14_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr14_C20
gen Z_Wolf_Yr15_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr15_C20
gen Z_Wolf_Yr16_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr16_C20
gen Z_Wolf_Yr17_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr17_C20
gen Z_Wolf_Yr18_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr18_C20
gen Z_Wolf_Yr19_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr19_C20
gen Z_Wolf_Yr20_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr20_C20
gen Z_Wolf_Yr21_C20= (1-X_AccDep_Rate_C20)*Wolf_PV_MACRS_Yr21_C20
gen
Z_SumWolf_C20=Z_Wolf_Yr0_C20+Z_Wolf_Yr1_C20+Z_Wolf_Yr2_C20+Z_Wolf_Yr3_C20+Z_Wolf_Yr4_C20+Z_Wolf
_Yr5_C20+Z_Wolf_Yr6_C20+Z_Wolf_Yr7_C20+Z_Wolf_Yr8_C20+Z_Wolf_Yr9_C20+Z_Wolf_Yr10_C20+Z_Wolf_Yr11
_C20+Z_Wolf_Yr12_C20+Z_Wolf_Yr13_C20+Z_Wolf_Yr14_C20+Z_Wolf_Yr15_C20+Z_Wolf_Yr16_C20+Z_Wolf_Yr1
7_C20+Z_Wolf_Yr18_C20+Z_Wolf_Yr19_C20+Z_Wolf_Yr20_C20+Z_Wolf_Yr21_C20
*browse Total_Y1_Ded_C10 MACRS_Yr2_C10 MACRS_Yr3_C10 MACRS_Yr4_C10
*NPV C20 With Out Accelerated Depreciation
gen Total_Y1_Ded_NoAccDep_C20= TotalInvestmentinClass20*.03750
gen MACRS_Yr2_NoAccDep_C20= TotalInvestmentinClass20*.07219
gen MACRS_Yr3_NoAccDep_C20= TotalInvestmentinClass20*.06677
gen MACRS_Yr4_NoAccDep_C20= TotalInvestmentinClass20*.06177
gen MACRS_Yr5_NoAccDep_C20= TotalInvestmentinClass20*.05713
gen MACRS_Yr6_NoAccDep_C20= TotalInvestmentinClass20*.05285
gen MACRS_Yr7_NoAccDep_C20= TotalInvestmentinClass20*.04888
gen MACRS_Yr8_NoAccDep_C20= TotalInvestmentinClass20*.04522
gen MACRS_Yr9_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr10_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr11_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr12_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr13_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr14_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr15_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr16_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr17_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr18_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr19_NoAccDep_C20= TotalInvestmentinClass20*.04462
gen MACRS_Yr20_NoAccDep_C20= TotalInvestmentinClass20*.04461
gen MACRS_Yr21_NoAccDep_C20= TotalInvestmentinClass20*.02231
gen NPV_NoAccDep_C20= Total_Y1_Ded_NoAccDep_C20/1+ MACRS_Yr2_NoAccDep_C20/(1.08^1)+
MACRS_Yr3_NoAccDep_C20/(1.08^2)+ MACRS_Yr4_NoAccDep_C20/(1.08^3)+
MACRS_Yr5_NoAccDep_C20/(1.08^4)+ MACRS_Yr6_NoAccDep_C20/(1.08^5)+
MACRS_Yr7_NoAccDep_C20/(1.08^6)+ MACRS_Yr8_NoAccDep_C20/(1.08^7)+
MACRS_Yr9_NoAccDep_C20/(1.08^8)+ MACRS_Yr10_NoAccDep_C20/(1.08^9)+
MACRS_Yr11_NoAccDep_C20/(1.08^10)+ MACRS_Yr12_NoAccDep_C20/(1.08^11)+
MACRS_Yr13_NoAccDep_C20/(1.08^12)+ MACRS_Yr14_NoAccDep_C20/(1.08^13)+
MACRS_Yr15_NoAccDep_C20/(1.08^14)+ MACRS_Yr16_NoAccDep_C20/(1.08^15)+
MACRS_Yr17_NoAccDep_C20/(1.08^16)+ MACRS_Yr18_NoAccDep_C20/(1.08^17)+
MACRS_Yr19_NoAccDep_C20/(1.08^18)+ MACRS_Yr20_NoAccDep_C20/(1.08^19)+
MACRS_Yr21_NoAccDep_C20/(1.08^20)
*NPV of Accelerated Depreciation ie: The difference

```

```

gen NPVofAccDep_C20=NPV_WithAccDep_C20-NPV_NoAccDep_C20
Wolf_PV_MACRS_Yr1_C27+Wolf_PV_MACRS_Yr2_C27+Wolf_PV_MACRS_Yr3_C27+Wolf_PV_MACRS_Yr4_C27+W
olf_PV_MACRS_Yr5_C27+Wolf_PV_MACRS_Yr6_C27+Wolf_PV_MACRS_Yr7_C27+Wolf_PV_MACRS_Yr8_C27+Wolf
_PV_MACRS_Yr9_C27+Wolf_PV_MACRS_Yr10_C27+Wolf_PV_MACRS_Yr11_C27+Wolf_PV_MACRS_Yr12_C27+Wol
f_PV_MACRS_Yr13_C27+Wolf_PV_MACRS_Yr14_C27+Wolf_PV_MACRS_Yr15_C27+Wolf_PV_MACRS_Yr16_C27+
Wolf_PV_MACRS_Yr17_C27+Wolf_PV_MACRS_Yr18_C27+Wolf_PV_MACRS_Yr19_C27+Wolf_PV_MACRS_Yr20_C2
7+Wolf_PV_MACRS_Yr21_C27+Wolf_PV_MACRS_Yr22_C27+Wolf_PV_MACRS_Yr23_C27+Wolf_PV_MACRS_Yr24_
C27+Wolf_PV_MACRS_Yr25_C27+Wolf_PV_MACRS_Yr26_C27+Wolf_PV_MACRS_Yr27_C27+Wolf_PV_MACRS_Yr2
8_C27

```

Farm Types

*tab EndFarmType, gen (Farm)

gen FarmCrop=1 if EndFarmType=="Crop"|EndFarmType=="Crops"

gen FarmDairy=1 if EndFarmType=="Dairy"|EndFarmType=="Dairy "

gen FarmDiversified=1 if EndFarmType=="Beef"|EndFarmType=="Custom

Work"|EndFarmType=="Hog"|EndFarmType=="Orchard"|EndFarmType=="Vegetables"

replace FarmCrop=0 if FarmDairy==1|FarmDiversified==1

replace FarmDairy=0 if FarmCrop==1| FarmDiversified==1

replace FarmDiversified=0 if FarmCrop==1| FarmDairy==1

replace FarmCrop = 0 if FarmCrop==.

replace FarmDiversified = 0 if FarmDiversified==.

replace FarmDairy = 1 if FarmDairy==.

***** Re-Ordering and Renaming Variables To make it easier*****

**Re-Ordering

```

order FarmID Year BusinessID FarmCrop FarmDairy FarmDiversified EndFarmType BegFarmType AcresOperated
FamilyLiving GrossFarmIncome FarmTypeCashFarmIncomeSect InterestExpense LandRentExpense
MachineryLease TotalCashFarmExpense Netoperatingprofit CashandChecking Prepaidexpensesandsupplies
AccountsRecieveable Totalcurrentliabilities Intermediateloans Longtermloans Network
TotalNewInvestmentPaidto TotalInvestmentinClass3 TotalInvestmentinClass5 TotalInvestmentinClass7
TotalInvestmentinClass10 TotalInvestmentinClass15 TotalInvestmentinClass20 TotalInvestmentinClass275
TotalInvestmentinClass0sto Costof179PropertyTotalamou Costof179PropertyClass3 Costof179PropertyClass5
Costof179PropertyClass7 Costof179PropertyClass10 Costof179PropertyClass15 Costof179PropertyClass20
Costof179PropertyClass275 TotalElectedCostSec179Amo TotalElectedCostforClass3 TotalElectedCostforClass5
TotalElectedCostforClass7 TotalElectedCostforClass10 TotalElectedCostofClass15 TotalElectedCostofClass20
TotalElectedCostofClass275 MaxInvestmentLimitforSec179 ReductionfromInvestmentlimit
Max179ExpenseLimitationfor TentativeDeductionForm4562 TentativeDeductionForm4562
SpecialDepreciationAllowanceT SpecialDepreciationonClass3 SpecialDepreciationonClass5
SpecialDepreciationonClass7 SpecialDepreciationonClass10 SpecialDepreciationonClass15
SpecialDepreciationonClass20 SpecialDepreciationonClass275 OtherDepreciationIncludingAC
MACRSDeductionsforassetsplac MACRSDeductionforcurrentyear FinanMACRS_CrYr_C3 FinanMACRS_CrYr_C5
FinanMACRS_CrYr_C7 FinanMACRS_CrYr_C10 FinanMACRS_CrYr_C15 FinanMACRS_CrYr_20
FinanMACRS_CrYr_275 ListedPropertyForm4562Par TotalDeductionForm4562Par NPV_NoAccDep_C3
NPV_WithAccDep_C3 NPVofAccDep_C3 NPV_WithAccDep_C5 NPV_NoAccDep_C5 NPVofAccDep_C5
NPV_WithAccDep_C7 NPV_NoAccDep_C7 NPVofAccDep_C7 NPV_WithAccDep_C10 NPV_NoAccDep_C10
NPVofAccDep_C10 NPV_WithAccDep_C15 NPV_NoAccDep_C15 NPVofAccDep_C15 NPV_WithAccDep_C20
NPV_NoAccDep_C20 NPVofAccDep_C20 NPV_WithAccDep_C27 NPV_NoAccDep_C27 NPVofAccDep_C27
TotalNPVofAccDep Basis_C3 MACRS_Yr1_C3 Total_Y1_Ded_WithAccDep_C3 MACRS_Yr2_WithAccDep_C3
MACRS_Yr3_WithAccDep_C3 MACRS_Yr4_WithAccDep_C3 Total_Y1_Ded_NoAccDep_C3
MACRS_Yr2_NoAccDep_C3 MACRS_Yr3_NoAccDep_C3 MACRS_Yr4_NoAccDep_C3 Basis_C5 MACRS_Yr1_C5
Total_Y1_Ded_WithAccDep_C5 MACRS_Yr2_WithAccDep_C5 MACRS_Yr3_WithAccDep_C5
MACRS_Yr4_WithAccDep_C5 MACRS_Yr5_WithAccDep_C5 MACRS_Yr6_WithAccDep_C5

```

Total_Y1_Ded_NoAccDep_C5 MACRS_Yr2_NoAccDep_C5 MACRS_Yr3_NoAccDep_C5 MACRS_Yr4_NoAccDep_C5
 MACRS_Yr5_NoAccDep_C5 MACRS_Yr6_NoAccDep_C5 Basis_C7 MACRS_Yr1_C7 Total_Y1_Ded_WithAccDep_C7
 MACRS_Yr2_WithAccDep_C7 MACRS_Yr3_WithAccDep_C7 MACRS_Yr4_WithAccDep_C7
 MACRS_Yr5_WithAccDep_C7 MACRS_Yr6_WithAccDep_C7 MACRS_Yr7_WithAccDep_C7
 MACRS_Yr8_WithAccDep_C7 Total_Y1_Ded_NoAccDep_C7 MACRS_Yr2_NoAccDep_C7 MACRS_Yr3_NoAccDep_C7
 MACRS_Yr4_NoAccDep_C7 MACRS_Yr5_NoAccDep_C7 MACRS_Yr6_NoAccDep_C7 MACRS_Yr7_NoAccDep_C7
 MACRS_Yr8_NoAccDep_C7 Basis_C10 MACRS_Yr1_C10 Total_Y1_Ded_WithAccDep_C10
 MACRS_Yr2_WithAccDep_C10 MACRS_Yr3_WithAccDep_C10 MACRS_Yr4_WithAccDep_C10
 MACRS_Yr5_WithAccDep_C10 MACRS_Yr6_WithAccDep_C10 MACRS_Yr7_WithAccDep_C10
 MACRS_Yr8_WithAccDep_C10 MACRS_Yr9_WithAccDep_C10 MACRS_Yr10_WithAccDep_C10
 MACRS_Yr11_WithAccDep_C10 Total_Y1_Ded_NoAccDep_C10 MACRS_Yr2_NoAccDep_C10
 MACRS_Yr3_NoAccDep_C10 MACRS_Yr4_NoAccDep_C10 MACRS_Yr5_NoAccDep_C10
 MACRS_Yr6_NoAccDep_C10 MACRS_Yr7_NoAccDep_C10 MACRS_Yr8_NoAccDep_C10
 MACRS_Yr9_NoAccDep_C10 MACRS_Yr10_NoAccDep_C10 MACRS_Yr11_NoAccDep_C10 Basis_C15
 MACRS_Yr1_C15 Total_Y1_Ded_WithAccDep_C15 MACRS_Yr2_WithAccDep_C15 MACRS_Yr3_WithAccDep_C15
 MACRS_Yr4_WithAccDep_C15 MACRS_Yr5_WithAccDep_C15 MACRS_Yr6_WithAccDep_C15
 MACRS_Yr7_WithAccDep_C15 MACRS_Yr8_WithAccDep_C15 MACRS_Yr9_WithAccDep_C15
 MACRS_Yr10_WithAccDep_C15 MACRS_Yr11_WithAccDep_C15 MACRS_Yr12_WithAccDep_C15
 MACRS_Yr13_WithAccDep_C15 MACRS_Yr14_WithAccDep_C15 MACRS_Yr15_WithAccDep_C15
 MACRS_Yr16_WithAccDep_C15 Total_Y1_Ded_NoAccDep_C15 MACRS_Yr2_NoAccDep_C15
 MACRS_Yr3_NoAccDep_C15 MACRS_Yr4_NoAccDep_C15 MACRS_Yr5_NoAccDep_C15
 MACRS_Yr6_NoAccDep_C15 MACRS_Yr7_NoAccDep_C15 MACRS_Yr8_NoAccDep_C15
 MACRS_Yr9_NoAccDep_C15 MACRS_Yr10_NoAccDep_C15 MACRS_Yr11_NoAccDep_C15
 MACRS_Yr12_NoAccDep_C15 MACRS_Yr13_NoAccDep_C15 MACRS_Yr14_NoAccDep_C15
 MACRS_Yr15_NoAccDep_C15 MACRS_Yr16_NoAccDep_C15 Basis_C20 MACRS_Yr1_C20
 Total_Y1_Ded_WithAccDep_C20 MACRS_Yr2_WithAccDep_C20 MACRS_Yr3_WithAccDep_C20
 MACRS_Yr4_WithAccDep_C20 MACRS_Yr5_WithAccDep_C20 MACRS_Yr6_WithAccDep_C20
 MACRS_Yr7_WithAccDep_C20 MACRS_Yr8_WithAccDep_C20 MACRS_Yr9_WithAccDep_C20
 MACRS_Yr10_WithAccDep_C20 MACRS_Yr11_WithAccDep_C20 MACRS_Yr12_WithAccDep_C20
 MACRS_Yr13_WithAccDep_C20 MACRS_Yr14_WithAccDep_C20 MACRS_Yr15_WithAccDep_C20
 MACRS_Yr16_WithAccDep_C20 MACRS_Yr17_WithAccDep_C20 MACRS_Yr18_WithAccDep_C20
 MACRS_Yr19_WithAccDep_C20 MACRS_Yr20_WithAccDep_C20 MACRS_Yr21_WithAccDep_C20
 Total_Y1_Ded_NoAccDep_C20 MACRS_Yr2_NoAccDep_C20 MACRS_Yr3_NoAccDep_C20
 MACRS_Yr4_NoAccDep_C20 MACRS_Yr5_NoAccDep_C20 MACRS_Yr6_NoAccDep_C20
 MACRS_Yr7_NoAccDep_C20 MACRS_Yr8_NoAccDep_C20 MACRS_Yr9_NoAccDep_C20
 MACRS_Yr10_NoAccDep_C20 MACRS_Yr11_NoAccDep_C20 MACRS_Yr12_NoAccDep_C20
 MACRS_Yr13_NoAccDep_C20 MACRS_Yr14_NoAccDep_C20 MACRS_Yr15_NoAccDep_C20
 MACRS_Yr16_NoAccDep_C20 MACRS_Yr17_NoAccDep_C20 MACRS_Yr18_NoAccDep_C20
 MACRS_Yr19_NoAccDep_C20 MACRS_Yr20_NoAccDep_C20 MACRS_Yr21_NoAccDep_C20 Basis_C27
 MACRS_Yr1_C27 Total_Y1_Ded_WithAccDep_C27 MACRS_Yr2_WithAccDep_C27 MACRS_Yr3_WithAccDep_C27
 MACRS_Yr4_WithAccDep_C27 MACRS_Yr5_WithAccDep_C27 MACRS_Yr6_WithAccDep_C27
 MACRS_Yr7_WithAccDep_C27 MACRS_Yr8_WithAccDep_C27 MACRS_Yr9_WithAccDep_C27
 MACRS_Yr10_WithAccDep_C27 MACRS_Yr11_WithAccDep_C27 MACRS_Yr12_WithAccDep_C27
 MACRS_Yr13_WithAccDep_C27 MACRS_Yr14_WithAccDep_C27 MACRS_Yr15_WithAccDep_C27
 MACRS_Yr16_WithAccDep_C27 MACRS_Yr17_WithAccDep_C27 MACRS_Yr18_WithAccDep_C27
 MACRS_Yr19_WithAccDep_C27 MACRS_Yr20_WithAccDep_C27 MACRS_Yr21_WithAccDep_C27
 MACRS_Yr22_WithAccDep_C27 MACRS_Yr23_WithAccDep_C27 MACRS_Yr24_WithAccDep_C27
 MACRS_Yr25_WithAccDep_C27 MACRS_Yr26_WithAccDep_C27 MACRS_Yr27_WithAccDep_C27
 MACRS_Yr28_WithAccDep_C27 Total_Y1_Ded_NoAccDep_C27 MACRS_Yr2_NoAccDep_C27
 MACRS_Yr3_NoAccDep_C27 MACRS_Yr4_NoAccDep_C27 MACRS_Yr5_NoAccDep_C27
 MACRS_Yr6_NoAccDep_C27 MACRS_Yr7_NoAccDep_C27 MACRS_Yr8_NoAccDep_C27

MACRS_Yr9_NoAccDep_C27 MACRS_Yr10_NoAccDep_C27 MACRS_Yr11_NoAccDep_C27
 MACRS_Yr12_NoAccDep_C27 MACRS_Yr13_NoAccDep_C27 MACRS_Yr14_NoAccDep_C27
 MACRS_Yr15_NoAccDep_C27 MACRS_Yr16_NoAccDep_C27 MACRS_Yr17_NoAccDep_C27
 MACRS_Yr18_NoAccDep_C27 MACRS_Yr19_NoAccDep_C27 MACRS_Yr20_NoAccDep_C27
 MACRS_Yr21_NoAccDep_C27 MACRS_Yr22_NoAccDep_C27 MACRS_Yr23_NoAccDep_C27
 MACRS_Yr24_NoAccDep_C27 MACRS_Yr25_NoAccDep_C27 MACRS_Yr26_NoAccDep_C27
 MACRS_Yr27_NoAccDep_C27 MACRS_Yr28_NoAccDep_C27 Old_TotalInvestmentinClass275
 Old_TotalInvestmentinClass315 Old_Costof179PropertyClass275 Old_Costof179PropertyClass315
 Old_TotalElectedCostofClass275 Old_TotalElectedCostofClass315 Old_SpecialDepreciationonClass27
 Old_SpecialDepreciationonClass315Old_FinanMACRS_CrYr_275Old_FinanMACRS_CrYr_315
 ***** Rename*****
 rename FamilyLiving FamLiving
 rename FarmTypeCashFarmIncomeSect FarmType
 rename InterestExpense IntExp
 rename LandRentExpense LandRentExp
 rename MachineryLease MachLease
 rename TotalCashFarmExpense TotCashExp
 rename Netoperatingprofit NOP
 rename AcresOperated Acres
 rename CashandChecking Cash_Checking
 rename Prepaidexpensesandsupplies Prepaid_Exp
 rename AccountsRecieveable Accts_Rec
 rename Totalcurrentliabilities Cur_Liab
 rename Intermediateloans Int_Liab
 rename Longtermloans LongTerm_Liab
 rename TotalNewInvestmentPaidto Tot_New_Invest
 rename TotalInvestmentinClass3 Tot_Inv_C3
 rename TotalInvestmentinClass5 Tot_Inv_C5
 rename TotalInvestmentinClass7 Tot_Inv_C7
 rename TotalInvestmentinClass10 Tot_Inv_C10
 rename TotalInvestmentinClass15 Tot_Inv_C15
 rename TotalInvestmentinClass20 Tot_Inv_C20
 rename TotalInvestmentinClass0Sto Tot_Inv_C0
 rename Costof179PropertyTotalamou Tot_Amt_EligibleFor179
 rename Costof179PropertyClass3 Amt_EligibleFor179_C3
 rename Costof179PropertyClass5 Amt_EligibleFor179_C5
 rename Costof179PropertyClass7 Amt_EligibleFor179_C7
 rename Costof179PropertyClass10 Amt_EligibleFor179_C10
 rename Costof179PropertyClass15 Amt_EligibleFor179_C15
 rename Costof179PropertyClass20 Amt_EligibleFor179_C20
 rename Costof179PropertyClass275 Amt_EligibleFor179_C275
 rename TotalElectedCostSec179Amo Tot_179
 rename TotalElectedCostforClass3 Amt_179_C3
 rename TotalElectedCostforClass5 Amt_179_C5
 rename TotalElectedCostforClass7 Amt_179_C7
 rename TotalElectedCostforClass10 Amt_179_C10
 rename TotalElectedCostofClass15 Amt_179_C15
 rename TotalElectedCostofClass20 Amt_179_C20
 rename TotalElectedCostofClass275 Amt_179_C275
 rename MaxInvestmentLimitforSec179 Max179_Invest_Limit
 rename ReductionfromInvestmentlimit Reduc179_dueto_High_Invest

```

rename Max179ExpenseLimitationfor Max179_Expense_Limit
rename TentativeDeductionForm4562 Amt_179_AfterLimit_Adjust
rename SpecialDepreciationAllowanceT Bonus_Total
rename SpecialDepreciationonClass3 Bonus_C3
rename SpecialDepreciationonClass5 Bonus_C5
rename SpecialDepreciationonClass7 Bonus_C7
rename SpecialDepreciationonClass10 Bonus_C10
rename SpecialDepreciationonClass15 Bonus_C15
rename SpecialDepreciationonClass20 Bonus_C20
rename SpecialDepreciationonClass275 Bonus_C275
rename OtherDepreciationIncludingAC ACRS_Dep
rename MACRSDeductionsforassetsplac FinanMACRS_Bf_CrYr_Tot
rename MACRSDeductionforcurrentyear FinanMACRS_CrYr_Tot
rename ListedPropertyForm4562Par Listed_Prop
rename TotalDeductionForm4562Par Tot_Depr_Deduction
rename TotalInvestmentinClass275 Tot_Inv_C275
destring Amt_179_AfterLimit_Adjust, replace
destring Reduc179_dueto_High_Invest, replace
*****Summary Stats*****
***Seeing if it is a complete panel***
**Counting number of Farm ID's** (67 Farms)
by FarmID, sort: gen nFarmID= _n==1
count if nFarmID>0
*or
sum FarmID if FarmCrop==1
sum FarmID if FarmDairy ==1
sum FarmID if FarmDiversified ==1
**Number of Observations** (1,572)***
tab FarmID
*****
*Counts Number of Observations
bysort FarmID: egen ctyear=count(FarmID)
tab ctyear
*Counts how many farms have all thier yrs of info
preserve
collapse (first)ctyear FarmCrop FarmDairy FarmDiversified, by(FarmID)
tab ctyear
tab ctyear if FarmCrop, m
tab ctyear if FarmDairy, m
tab ctyear if FarmDiversified, m
restore
*****
***Table for number of observations per FarmID by Business ID (Figuring out how many Yrs Business ID's have)
***
preserve
bysort FarmID BusinessID: keep if _n==1
tab FarmID BusinessID
restore
drop nFarmID ctyear

```

```

**Summary Stats on NPV's
tab TotalNPVofAccDep if FarmCrop
*histogram TotalNPVofAccDep if FarmCrop, bin(15) percent normal ytitle(Percent) xtitle(NPV Amount) xlabel(#8)
title(NPV By Farms) subtitle(Crop) legend(on)
tab TotalNPVofAccDep if FarmCrop
tab TotalNPVofAccDep if FarmDairy
tab FarmDiversified
summarize NPVofAccDep_C3 NPVofAccDep_C5 NPVofAccDep_C7 NPVofAccDep_C10 NPVofAccDep_C15
NPVofAccDep_C20 NPVofAccDep_C27 TotalNPVofAccDep
*****Making NPV Conditional on taking Accelerated Depreciation***
**Create a dummy for using Acc Dep use By Class....
gen DM_NPVofAccDep_C3=.
replace DM_NPVofAccDep_C3=1 if Amt_179_C3+Bonus_C3>0
replace DM_NPVofAccDep_C3=0 if Amt_179_C3+Bonus_C3==0
gen DM_NPVofAccDep_C5=.
replace DM_NPVofAccDep_C5=1 if Amt_179_C5+Bonus_C5>0
replace DM_NPVofAccDep_C5=0 if Amt_179_C5+Bonus_C5==0
gen DM_NPVofAccDep_C7=.
replace DM_NPVofAccDep_C7=1 if Amt_179_C7+Bonus_C7>0
replace DM_NPVofAccDep_C7=0 if Amt_179_C7+Bonus_C7==0
gen DM_NPVofAccDep_C10=.
replace DM_NPVofAccDep_C10=1 if Amt_179_C10+Bonus_C10>0
replace DM_NPVofAccDep_C10=0 if Amt_179_C10+Bonus_C10==0
gen DM_NPVofAccDep_C15=.
replace DM_NPVofAccDep_C15=1 if Amt_179_C15+Bonus_C15>0
replace DM_NPVofAccDep_C15=0 if Amt_179_C15+Bonus_C15==0
gen DM_NPVofAccDep_C20=.
replace DM_NPVofAccDep_C20=1 if Amt_179_C20+Bonus_C20>0
replace DM_NPVofAccDep_C20=0 if Amt_179_C20+Bonus_C20==0
gen DM_NPVofAccDep_C27=.
replace DM_NPVofAccDep_C27=1 if Amt_179_C27+Bonus_C27>0
replace DM_NPVofAccDep_C27=0 if Amt_179_C27+Bonus_C27==0
**Create a dummy for using 179 Dep use By Class....
gen DM_179_NPVofAccDep_C3=.
replace DM_179_NPVofAccDep_C3=1 if Amt_179_C3>0
replace DM_179_NPVofAccDep_C3=0 if Amt_179_C3==0
gen DM_179_NPVofAccDep_C5=.
replace DM_179_NPVofAccDep_C5=1 if Amt_179_C5>0
replace DM_179_NPVofAccDep_C5=0 if Amt_179_C5==0
gen DM_179_NPVofAccDep_C7=.
replace DM_179_NPVofAccDep_C7=1 if Amt_179_C7>0
replace DM_179_NPVofAccDep_C7=0 if Amt_179_C7==0
gen DM_179_NPVofAccDep_C10=.
replace DM_179_NPVofAccDep_C10=1 if Amt_179_C10>0
replace DM_179_NPVofAccDep_C10=0 if Amt_179_C10==0
gen DM_179_NPVofAccDep_C15=.
replace DM_179_NPVofAccDep_C15=1 if Amt_179_C15>0
replace DM_179_NPVofAccDep_C15=0 if Amt_179_C15==0
gen DM_179_NPVofAccDep_C20=.
replace DM_179_NPVofAccDep_C20=1 if Amt_179_C20>0
replace DM_179_NPVofAccDep_C20=0 if Amt_179_C20==0

```

```

gen DM_179_NPVofAccDep_C27=.
replace DM_179_NPVofAccDep_C27=1 if Amt_179_C27>0
replace DM_179_NPVofAccDep_C27=0 if Amt_179_C27==0
**Create a dummy for using Bonus Dep use By Class...
gen DM_Bonus_NPVofAccDep_C3=.
replace DM_Bonus_NPVofAccDep_C3=1 if Bonus_C3>0
replace DM_Bonus_NPVofAccDep_C3=0 if Bonus_C3==0
gen DM_Bonus_NPVofAccDep_C5=.
replace DM_Bonus_NPVofAccDep_C5=1 if Bonus_C5>0
replace DM_Bonus_NPVofAccDep_C5=0 if Bonus_C5==0
gen DM_Bonus_NPVofAccDep_C7=.
replace DM_Bonus_NPVofAccDep_C7=1 if Bonus_C7>0
replace DM_Bonus_NPVofAccDep_C7=0 if Bonus_C7==0
gen DM_Bonus_NPVofAccDep_C10=.
replace DM_Bonus_NPVofAccDep_C10=1 if Bonus_C10>0
replace DM_Bonus_NPVofAccDep_C10=0 if Bonus_C10==0
gen DM_Bonus_NPVofAccDep_C15=.
replace DM_Bonus_NPVofAccDep_C15=1 if Bonus_C15>0
replace DM_Bonus_NPVofAccDep_C15=0 if Bonus_C15==0
gen DM_Bonus_NPVofAccDep_C20=.
replace DM_Bonus_NPVofAccDep_C20=1 if Bonus_C20>0
replace DM_Bonus_NPVofAccDep_C20=0 if Bonus_C20==0
gen DM_Bonus_NPVofAccDep_C27=.
replace DM_Bonus_NPVofAccDep_C27=1 if Bonus_C27>0
replace DM_Bonus_NPVofAccDep_C27=0 if Bonus_C27==0
**Creating dummy for total 179, Bonus and Acc Dep***
gen DM_179Use=.
replace DM_179Use=1 if Amt_179_AfterLimit_Adjust>0
replace DM_179Use=0 if Amt_179_AfterLimit_Adjust<1
gen DM_BonusUse=.
replace DM_BonusUse=1 if Bonus_Total>0
replace DM_BonusUse=0 if Bonus_Total<1
gen DM_AccDepUse=.
replace DM_AccDepUse=1 if DM_179Use==1
replace DM_AccDepUse=1 if DM_BonusUse==1
replace DM_AccDepUse=0 if DM_AccDepUse==.
count if DM_AccDepUse==1
*358 Observations
count if DM_179Use==1
*343 Observations
count if DM_BonusUse==1
*45 Observations
count if DM_179Use==1 & DM_BonusUse==1
*30 Observations
*Tells me that there are no NPV's with negative values if Accelerated Depreciation was used. Lowest value was
$30.09.
tab TotalNPVofAccDep if DM_AccDepUse==1

```

*****Making sure NPV are Positive and have Bonus and/or 179 Use.***

```
rename NPVofAccDep_C3 Orig_NPVofAccDep_C3
rename NPVofAccDep_C5 Orig_NPVofAccDep_C5
rename NPVofAccDep_C7 Orig_NPVofAccDep_C7
rename NPVofAccDep_C10 Orig_NPVofAccDep_C10
rename NPVofAccDep_C15 Orig_NPVofAccDep_C15
rename NPVofAccDep_C20 Orig_NPVofAccDep_C20
rename NPVofAccDep_C27 Orig_NPVofAccDep_C27
gen NPVofAccDep_C3=.
replace NPVofAccDep_C3= 0 if DM_179_NPVofAccDep_C3==0
replace NPVofAccDep_C3= 0 if DM_Bonus_NPVofAccDep_C3==0
replace NPVofAccDep_C3= Orig_NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1
replace NPVofAccDep_C3= Orig_NPVofAccDep_C3 if DM_Bonus_NPVofAccDep_C3==1
gen NPVofAccDep_C5=.
replace NPVofAccDep_C5= 0 if DM_179_NPVofAccDep_C5==0
replace NPVofAccDep_C5= 0 if DM_Bonus_NPVofAccDep_C5==0
replace NPVofAccDep_C5= Orig_NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1
replace NPVofAccDep_C5= Orig_NPVofAccDep_C5 if DM_Bonus_NPVofAccDep_C5==1
gen NPVofAccDep_C7=.
replace NPVofAccDep_C7= 0 if DM_179_NPVofAccDep_C7==0
replace NPVofAccDep_C7= 0 if DM_Bonus_NPVofAccDep_C7==0
replace NPVofAccDep_C7= Orig_NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1
replace NPVofAccDep_C7= Orig_NPVofAccDep_C7 if DM_Bonus_NPVofAccDep_C7==1
gen NPVofAccDep_C10=.
replace NPVofAccDep_C10= 0 if DM_179_NPVofAccDep_C10==0
replace NPVofAccDep_C10= 0 if DM_Bonus_NPVofAccDep_C10==0
replace NPVofAccDep_C10= Orig_NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1
replace NPVofAccDep_C10= Orig_NPVofAccDep_C10 if DM_Bonus_NPVofAccDep_C10==1
gen NPVofAccDep_C15=.
replace NPVofAccDep_C15= 0 if DM_179_NPVofAccDep_C15==0
replace NPVofAccDep_C15= 0 if DM_Bonus_NPVofAccDep_C15==0
replace NPVofAccDep_C15= Orig_NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1
replace NPVofAccDep_C15= Orig_NPVofAccDep_C15 if DM_Bonus_NPVofAccDep_C15==1
gen NPVofAccDep_C20=.
replace NPVofAccDep_C20= 0 if DM_179_NPVofAccDep_C20==0
replace NPVofAccDep_C20= 0 if DM_Bonus_NPVofAccDep_C20==0
replace NPVofAccDep_C20= Orig_NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1
replace NPVofAccDep_C20= Orig_NPVofAccDep_C20 if DM_Bonus_NPVofAccDep_C20==1
gen NPVofAccDep_C27=.
replace NPVofAccDep_C27= 0 if DM_179_NPVofAccDep_C27==0
replace NPVofAccDep_C27= 0 if DM_Bonus_NPVofAccDep_C27==0
replace NPVofAccDep_C27= Orig_NPVofAccDep_C27 if DM_179_NPVofAccDep_C27==1
replace NPVofAccDep_C27= Orig_NPVofAccDep_C27 if DM_Bonus_NPVofAccDep_C27==1
```

*****Conditional Summary Stats*****

*Summary stats not conditional on anything

```
sum NPVofAccDep_C3 NPVofAccDep_C5 NPVofAccDep_C7 NPVofAccDep_C10 NPVofAccDep_C15
NPVofAccDep_C20 NPVofAccDep_C27
sum NPVofAccDep_C3 NPVofAccDep_C5 NPVofAccDep_C7 NPVofAccDep_C10 NPVofAccDep_C15
NPVofAccDep_C20 NPVofAccDep_C27 if DM_AccDepUse==1
```

*Summary stats conditional on Acc Dep use (179 OR Bonus)

sum NPVofAccDep_C3 if DM_NPVofAccDep_C3==1
sum NPVofAccDep_C5 if DM_NPVofAccDep_C5==1
sum NPVofAccDep_C7 if DM_NPVofAccDep_C7==1
sum NPVofAccDep_C10 if DM_NPVofAccDep_C10==1
sum NPVofAccDep_C15 if DM_NPVofAccDep_C15==1
sum NPVofAccDep_C20 if DM_NPVofAccDep_C20==1
sum NPVofAccDep_C27 if DM_NPVofAccDep_C27==1

*Summary stats conditional on 179 use

sum NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1
sum NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1
sum NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1
sum NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1
sum NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1
sum NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1
sum NPVofAccDep_C27 if DM_179_NPVofAccDep_C27==1

***Crop Farms, 179

sum NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1 & FarmCrop==1
sum NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1 & FarmCrop==1
sum NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1 & FarmCrop==1
sum NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1 & FarmCrop==1
sum NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1 & FarmCrop==1
sum NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1 & FarmCrop==1

***Dairy Farms, 179

sum NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1 & FarmDairy==1
sum NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1 & FarmDairy==1
sum NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1 & FarmDairy==1
sum NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1 & FarmDairy==1
sum NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1 & FarmDairy==1
sum NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1 & FarmDairy==1

***Diversified Farms, 179

sum NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1 & FarmDiversified==1
sum NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1 & FarmDiversified==1
sum NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1 & FarmDiversified==1
sum NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1 & FarmDiversified==1
sum NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1 & FarmDiversified==1
sum NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1 & FarmDiversified==1

*Summary stats conditional on Bonus use

sum NPVofAccDep_C3 if DM_Bonus_NPVofAccDep_C3==1
sum NPVofAccDep_C5 if DM_Bonus_NPVofAccDep_C5==1
sum NPVofAccDep_C7 if DM_Bonus_NPVofAccDep_C7==1
sum NPVofAccDep_C10 if DM_Bonus_NPVofAccDep_C10==1
sum NPVofAccDep_C15 if DM_Bonus_NPVofAccDep_C15==1
sum NPVofAccDep_C20 if DM_Bonus_NPVofAccDep_C20==1
sum NPVofAccDep_C27 if DM_Bonus_NPVofAccDep_C27==1

*Crop Farms

sum NPVofAccDep_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmCrop==1
sum NPVofAccDep_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmCrop==1
sum NPVofAccDep_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmCrop==1
sum NPVofAccDep_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmCrop==1

```

sum NPVofAccDep_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmCrop==1
sum NPVofAccDep_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmCrop==1
*Dairy Farms
sum NPVofAccDep_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDairy==1
sum NPVofAccDep_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDairy==1
sum NPVofAccDep_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDairy==1
sum NPVofAccDep_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDairy==1
sum NPVofAccDep_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDairy==1
sum NPVofAccDep_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDairy==1
*Diversified
sum NPVofAccDep_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDiversified==1
sum NPVofAccDep_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDiversified==1
sum NPVofAccDep_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDiversified==1
sum NPVofAccDep_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDiversified==1
sum NPVofAccDep_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDiversified==1
sum NPVofAccDep_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDiversified==1
*Summary stats conditional on Bonus AND 179 use
sum NPVofAccDep_C3 if DM_179_NPVofAccDep_C3==1 & DM_Bonus_NPVofAccDep_C3==1
sum NPVofAccDep_C5 if DM_179_NPVofAccDep_C5==1 & DM_Bonus_NPVofAccDep_C5==1
sum NPVofAccDep_C7 if DM_179_NPVofAccDep_C7==1 & DM_Bonus_NPVofAccDep_C7==1
sum NPVofAccDep_C10 if DM_179_NPVofAccDep_C10==1 & DM_Bonus_NPVofAccDep_C10==1
sum NPVofAccDep_C15 if DM_179_NPVofAccDep_C15==1 & DM_Bonus_NPVofAccDep_C15==1
sum NPVofAccDep_C20 if DM_179_NPVofAccDep_C20==1 & DM_Bonus_NPVofAccDep_C20==1
sum NPVofAccDep_C27 if DM_179_NPVofAccDep_C27==1 & DM_Bonus_NPVofAccDep_C27==1
sum Amt_179_AfterLimit_Adjust Bonus_Total if DM_AccDepUse==1
tab Amt_179_AfterLimit_Adjust if DM_179Use==1
*Sum of NPV's of all class
sum NPVofAccDep_C3 if DM_NPVofAccDep_C3==1
display r(sum)
sum NPVofAccDep_C5 if DM_NPVofAccDep_C5==1
display r(sum)
sum NPVofAccDep_C7 if DM_NPVofAccDep_C7==1
display r(sum)
sum NPVofAccDep_C10 if DM_NPVofAccDep_C10==1
display r(sum)
sum NPVofAccDep_C15 if DM_NPVofAccDep_C15==1
display r(sum)
sum NPVofAccDep_C20 if DM_NPVofAccDep_C20==1
display r(sum)
sum NPVofAccDep_C27 if DM_NPVofAccDep_C27==1
display r(sum)
*Sum totals for the whole data set
gen AccDepSum_C3 =Amt_179_C3+Bonus_C3
sum AccDepSum_C3
display r(sum)
gen AccDepSum_C5 =Amt_179_C5+Bonus_C5
sum AccDepSum_C5
display r(sum)
gen AccDepSum_C7 =Amt_179_C7+Bonus_C7
sum AccDepSum_C7
display r(sum)

```

```

gen AccDepSum_C10 =Amt_179_C10+Bonus_C10
sum AccDepSum_C10
display r(sum)
gen AccDepSum_C15 =Amt_179_C15+Bonus_C15
sum AccDepSum_C15
display r(sum)
gen AccDepSum_C20 =Amt_179_C20+Bonus_C20
sum AccDepSum_C20
display r(sum)
gen AccDepSum_C275 =Amt_179_C275+Bonus_C275
sum AccDepSum_C275
display r(sum)
count if AccDepSum_C3>0
count if AccDepSum_C5>0
count if AccDepSum_C7>0
count if AccDepSum_C10>0
count if AccDepSum_C15>0
count if AccDepSum_C20>0
count if AccDepSum_C27>0
*****Finding out there was no adjustment from the dollar limitation for the tax year**
gen AccDepAmt= Amt_179_AfterLimit_Adjust+ Bonus_Total
gen AccDepAmt_WithOut_Adjustment= Tot_179 + Bonus_Total
gen Diff_AdjAccDep = AccDepAmt_WithOut_Adjustment-AccDepAmt
count if Diff_AdjAccDep>0
sum TotalNPVofAccDep if DM_AccDepUse==1
sum NPVofAccDep_C3 NPVofAccDep_C5 NPVofAccDep_C7 NPVofAccDep_C10 NPVofAccDep_C15
NPVofAccDep_C20 NPVofAccDep_C27 TotalNPVofAccDep if DM_AccDepUse==1
****Graphs Accelerated Depreciation taken over the years****
table Year, contents(sum Amt_179_C3 sum Amt_179_C5 sum Amt_179_C7)
*Generating Sch F Income or Loss
gen Tot_Expen= TotCashExp + Tot_Depr_Deduction //Line 33 on Schedule F
gen SchF_FarmProf_Loss=.
replace SchF_FarmProf_Loss= GrossFarmIncome-Tot_Expen //Line 34 (Line 9 - Line 33)
sum SchF_FarmProf_Loss if DM_AccDepUse==1
sum SchF_FarmProf_Loss if DM_AccDepUse==0
*drop Tot_Expen ScF_FarmProf_Loss
****Sch F Graphs
**Graph of All Farms Ave Sch F
preserve
collapse (mean) SchF_FarmProf_Loss, by(Year)
restore
**Graph of Crop Farm Ave Sch F
preserve
drop if FarmCrop==0
collapse (mean)SchF_FarmProf_Loss, by (Year)
restore
**Graph of Dairy Farm Ave Sch F
preserve
drop if FarmDairy==0
collapse (mean)SchF_FarmProf_Loss, by (Year)
restore

```

```

**Graph of Diversified Farm Ave Sch F
preserve
drop if FarmDiversified==0
collapse (mean)SchF_FarmProf_Loss, by (Year)
restore
preserve
drop if DM_179Use ==0
collapse (mean) Tot_New_Invest Tot_Inv_C3 Tot_Inv_C5 Tot_Inv_C7 Tot_Inv_C10 Tot_Inv_C15 Tot_Inv_C20
Tot_Inv_C275 Tot_179_Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20
Amt_179_C275 Bonus_Total Bonus_C3 Bonus_C5 Bonus_C7 Bonus_C10 Bonus_C15 Bonus_C20 Bonus_C275
DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7 DM_179_NPVofAccDep_C10
DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20 DM_179_NPVofAccDep_C27
DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20
DM_Bonus_NPVofAccDep_C27, by(FarmCrop Year)
restore
*Put together graphs by dropping variables and browsing the data and dropping it in Excel
**Table 3.10 Depreciation Summary Statistics Not Conditional on Accelerated Depreciation Use
*collapse Amt_179_AfterLimit_Adjust Bonus_Total FinanMACRS_CrYr_Tot, by(FarmID Year)
sum Amt_179_AfterLimit_Adjust Bonus_Total FinanMACRS_CrYr_Tot
*****Summary Stats for Writing my Paper*****
sum Tot_179_Bonus_Total FinanMACRS_CrYr_Tot //Tot_Depr_Deduction
**Table 3.11 Summary Statistics of Section 179 Use Conditional on Election of Section 179 Depreciation Deduction
*collapse Amt_179_AfterLimit_Adjust (max) FarmCrop FarmDairy FarmDiversified DM_179Use, by (FarmID Year)
sum Amt_179_AfterLimit_Adjust if DM_179Use==1
sum Amt_179_AfterLimit_Adjust if DM_179Use==1
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified ==1
**Table 3.12 Frequency and Average Amount of Section 179 Depreciation Deduction Taken by Year and Farm
Type, Conditional on Section 179 Use
***Number of Deduction Taken and average amount per year for all farms**
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2004
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2005
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2006
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2007
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2008
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2009
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2010
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2011
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2012
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2013
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & Year==2014
***Number of Deduction Taken and average amount per year Crop farms**
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2004
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2005
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2006
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2007
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2008
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2009
sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2010

```

sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2011
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2012
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2013
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmCrop==1 & Year==2014
 ***Number of Deduction Taken and average amount per year Dairy farms**
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2004
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2005
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2006
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2007
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2008
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2009
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2010
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2011
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2012
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2013
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDairy==1 & Year==2014
 ***Number of Deduction Taken and average amount per year Diversified farms**
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2004
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2005
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2006
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2007
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2008
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2009
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2010
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2011
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2012
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2013
 sum Amt_179_AfterLimit_Adjust if DM_179Use==1 & FarmDiversified==1 & Year==2014
 pwcrr Amt_179_AfterLimit_Adjust Tot_Amt_EligibleFor179 Bonus_Total Tot_Depr_Deduction GrossFarmIncome
 MachLease Networth Tot_New_Invest
 sum FarmID
 *Table 3.13 Section 179 Use by Asset Class
 *collapse (sum) Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 (max)
 DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7 DM_179_NPVofAccDep_C10
 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20 FarmCrop FarmDairy FarmDiversified, by (FarmID Year)
 sum Amt_179_C3 if DM_179_NPVofAccDep_C3
 sum Amt_179_C5 if DM_179_NPVofAccDep_C5
 sum Amt_179_C7 if DM_179_NPVofAccDep_C7
 sum Amt_179_C10 if DM_179_NPVofAccDep_C10
 sum Amt_179_C15 if DM_179_NPVofAccDep_C15
 sum Amt_179_C20 if DM_179_NPVofAccDep_C20
 sum Amt_179_C3 if DM_179_NPVofAccDep_C3 & FarmCrop==1
 sum Amt_179_C5 if DM_179_NPVofAccDep_C5 & FarmCrop==1
 sum Amt_179_C7 if DM_179_NPVofAccDep_C7 & FarmCrop==1
 sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmCrop==1
 sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmCrop==1
 sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmCrop==1
 sum Amt_179_C3 if DM_179_NPVofAccDep_C3 & FarmDairy==1
 sum Amt_179_C5 if DM_179_NPVofAccDep_C5 & FarmDairy==1
 sum Amt_179_C7 if DM_179_NPVofAccDep_C7 & FarmDairy==1
 sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDairy==1


```

sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDiversified==1 & Year==2010
sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDiversified==1 & Year==2011
sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDiversified==1 & Year==2012
sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDiversified==1 & Year==2013
sum Amt_179_C10 if DM_179_NPVofAccDep_C10 & FarmDiversified==1 & Year==2014
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2004
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2005
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2006
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2007
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2008
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2009
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2010
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2011
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2012
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2013
sum Amt_179_C15 if DM_179_NPVofAccDep_C15 & FarmDiversified==1 & Year==2014
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2004
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2005
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2006
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2007
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2008
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2009
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2010
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2011
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2012
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2013
sum Amt_179_C20 if DM_179_NPVofAccDep_C20 & FarmDiversified==1 & Year==2014
**Table
*collapse (sum) Tot_Inv_C3 Tot_Inv_C5 Tot_Inv_C7 Tot_Inv_C10 Tot_Inv_C15 Tot_Inv_C20
Tot_Amt_EligibleFor179 Amt_EligibleFor179_C3 Amt_EligibleFor179_C5 Amt_EligibleFor179_C7
Amt_EligibleFor179_C10 Amt_EligibleFor179_C15 Amt_EligibleFor179_C20 Amt_EligibleFor179_C275 Amt_179_C3
Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20, by(FarmID Year)
sum Tot_Inv_C3 Tot_Inv_C5 Tot_Inv_C7 Tot_Inv_C10 Tot_Inv_C15 Tot_Inv_C20
****Used filter in data browser to do this
*Table
*collapse (sum) Tot_New_Invest Tot_Inv_C3 Tot_Inv_C5 Tot_Inv_C7 Tot_Inv_C10 Tot_Inv_C15 Tot_Inv_C20
Tot_Inv_C275 Tot_Inv_C0 Tot_Amt_EligibleFor179 Amt_EligibleFor179_C3 Amt_EligibleFor179_C5
Amt_EligibleFor179_C7 Amt_EligibleFor179_C10 Amt_EligibleFor179_C15 Amt_EligibleFor179_C20
Amt_EligibleFor179_C275 Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20
Amt_179_C275, by(FarmID Year)
***Used filter in data browser to do this
****BONUS****
*Table
*collapse (sum) Bonus_C3 Bonus_C5 Bonus_C7 Bonus_C10 Bonus_C15 Bonus_C20 Bonus_C275 (max) FarmCrop
FarmDairy FarmDiversified DM_BonusUse, by(FarmID Year)
sum Bonus_Total if DM_BonusUse==1
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified ==1
***Number of Deduction Taken and average amount per year for all farms**
sum Bonus_Total if DM_BonusUse==1 & Year==2004

```

sum Bonus_Total if DM_BonusUse==1 & Year==2005
sum Bonus_Total if DM_BonusUse==1 & Year==2006
sum Bonus_Total if DM_BonusUse==1 & Year==2007
sum Bonus_Total if DM_BonusUse==1 & Year==2008
sum Bonus_Total if DM_BonusUse==1 & Year==2009
sum Bonus_Total if DM_BonusUse==1 & Year==2010
sum Bonus_Total if DM_BonusUse==1 & Year==2011
sum Bonus_Total if DM_BonusUse==1 & Year==2012
sum Bonus_Total if DM_BonusUse==1 & Year==2013
sum Bonus_Total if DM_BonusUse==1 & Year==2014

***Number of Deduction Taken and average amount per year Crop farms**

sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2004
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2005
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2006
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2007
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2008
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2009
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2010
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2011
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2012
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2013
sum Bonus_Total if DM_BonusUse==1 & FarmCrop==1 & Year==2014

***Number of Deduction Taken and average amount per year Dairy farms**

sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2004
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2005
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2006
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2007
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2008
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2009
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2010
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2011
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2012
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2013
sum Bonus_Total if DM_BonusUse==1 & FarmDairy==1 & Year==2014

***Number of Deduction Taken and average amount per year Diversified farms**

sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2004
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2005
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2006
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2007
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2008
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2009
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2010
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2011
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2012
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2013
sum Bonus_Total if DM_BonusUse==1 & FarmDiversified==1 & Year==2014

*Table Bonus Use by Class and Farm Type and Table

```

*collapse (sum) Bonus_C3 Bonus_C5 Bonus_C7 Bonus_C10 Bonus_C15 Bonus_C20
(max)DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
FarmDairy FarmDiversified, by(FarmID Year)
sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2004
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2004
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2004
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2004
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2004
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2004

```

```

sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmCrop==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmCrop==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmCrop==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmCrop==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmCrop==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmCrop==1

```

```

sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDairy==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDairy==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDairy==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDairy==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDairy==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDairy==1

```

```

sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDiversified==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDiversified==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDiversified==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDiversified==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDiversified==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDiversified==1

```

```

sum Bonus_C3 Bonus_C5 Bonus_C7 Bonus_C10 Bonus_C15 Bonus_C20 if FarmCrop==1

```

****Creating two dummy variables for Size (Acres and something with \$...)****

*Acres

```
gen DM_Acres_Size=.
```

```
replace DM_Acres_Size= 1 if Acres<501
```

```
replace DM_Acres_Size= 2 if Acres >500 & Acres <1501
```

```
replace DM_Acres_Size= 3 if Acres>1500
```

```
replace DM_Acres_Size=. if missing(Acres)
```

```
tab Acres if DM_Acres_Size==1
```

```
tab Acres if DM_Acres_Size==2
```

```
tab Acres if DM_Acres_Size==3
```

*Working Capital

```
gen Working_Capital=.
```

```
replace Working_Capital= Cash_Checking+Prepaid_Exp+Accts_Rec-Cur_Liab
```

```
gen DM_WC_Size=.
```

```
replace DM_WC_Size= 1 if Working_Capital<1
```

```
replace DM_WC_Size= 2 if Working_Capital>0 & Working_Capital<500001
```

```
replace DM_WC_Size= 3 if Working_Capital>500000 & Working_Capital<1500001
```

```

replace DM_WC_Size= 4 if Working_Capital>1500000 & Working_Capital<3000001
replace DM_WC_Size= 5 if Working_Capital>3000000
replace DM_WC_Size=. if missing(Working_Capital)
tab Working_Capital if DM_WC_Size==1
tab Working_Capital if DM_WC_Size==2
tab Working_Capital if DM_WC_Size==3
tab Working_Capital if DM_WC_Size==4
tab Working_Capital if DM_WC_Size==5

*Gross Farm Income
gen DM_GFI_Size=.
replace DM_GFI_Size= 1 if GrossFarmIncome<500001
replace DM_GFI_Size= 2 if GrossFarmIncome>500000 & GrossFarmIncome<1000001
replace DM_GFI_Size= 3 if GrossFarmIncome>1000000 & GrossFarmIncome<3000001
replace DM_GFI_Size= 4 if GrossFarmIncome>3000000 & GrossFarmIncome<8000001
replace DM_GFI_Size= 5 if GrossFarmIncome>8000000
replace DM_GFI_Size=. if missing(GrossFarmIncome)
tab GrossFarmIncome if DM_GFI_Size==1
tab GrossFarmIncome if DM_GFI_Size==2
tab GrossFarmIncome if DM_GFI_Size==3
tab GrossFarmIncome if DM_GFI_Size==4
tab GrossFarmIncome if DM_GFI_Size==5

foreach x of numlist 10/18 21/29 {
gen dm_bizrow`x' = 0
replace dm_bizrow`x'=1 if BusinessID==`x'
}
foreach x of numlist 10/18 21/29 {
bys FarmID Year: egen dm_bizyear`x' = max(dm_bizrow`x')
}
egen no_biz = rsum(dm_bizyear*)
label var no_biz "No of Businesses a Farm had in a year"
foreach x of numlist 10/18 21/29 {
bys FarmID: egen check_`x' = min(dm_bizyear`x')
}
foreach x of numlist 10/18 21/29 {
gen change`x' = 1 if dm_bizyear`x'!=check_`x'
}
egen change = rsum(change*)
bys FarmID: egen change_bizid_ever = sum(change)
replace change_bizid_ever = 1 if change_bizid_ever >0
label var change_bizid_ever "Whether business id ever changed for given farm"
drop dm_bizrow* dm_bizyear* check_* change10-change29
tab FarmID if change_bizid_ever==0 //Farms that never changed business id (30)
tab FarmID if change_bizid_ever!=0 //Farms that did change business id (37)
*/
preserve
*drop if GrossFarmIncome==.
*collapse (mean) GrossFarmIncome (max) FarmCrop FarmDairy FarmDiversified, by (FarmID Year)
*bys Year

```

```

sum GrossFarmIncome if Year==2004 & FarmCrop==1
sum GrossFarmIncome if Year==2005 & FarmCrop==1
sum GrossFarmIncome if Year==2006 & FarmCrop==1
sum GrossFarmIncome if Year==2007 & FarmCrop==1
sum GrossFarmIncome if Year==2008 & FarmCrop==1
sum GrossFarmIncome if Year==2009 & FarmCrop==1
sum GrossFarmIncome if Year==2010 & FarmCrop==1
sum GrossFarmIncome if Year==2011 & FarmCrop==1
sum GrossFarmIncome if Year==2012 & FarmCrop==1
sum GrossFarmIncome if Year==2013 & FarmCrop==1
sum GrossFarmIncome if Year==2014 & FarmCrop==1

```

```

sum GrossFarmIncome if Year==2004 & FarmDairy==1
sum GrossFarmIncome if Year==2005 & FarmDairy==1
sum GrossFarmIncome if Year==2006 & FarmDairy==1
sum GrossFarmIncome if Year==2007 & FarmDairy==1
sum GrossFarmIncome if Year==2008 & FarmDairy==1
sum GrossFarmIncome if Year==2009 & FarmDairy==1
sum GrossFarmIncome if Year==2010 & FarmDairy==1
sum GrossFarmIncome if Year==2011 & FarmDairy==1
sum GrossFarmIncome if Year==2012 & FarmDairy==1
sum GrossFarmIncome if Year==2013 & FarmDairy==1
sum GrossFarmIncome if Year==2014 & FarmDairy==1

```

```

sum GrossFarmIncome if Year==2004 & FarmDiversified==1
sum GrossFarmIncome if Year==2005 & FarmDiversified==1
sum GrossFarmIncome if Year==2006 & FarmDiversified==1
sum GrossFarmIncome if Year==2007 & FarmDiversified==1
sum GrossFarmIncome if Year==2008 & FarmDiversified==1
sum GrossFarmIncome if Year==2009 & FarmDiversified==1
sum GrossFarmIncome if Year==2010 & FarmDiversified==1
sum GrossFarmIncome if Year==2011 & FarmDiversified==1
sum GrossFarmIncome if Year==2012 & FarmDiversified==1
sum GrossFarmIncome if Year==2013 & FarmDiversified==1
sum GrossFarmIncome if Year==2014 & FarmDiversified==1

```

```

egen GFI_Mean4 = mean(GrossFarmIncome) if Year==2004 & FarmCrop==1
egen GFI_Mean5 = mean(GrossFarmIncome) if Year==2005 & FarmCrop==1
egen GFI_Mean6 = mean(GrossFarmIncome) if Year==2006 & FarmCrop==1
egen GFI_Mean7 = mean(GrossFarmIncome) if Year==2007 & FarmCrop==1
egen GFI_Mean8 = mean(GrossFarmIncome) if Year==2008 & FarmCrop==1
egen GFI_Mean9 = mean(GrossFarmIncome) if Year==2009 & FarmCrop==1
egen GFI_Mean10 = mean(GrossFarmIncome) if Year==2010 & FarmCrop==1
egen GFI_Mean11 = mean(GrossFarmIncome) if Year==2011 & FarmCrop==1
egen GFI_Mean12 = mean(GrossFarmIncome) if Year==2012 & FarmCrop==1
egen GFI_Mean13 = mean(GrossFarmIncome) if Year==2013 & FarmCrop==1
egen GFI_Mean14 = mean(GrossFarmIncome) if Year==2014 & FarmCrop==1
sum GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14
drop GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14

```

```

egen GFI_Mean4 = mean(GrossFarmIncome) if Year==2004 & FarmDairy==1
egen GFI_Mean5 = mean(GrossFarmIncome) if Year==2005 & FarmDairy==1
egen GFI_Mean6 = mean(GrossFarmIncome) if Year==2006 & FarmDairy==1
egen GFI_Mean7 = mean(GrossFarmIncome) if Year==2007 & FarmDairy==1
egen GFI_Mean8 = mean(GrossFarmIncome) if Year==2008 & FarmDairy==1
egen GFI_Mean9 = mean(GrossFarmIncome) if Year==2009 & FarmDairy==1
egen GFI_Mean10 = mean(GrossFarmIncome) if Year==2010 & FarmDairy==1
egen GFI_Mean11 = mean(GrossFarmIncome) if Year==2011 & FarmDairy==1
egen GFI_Mean12 = mean(GrossFarmIncome) if Year==2012 & FarmDairy==1
egen GFI_Mean13 = mean(GrossFarmIncome) if Year==2013 & FarmDairy==1
egen GFI_Mean14 = mean(GrossFarmIncome) if Year==2014 & FarmDairy==1
sum GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14
drop GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14

```

```

egen GFI_Mean4 = mean(GrossFarmIncome) if Year==2004 & FarmDiversified==1
egen GFI_Mean5 = mean(GrossFarmIncome) if Year==2005 & FarmDiversified==1
egen GFI_Mean6 = mean(GrossFarmIncome) if Year==2006 & FarmDiversified==1
egen GFI_Mean7 = mean(GrossFarmIncome) if Year==2007 & FarmDiversified==1
egen GFI_Mean8 = mean(GrossFarmIncome) if Year==2008 & FarmDiversified==1
egen GFI_Mean9 = mean(GrossFarmIncome) if Year==2009 & FarmDiversified==1
egen GFI_Mean10 = mean(GrossFarmIncome) if Year==2010 & FarmDiversified==1
egen GFI_Mean11 = mean(GrossFarmIncome) if Year==2011 & FarmDiversified==1
egen GFI_Mean12 = mean(GrossFarmIncome) if Year==2012 & FarmDiversified==1
egen GFI_Mean13 = mean(GrossFarmIncome) if Year==2013 & FarmDiversified==1
egen GFI_Mean14 = mean(GrossFarmIncome) if Year==2014 & FarmDiversified==1
sum GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14
drop GFI_Mean4 GFI_Mean5 GFI_Mean6 GFI_Mean7 GFI_Mean8 GFI_Mean9 GFI_Mean10 GFI_Mean11
GFI_Mean12 GFI_Mean13 GFI_Mean14
restore

```

```

egen GFICrop = mean(GrossFarmIncome) if FarmCrop==1
egen GFIDairy = mean(GrossFarmIncome) if FarmDairy==1
egen GFIDiver = mean(GrossFarmIncome) if FarmDiversified==1
drop GFICrop GFIDairy GFIDiver

```

*Table 3.9 Frequency Percents (179 Deduction taken on Eligible Property)

*Column 1 done in excel

*Column 2 Average Percent of Total Investment Eligible for Section 179 Direct Expensing

```

gen Per_TotInvElig_4DirExp_3 = Amt_EligibleFor179_C3/Tot_Inv_C3
gen Per_TotInvElig_4DirExp_5 = Amt_EligibleFor179_C5/Tot_Inv_C5
gen Per_TotInvElig_4DirExp_7 = Amt_EligibleFor179_C7/Tot_Inv_C7
gen Per_TotInvElig_4DirExp_10 = Amt_EligibleFor179_C10/Tot_Inv_C10
gen Per_TotInvElig_4DirExp_15 = Amt_EligibleFor179_C15/Tot_Inv_C15
gen Per_TotInvElig_4DirExp_20 = Amt_EligibleFor179_C20/Tot_Inv_C20
gen Per_TotInvElig_4DirExp_275 = Amt_EligibleFor179_C275/Tot_Inv_C275
sum Per_TotInvElig_4DirExp_3 Per_TotInvElig_4DirExp_5 Per_TotInvElig_4DirExp_7 Per_TotInvElig_4DirExp_10
Per_TotInvElig_4DirExp_15 Per_TotInvElig_4DirExp_20 Per_TotInvElig_4DirExp_275

```

```

drop Per_TotInvElig_4DirExp_3 Per_TotInvElig_4DirExp_5 Per_TotInvElig_4DirExp_7 Per_TotInvElig_4DirExp_10
Per_TotInvElig_4DirExp_15 Per_TotInvElig_4DirExp_20 Per_TotInvElig_4DirExp_275
gen Flip = Tot_Inv_C3/Amt_EligibleFor179_C3
gen Per_179Taken_3 = Amt_179_C3/Amt_EligibleFor179_C3
gen Per_179Taken_5 = Amt_179_C5/Amt_EligibleFor179_C5
gen Per_179Taken_7 = Amt_179_C7/Amt_EligibleFor179_C7
gen Per_179Taken_10 = Amt_179_C10/Amt_EligibleFor179_C10
gen Per_179Taken_15 = Amt_179_C15/Amt_EligibleFor179_C15
gen Per_179Taken_20 = Amt_179_C20/Amt_EligibleFor179_C20
gen Per_179Taken_27 = Amt_179_C275/Amt_EligibleFor179_C275
*drop Per_179Taken_3 Per_179Taken_5 Per_179Taken_7 Per_179Taken_10 Per_179Taken_15 Per_179Taken_20
Per_179Taken_27
*Schedule F Sum Stats
preserve
*collapse SchF_FarmProf_Loss (max) FarmCrop FarmDairy FarmDiversified, by (FarmID Year)
restore
sum SchF_FarmProf_Loss
sum SchF_FarmProf_Loss if FarmCrop==1
sum SchF_FarmProf_Loss if FarmDairy==1
sum SchF_FarmProf_Loss if FarmDiversified==1
*Acres Sum Stats
preserve
*collapse Acres (max) FarmCrop FarmDairy FarmDiversified, by (FarmID Year)
*drop if Acres==.
sum Acres
sum Acres if FarmCrop==1
sum Acres if FarmDairy==1
sum Acres if FarmDiversified==1
restore
sum Acres if Year==2004
sum Acres if Year==2005
sum Acres if Year==2006
sum Acres if Year==2007
sum Acres if Year==2008
sum Acres if Year==2009
sum Acres if Year==2010
sum Acres if Year==2011
sum Acres if Year==2012
sum Acres if Year==2013
sum Acres if Year==2014

sum Acres if Year==2004 & FarmCrop==1
sum Acres if Year==2005 & FarmCrop==1
sum Acres if Year==2006 & FarmCrop==1
sum Acres if Year==2007 & FarmCrop==1
sum Acres if Year==2008 & FarmCrop==1
sum Acres if Year==2009 & FarmCrop==1
sum Acres if Year==2010 & FarmCrop==1
sum Acres if Year==2011 & FarmCrop==1
sum Acres if Year==2012 & FarmCrop==1
sum Acres if Year==2013 & FarmCrop==1

```

```

sum Acres if Year==2014 & FarmCrop==1
sum Acres if Year==2004 & FarmDairy==1
sum Acres if Year==2005 & FarmDairy==1
sum Acres if Year==2006 & FarmDairy==1
sum Acres if Year==2007 & FarmDairy==1
sum Acres if Year==2008 & FarmDairy==1
sum Acres if Year==2009 & FarmDairy==1
sum Acres if Year==2010 & FarmDairy==1
sum Acres if Year==2011 & FarmDairy==1
sum Acres if Year==2012 & FarmDairy==1
sum Acres if Year==2013 & FarmDairy==1
sum Acres if Year==2014 & FarmDairy==1
sum Acres if Year==2004 & FarmDiversified==1
sum Acres if Year==2005 & FarmDiversified==1
sum Acres if Year==2006 & FarmDiversified==1
sum Acres if Year==2007 & FarmDiversified==1
sum Acres if Year==2008 & FarmDiversified==1
sum Acres if Year==2009 & FarmDiversified==1
sum Acres if Year==2010 & FarmDiversified==1
sum Acres if Year==2011 & FarmDiversified==1
sum Acres if Year==2012 & FarmDiversified==1
sum Acres if Year==2013 & FarmDiversified==1
sum Acres if Year==2014 & FarmDiversified==1
pwcorr GrossFarmIncome Acres SchF_FarmProf_Loss
*GFI Sum Stats
*preserve
*drop if GrossFarmIncome==.
*collapse (mean) SchF_FarmProf_Loss (max) FarmCrop FarmDairy FarmDiversified, by (FarmID Year)
*bys Year
sum SchF_FarmProf_Loss
sum SchF_FarmProf_Loss if FarmCrop==1
sum SchF_FarmProf_Loss if FarmDairy==1
sum SchF_FarmProf_Loss if FarmDiversified==1

sum SchF_FarmProf_Loss if Year==2004 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2005 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2006 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2007 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2008 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2009 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2010 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2011 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2012 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2013 & FarmCrop==1
sum SchF_FarmProf_Loss if Year==2014 & FarmCrop==1

sum SchF_FarmProf_Loss if Year==2004 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2005 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2006 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2007 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2008 & FarmDairy==1

```

```

sum SchF_FarmProf_Loss if Year==2009 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2010 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2011 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2012 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2013 & FarmDairy==1
sum SchF_FarmProf_Loss if Year==2014 & FarmDairy==1

sum SchF_FarmProf_Loss if Year==2004 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2005 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2006 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2007 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2008 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2009 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2010 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2011 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2012 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2013 & FarmDiversified==1
sum SchF_FarmProf_Loss if Year==2014 & FarmDiversified==1
*GFI Sum Stats
preserve
*collapse (mean) GrossFarmIncome SchF_FarmProf_Loss (max) FarmCrop FarmDairy FarmDiversified Acres, by
(FarmID Year)
*drop if GrossFarmIncome==.
restore
sum GrossFarmIncome
sum GrossFarmIncome if FarmCrop==1
sum GrossFarmIncome if FarmDairy==1
sum GrossFarmIncome if FarmDiversified==1
sum SchF_FarmProf_Loss
sum SchF_FarmProf_Loss if FarmCrop==1
sum SchF_FarmProf_Loss if FarmDairy==1
sum SchF_FarmProf_Loss if FarmDiversified==1
sum Acres
sum Acres if FarmCrop==1
sum Acres if FarmDairy==1
sum Acres if FarmDiversified==1
**Table 3.____ Section 179 use by Class, Year and Farm Type
*Amt_179_C3 Year==2004 & FarmCrop==1 & DM_179Use==1
sum Amt_179_C5 if Year==2004 & FarmCrop==1 & DM_179Use==1
*Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2005 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2006 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2007 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2008 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2009 &
FarmCrop==1 & DM_179Use==1

```

```

sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2010 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2011 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2012 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2013 &
FarmCrop==1 & DM_179Use==1
sum Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 if Year==2014 &
FarmCrop==1 & DM_179Use==1
*Need to Collapse GrossFarmIncome First by (Farm Year and var...)
sum GrossFarmIncome Acres SchF_FarmProf_Loss if DM_GFI_Size==1
sum GrossFarmIncome Acres SchF_FarmProf_Loss if DM_GFI_Size==2
sum GrossFarmIncome Acres SchF_FarmProf_Loss if DM_GFI_Size==3
sum GrossFarmIncome Acres SchF_FarmProf_Loss if DM_GFI_Size==4
sum GrossFarmIncome Acres SchF_FarmProf_Loss if DM_GFI_Size==5
****Tax Rates*****
*2014
gen TaxRate=.
replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2014
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<18151 & Year==2014
replace TaxRate=.15 if SchF_FarmProf_Loss>18149 & SchF_FarmProf_Loss<73801 & Year==2014
replace TaxRate=.25 if SchF_FarmProf_Loss>73800 & SchF_FarmProf_Loss<148851 & Year==2014
replace TaxRate=.28 if SchF_FarmProf_Loss>148850 & SchF_FarmProf_Loss<226851 & Year==2014
replace TaxRate=.33 if SchF_FarmProf_Loss>226850 & SchF_FarmProf_Loss<405101 & Year==2014
replace TaxRate=.35 if SchF_FarmProf_Loss>405100 & SchF_FarmProf_Loss<457601 & Year==2014
replace TaxRate=.396 if SchF_FarmProf_Loss>457600 & Year==2014

*2013
replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2013
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<17851 & Year==2013
replace TaxRate=.15 if SchF_FarmProf_Loss>17850 & SchF_FarmProf_Loss<72501 & Year==2013
replace TaxRate=.25 if SchF_FarmProf_Loss>72500 & SchF_FarmProf_Loss<146401 & Year==2013
replace TaxRate=.28 if SchF_FarmProf_Loss>146400 & SchF_FarmProf_Loss<223051 & Year==2013
replace TaxRate=.33 if SchF_FarmProf_Loss>223050 & SchF_FarmProf_Loss<398351 & Year==2013
replace TaxRate=.35 if SchF_FarmProf_Loss>398350 & SchF_FarmProf_Loss<450001 & Year==2013
replace TaxRate=.396 if SchF_FarmProf_Loss>450000 & Year==2013

*2012
replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2012
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<17401 & Year==2012
replace TaxRate=.15 if SchF_FarmProf_Loss>17400 & SchF_FarmProf_Loss<70701 & Year==2012
replace TaxRate=.25 if SchF_FarmProf_Loss>70700 & SchF_FarmProf_Loss<142701 & Year==2012
replace TaxRate=.28 if SchF_FarmProf_Loss>142700 & SchF_FarmProf_Loss<217451 & Year==2012
replace TaxRate=.33 if SchF_FarmProf_Loss>217450 & SchF_FarmProf_Loss<388351 & Year==2012
replace TaxRate=.35 if SchF_FarmProf_Loss>388350 & Year==2012

*2011
replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2011
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<17001 & Year==2011
replace TaxRate=.15 if SchF_FarmProf_Loss>17000 & SchF_FarmProf_Loss<69001 & Year==2011

```

replace TaxRate=.25 if SchF_FarmProf_Loss>69000 & SchF_FarmProf_Loss<139351 & Year==2011
 replace TaxRate=.28 if SchF_FarmProf_Loss>139350 & SchF_FarmProf_Loss<212301 & Year==2011
 replace TaxRate=.33 if SchF_FarmProf_Loss>212300 & SchF_FarmProf_Loss<379151 & Year==2011
 replace TaxRate=.35 if SchF_FarmProf_Loss>379150 & Year==2011

*2010

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2010
 replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<16751 & Year==2010
 replace TaxRate=.15 if SchF_FarmProf_Loss>16750 & SchF_FarmProf_Loss<68001 & Year==2010
 replace TaxRate=.25 if SchF_FarmProf_Loss>68000 & SchF_FarmProf_Loss<137301 & Year==2010
 replace TaxRate=.28 if SchF_FarmProf_Loss>137300 & SchF_FarmProf_Loss<209251 & Year==2010
 replace TaxRate=.33 if SchF_FarmProf_Loss>209250 & SchF_FarmProf_Loss<373651 & Year==2010
 replace TaxRate=.35 if SchF_FarmProf_Loss>373650 & Year==2010

*2009

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2009
 replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<16701 & Year==2009
 replace TaxRate=.15 if SchF_FarmProf_Loss>16700 & SchF_FarmProf_Loss<67901 & Year==2009
 replace TaxRate=.25 if SchF_FarmProf_Loss>67900 & SchF_FarmProf_Loss<137051 & Year==2009
 replace TaxRate=.28 if SchF_FarmProf_Loss>137050 & SchF_FarmProf_Loss<208851 & Year==2009
 replace TaxRate=.33 if SchF_FarmProf_Loss>208850 & SchF_FarmProf_Loss<372951 & Year==2009
 replace TaxRate=.35 if SchF_FarmProf_Loss>372950 & Year==2009

*2008

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2008
 replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<16051 & Year==2008
 replace TaxRate=.15 if SchF_FarmProf_Loss>16050 & SchF_FarmProf_Loss<65101 & Year==2008
 replace TaxRate=.25 if SchF_FarmProf_Loss>65100 & SchF_FarmProf_Loss<131451 & Year==2008
 replace TaxRate=.28 if SchF_FarmProf_Loss>131450 & SchF_FarmProf_Loss<200301 & Year==2008
 replace TaxRate=.33 if SchF_FarmProf_Loss>200300 & SchF_FarmProf_Loss<357701 & Year==2008
 replace TaxRate=.35 if SchF_FarmProf_Loss>357700 & Year==2008

*2007

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2007
 replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<15651 & Year==2007
 replace TaxRate=.15 if SchF_FarmProf_Loss>15650 & SchF_FarmProf_Loss<63701 & Year==2007
 replace TaxRate=.25 if SchF_FarmProf_Loss>63700 & SchF_FarmProf_Loss<128501 & Year==2007
 replace TaxRate=.28 if SchF_FarmProf_Loss>128500 & SchF_FarmProf_Loss<195851 & Year==2007
 replace TaxRate=.33 if SchF_FarmProf_Loss>195850 & SchF_FarmProf_Loss<349701 & Year==2007
 replace TaxRate=.35 if SchF_FarmProf_Loss>349700 & Year==2007

*2006

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2006
 replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<15101 & Year==2006
 replace TaxRate=.15 if SchF_FarmProf_Loss>15100 & SchF_FarmProf_Loss<61301 & Year==2006
 replace TaxRate=.25 if SchF_FarmProf_Loss>61300 & SchF_FarmProf_Loss<123701 & Year==2006
 replace TaxRate=.28 if SchF_FarmProf_Loss>123700 & SchF_FarmProf_Loss<188451 & Year==2006
 replace TaxRate=.33 if SchF_FarmProf_Loss>188450 & SchF_FarmProf_Loss<336551 & Year==2006
 replace TaxRate=.35 if SchF_FarmProf_Loss>336550 & Year==2006

*2005

```

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2005
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<14601 & Year==2005
replace TaxRate=.15 if SchF_FarmProf_Loss>14600 & SchF_FarmProf_Loss<59401 & Year==2005
replace TaxRate=.25 if SchF_FarmProf_Loss>59400 & SchF_FarmProf_Loss<119951 & Year==2005
replace TaxRate=.28 if SchF_FarmProf_Loss>119950 & SchF_FarmProf_Loss<182801 & Year==2005
replace TaxRate=.33 if SchF_FarmProf_Loss>182800 & SchF_FarmProf_Loss<326451 & Year==2005
replace TaxRate=.35 if SchF_FarmProf_Loss>326450 & Year==2005

```

*2004

```

replace TaxRate=.10 if SchF_FarmProf_Loss<1 & Year==2004
replace TaxRate=.10 if SchF_FarmProf_Loss>0 & SchF_FarmProf_Loss<14301 & Year==2004
replace TaxRate=.15 if SchF_FarmProf_Loss>14300 & SchF_FarmProf_Loss<58101 & Year==2004
replace TaxRate=.25 if SchF_FarmProf_Loss>58100 & SchF_FarmProf_Loss<117251 & Year==2004
replace TaxRate=.28 if SchF_FarmProf_Loss>117250 & SchF_FarmProf_Loss<178651 & Year==2004
replace TaxRate=.33 if SchF_FarmProf_Loss>178650 & SchF_FarmProf_Loss<319101 & Year==2004
replace TaxRate=.35 if SchF_FarmProf_Loss>319100 & Year==2004

```

PV After Tax Rate

```

gen PV_ATR_C3 = NPVofAccDep_C3*TaxRate if DM_NPVofAccDep_C3==1
gen PV_ATR_C5 = NPVofAccDep_C5*TaxRate if DM_NPVofAccDep_C5==1
gen PV_ATR_C7 = NPVofAccDep_C7*TaxRate if DM_NPVofAccDep_C7==1
gen PV_ATR_C10 = NPVofAccDep_C10*TaxRate if DM_NPVofAccDep_C10==1
gen PV_ATR_C15 = NPVofAccDep_C15*TaxRate if DM_NPVofAccDep_C15==1
gen PV_ATR_C20 = NPVofAccDep_C20*TaxRate if DM_NPVofAccDep_C20==1
gen PV_ATR_C27 = NPVofAccDep_C27*TaxRate if DM_NPVofAccDep_C27==1

```

preserve

```

*collapse(sum) PV_ATR_C3 PV_ATR_C5 PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27
(max)DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7
DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20
DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
FarmDairy FarmDiversified, by(FarmID Year)
sum PV_ATR_C3 if PV_ATR_C3>0
sum PV_ATR_C5 if PV_ATR_C5>0
sum PV_ATR_C7 if PV_ATR_C7>0
sum PV_ATR_C10 if PV_ATR_C10>0
sum PV_ATR_C15 if PV_ATR_C15>0
sum PV_ATR_C20 if PV_ATR_C20>0
sum PV_ATR_C27 if PV_ATR_C27>0

```

restore

preserve

```

*collapse(sum) PV_ATR_C3 PV_ATR_C5 PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27
(max)DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7
DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20
DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
FarmDairy FarmDiversified, by(FarmID Year)
sum PV_ATR_C3 if DM_179_NPVofAccDep_C3==1
sum PV_ATR_C5 if DM_179_NPVofAccDep_C5==1
sum PV_ATR_C7 if DM_179_NPVofAccDep_C7==1
sum PV_ATR_C10 if DM_179_NPVofAccDep_C10==1

```

sum PV_ATR_C15 if DM_179_NPVofAccDep_C15==1

sum PV_ATR_C20 if DM_179_NPVofAccDep_C20==1

*Crop

sum PV_ATR_C3 if DM_179_NPVofAccDep_C3==1 & FarmCrop==1

sum PV_ATR_C5 if DM_179_NPVofAccDep_C5==1 & FarmCrop==1

sum PV_ATR_C7 if DM_179_NPVofAccDep_C7==1 & FarmCrop==1

sum PV_ATR_C10 if DM_179_NPVofAccDep_C10==1 & FarmCrop==1

sum PV_ATR_C15 if DM_179_NPVofAccDep_C15==1 & FarmCrop==1

sum PV_ATR_C20 if DM_179_NPVofAccDep_C20==1 & FarmCrop==1

*Dairy

sum PV_ATR_C3 if DM_179_NPVofAccDep_C3==1 & FarmDairy==1

sum PV_ATR_C5 if DM_179_NPVofAccDep_C5==1 & FarmDairy==1

sum PV_ATR_C7 if DM_179_NPVofAccDep_C7==1 & FarmDairy==1

sum PV_ATR_C10 if DM_179_NPVofAccDep_C10==1 & FarmDairy==1

sum PV_ATR_C15 if DM_179_NPVofAccDep_C15==1 & FarmDairy==1

sum PV_ATR_C20 if DM_179_NPVofAccDep_C20==1 & FarmDairy==1

*Diversified

sum PV_ATR_C3 if DM_179_NPVofAccDep_C3==1 & FarmDiversified==1

sum PV_ATR_C5 if DM_179_NPVofAccDep_C5==1 & FarmDiversified==1

sum PV_ATR_C7 if DM_179_NPVofAccDep_C7==1 & FarmDiversified==1

sum PV_ATR_C10 if DM_179_NPVofAccDep_C10==1 & FarmDiversified==1

sum PV_ATR_C15 if DM_179_NPVofAccDep_C15==1 & FarmDiversified==1

sum PV_ATR_C20 if DM_179_NPVofAccDep_C20==1 & FarmDiversified==1

*Table ATPV Ratio of Section 179 Depreciaton Deduction

****Use the the table created from 4.3 and divide it by the Sec 179 amounts from below by farm type

*Table 4.4 Finding the PV of deduction/dollar value of deduction, Section 179

*preserve

*collapse(sum) Amt_179_C3 Amt_179_C5 Amt_179_C7 Amt_179_C10 Amt_179_C15 Amt_179_C20 PV_ATR_C3

PV_ATR_C5 PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27 (max)DM_179_NPVofAccDep_C3

DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7 DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15

DM_179_NPVofAccDep_C20 DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5

DM_Bonus_NPVofAccDep_C7 DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15

DM_Bonus_NPVofAccDep_C20 FarmCrop FarmDairy FarmDiversified, by(FarmID Year)

*Crop

sum Amt_179_C3 if DM_179_NPVofAccDep_C3==1 & FarmCrop==1

sum Amt_179_C5 if DM_179_NPVofAccDep_C5==1 & FarmCrop==1

sum Amt_179_C7 if DM_179_NPVofAccDep_C7==1 & FarmCrop==1

sum Amt_179_C10 if DM_179_NPVofAccDep_C10==1 & FarmCrop==1

sum Amt_179_C15 if DM_179_NPVofAccDep_C15==1 & FarmCrop==1

sum Amt_179_C20 if DM_179_NPVofAccDep_C20==1 & FarmCrop==1

*Dairy

sum Amt_179_C3 if DM_179_NPVofAccDep_C3==1 & FarmDairy==1

sum Amt_179_C5 if DM_179_NPVofAccDep_C5==1 & FarmDairy==1

sum Amt_179_C7 if DM_179_NPVofAccDep_C7==1 & FarmDairy==1

sum Amt_179_C10 if DM_179_NPVofAccDep_C10==1 & FarmDairy==1

sum Amt_179_C15 if DM_179_NPVofAccDep_C15==1 & FarmDairy==1

sum Amt_179_C20 if DM_179_NPVofAccDep_C20==1 & FarmDairy==1

*Diversified

sum Amt_179_C3 if DM_179_NPVofAccDep_C3==1 & FarmDiversified==1

sum Amt_179_C5 if DM_179_NPVofAccDep_C5==1 & FarmDiversified==1

```

sum Amt_179_C7 if DM_179_NPVofAccDep_C7==1 & FarmDiversified==1
sum Amt_179_C10 if DM_179_NPVofAccDep_C10==1 & FarmDiversified==1
sum Amt_179_C15 if DM_179_NPVofAccDep_C15==1 & FarmDiversified==1
sum Amt_179_C20 if DM_179_NPVofAccDep_C20==1 & FarmDiversified==1

```

***Table Summary Stats of Bonus Condiditonal on USe

*preserve

```

*collapse(sum) PV_ATR_C3 PV_ATR_C5 PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27
(max)DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7
DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20
DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
FarmDairy FarmDiversified, by(FarmID Year)
sum PV_ATR_C3 if DM_Bonus_NPVofAccDep_C3==1
sum PV_ATR_C5 if DM_Bonus_NPVofAccDep_C5==1
sum PV_ATR_C7 if DM_Bonus_NPVofAccDep_C7==1
sum PV_ATR_C10 if DM_Bonus_NPVofAccDep_C10==1
sum PV_ATR_C15 if DM_Bonus_NPVofAccDep_C15==1
sum PV_ATR_C20 if DM_Bonus_NPVofAccDep_C20==1

```

***Table Bonus Summary stats by asset class and farm type

*preserve

```

*collapse(sum) PV_ATR_C3 PV_ATR_C5 PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27
(max)DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7
DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20
DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
FarmDairy FarmDiversified, by(FarmID Year)

```

*Crop

```

sum PV_ATR_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmCrop==1
sum PV_ATR_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmCrop==1
sum PV_ATR_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmCrop==1
sum PV_ATR_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmCrop==1
sum PV_ATR_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmCrop==1
sum PV_ATR_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmCrop==1

```

*Dairy

```

sum PV_ATR_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDairy==1
sum PV_ATR_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDairy==1
sum PV_ATR_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDairy==1
sum PV_ATR_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDairy==1
sum PV_ATR_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDairy==1
sum PV_ATR_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDairy==1

```

*Diversified

```

sum PV_ATR_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDiversified==1
sum PV_ATR_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDiversified==1
sum PV_ATR_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDiversified==1
sum PV_ATR_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDiversified==1
sum PV_ATR_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDiversified==1
sum PV_ATR_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDiversified==1

```

*Table Finding the PV of deduction/Dollar value of deduction, Bonus

```

*preserve
*collapse(sum) Bonus_C3 Bonus_C5 Bonus_C7 Bonus_C10 Bonus_C15 Bonus_C20 PV_ATR_C3 PV_ATR_C5
PV_ATR_C7 PV_ATR_C10 PV_ATR_C15 PV_ATR_C20 PV_ATR_C27 (max)DM_179_NPVofAccDep_C3
DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7 DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15
DM_179_NPVofAccDep_C20 DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5
DM_Bonus_NPVofAccDep_C7 DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15
DM_Bonus_NPVofAccDep_C20 FarmCrop FarmDairy FarmDiversified, by(FarmID Year)
*Crop
sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmCrop==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmCrop==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmCrop==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmCrop==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmCrop==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmCrop==1
*Dairy
sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDairy==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDairy==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDairy==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDairy==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDairy==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDairy==1
*Diversified
sum Bonus_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDiversified==1
sum Bonus_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDiversified==1
sum Bonus_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDiversified==1
sum Bonus_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDiversified==1
sum Bonus_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDiversified==1
sum Bonus_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDiversified==1

*collapse (sum)NOP Network, by(FarmID)
*gen Int_ROE =.
*replace Int_ROE=0.0????
*replace Int_ROE = NOP/Network
*replace Int_ROE = 0.03 if (NOP/Network)<0.03001
*replace Int_ROE = 0.11 if (NOP/Network)>.1100001
*keep if Int_ROE>0

*Cost of Capital
****Cost of Capital, Chapter 4**
*preserve
collapse(sum) Tot_Depr_Deduction NPVofAccDep_C3 NPVofAccDep_C5 NPVofAccDep_C7 NPVofAccDep_C10
NPVofAccDep_C15 NPVofAccDep_C20 Tot_Inv_C3 Tot_Inv_C5 Tot_Inv_C7 Tot_Inv_C10 Tot_Inv_C15 Tot_Inv_C20
(max) SchF_FarmProf_Loss NOP GrossFarmIncome Acres Farm_ROE Wolf_Sum_MACRS_C3 Wolf_Sum_MACRS_C5
Wolf_Sum_MACRS_C7 Wolf_Sum_MACRS_C10 Wolf_Sum_MACRS_C15 Wolf_Sum_MACRS_C20 Z_Wolf_Yr0_C3
Z_Wolf_Yr1_C3 Z_Wolf_Yr2_C3 Z_Wolf_Yr3_C3 Z_Wolf_Yr4_C3 Z_SumWolf_C3 Z_Wolf_Yr0_C5 Z_Wolf_Yr1_C5
Z_Wolf_Yr2_C5 Z_Wolf_Yr3_C5 Z_Wolf_Yr4_C5 Z_Wolf_Yr5_C5 Z_Wolf_Yr6_C5 Z_SumWolf_C5 Z_Wolf_Yr0_C7
Z_Wolf_Yr1_C7 Z_Wolf_Yr2_C7 Z_Wolf_Yr3_C7 Z_Wolf_Yr4_C7 Z_Wolf_Yr5_C7 Z_Wolf_Yr6_C7 Z_Wolf_Yr7_C7
Z_Wolf_Yr8_C7 Z_SumWolf_C7 Z_Wolf_Yr0_C10 Z_Wolf_Yr1_C10 Z_Wolf_Yr2_C10 Z_Wolf_Yr3_C10
Z_Wolf_Yr4_C10 Z_Wolf_Yr5_C10 Z_Wolf_Yr6_C10 Z_Wolf_Yr7_C10 Z_Wolf_Yr8_C10 Z_Wolf_Yr9_C10
Z_Wolf_Yr10_C10 Z_Wolf_Yr11_C10 Z_SumWolf_C10 Z_Wolf_Yr0_C15 Z_Wolf_Yr1_C15 Z_Wolf_Yr2_C15
Z_Wolf_Yr3_C15 Z_Wolf_Yr4_C15 Z_Wolf_Yr5_C15 Z_Wolf_Yr6_C15 Z_Wolf_Yr7_C15 Z_Wolf_Yr8_C15

```

Z_Wolf_Yr9_C15 Z_Wolf_Yr10_C15 Z_Wolf_Yr11_C15 Z_Wolf_Yr12_C15 Z_Wolf_Yr13_C15 Z_Wolf_Yr14_C15
 Z_Wolf_Yr15_C15 Z_Wolf_Yr16_C15 Z_SumWolf_C15 Z_Wolf_Yr0_C20 Z_Wolf_Yr1_C20 Z_Wolf_Yr2_C20
 Z_Wolf_Yr3_C20 Z_Wolf_Yr4_C20 Z_Wolf_Yr5_C20 Z_Wolf_Yr6_C20 Z_Wolf_Yr7_C20 Z_Wolf_Yr8_C20
 Z_Wolf_Yr9_C20 Z_Wolf_Yr10_C20 Z_Wolf_Yr11_C20 Z_Wolf_Yr12_C20 Z_Wolf_Yr13_C20 Z_Wolf_Yr14_C20
 Z_Wolf_Yr15_C20 Z_Wolf_Yr16_C20 Z_Wolf_Yr17_C20 Z_Wolf_Yr18_C20 Z_Wolf_Yr19_C20 Z_Wolf_Yr20_C20
 Z_Wolf_Yr21_C20 Z_SumWolf_C20 DM_AccDepUse DM_179Use DM_BonusUse TaxRate DM_NPVofAccDep_C3
 DM_NPVofAccDep_C5 DM_NPVofAccDep_C7 DM_NPVofAccDep_C10 DM_NPVofAccDep_C15
 DM_NPVofAccDep_C20 DM_179_NPVofAccDep_C3 DM_179_NPVofAccDep_C5 DM_179_NPVofAccDep_C7
 DM_179_NPVofAccDep_C10 DM_179_NPVofAccDep_C15 DM_179_NPVofAccDep_C20
 DM_Bonus_NPVofAccDep_C3 DM_Bonus_NPVofAccDep_C5 DM_Bonus_NPVofAccDep_C7
 DM_Bonus_NPVofAccDep_C10 DM_Bonus_NPVofAccDep_C15 DM_Bonus_NPVofAccDep_C20 FarmCrop
 FarmDairy FarmDiversified, by(FarmID Year)

*gen Orig_Roe=NOP/Networth
 gen Int_ROE =.
 *replace Int_ROE=0.06
 replace Int_ROE = Farm_ROE
 replace Int_ROE = -0.10 if Farm_ROE<(-0.10)
 replace Int_ROE = 0.20 if Farm_ROE>.2000001
 *make the ROE bound at .03 and .11
 gen r_CC_ROE = Int_ROE
 *replace r_CC_ROE = .03 if Int_ROE<0.03
 gen CC_InflaOnCG_C3 =.06 if Tot_Inv_C3>0
 gen CC_InflaOnCG_C5 =.06 if Tot_Inv_C5>0
 gen CC_InflaOnCG_C7 =.06 if Tot_Inv_C7>0
 gen CC_InflaOnCG_C10 =.03 if Tot_Inv_C10>0
 gen CC_InflaOnCG_C15 =.03 if Tot_Inv_C15>0
 gen CC_InflaOnCG_C20 =.03 if Tot_Inv_C20>0

gen Z_CC_PV_C3 = Z_SumWolf_C3
 gen Z_CC_PV_C5 = Z_SumWolf_C5
 gen Z_CC_PV_C7 = Z_SumWolf_C7
 gen Z_CC_PV_C10 = Z_SumWolf_C10
 gen Z_CC_PV_C15 = Z_SumWolf_C15
 gen Z_CC_PV_C20 = Z_SumWolf_C20

gen CC_EconDep_C3 =.083 if Tot_Inv_C3>0
 gen CC_EconDep_C5 =.083 if Tot_Inv_C5>0
 gen CC_EconDep_C7 =.083 if Tot_Inv_C7>0
 gen CC_EconDep_C10 =.05 if Tot_Inv_C10>0
 gen CC_EconDep_C15 =.05 if Tot_Inv_C15>0
 gen CC_EconDep_C20 =.05 if Tot_Inv_C20>0

gen DM_InvC3 =.
 replace DM_InvC3 =1 if Tot_Inv_C3>0
 replace DM_InvC3 =0 if Tot_Inv_C3<1
 gen DM_InvC5 =.
 replace DM_InvC5 =1 if Tot_Inv_C5>0
 replace DM_InvC5 =0 if Tot_Inv_C5<1

```

gen DM_InvC7 =.
replace DM_InvC7 =1 if Tot_Inv_C7>0
replace DM_InvC7 =0 if Tot_Inv_C7<1
gen DM_InvC10 =.
replace DM_InvC10 =1 if Tot_Inv_C10>0
replace DM_InvC10 =0 if Tot_Inv_C10<1
gen DM_InvC15 =.
replace DM_InvC15 =1 if Tot_Inv_C15>0
replace DM_InvC15 =0 if Tot_Inv_C15<1

```

```

gen DM_InvC20 =.
replace DM_InvC20 =1 if Tot_Inv_C20>0
replace DM_InvC20 =0 if Tot_Inv_C20<1

```

*Calculating Cost of Capital

```

gen CostCap_C3 = (r_CC_ROE-CC_InflaOnCG_C3+CC_EconDep_C3)*((1-(TaxRate*Z_CC_PV_C3))/(1-TaxRate))
gen CostCap_C5 = (r_CC_ROE-CC_InflaOnCG_C5+CC_EconDep_C5)*((1-(TaxRate*Z_CC_PV_C5))/(1-TaxRate))
gen CostCap_C7 = (r_CC_ROE-CC_InflaOnCG_C7+CC_EconDep_C7)*((1-(TaxRate*Z_CC_PV_C7))/(1-TaxRate))
gen CostCap_C10 = (r_CC_ROE-CC_InflaOnCG_C10+CC_EconDep_C10)*((1-(TaxRate*Z_CC_PV_C10))/(1-TaxRate))
gen CostCap_C15 = (r_CC_ROE-CC_InflaOnCG_C15+CC_EconDep_C15)*((1-(TaxRate*Z_CC_PV_C15))/(1-TaxRate))
gen CostCap_C20 = (r_CC_ROE-CC_InflaOnCG_C20+CC_EconDep_C20)*((1-(TaxRate*Z_CC_PV_C20))/(1-TaxRate))

```

```

gen Baseline_CostCap_C3 = (r_CC_ROE-CC_InflaOnCG_C3+CC_EconDep_C3)*((1-
(TaxRate*Wolf_Sum_MACRS_C3))/(1-TaxRate))
gen Baseline_CostCap_C5 = (r_CC_ROE-CC_InflaOnCG_C5+CC_EconDep_C5)*((1-
(TaxRate*Wolf_Sum_MACRS_C5))/(1-TaxRate))
gen Baseline_CostCap_C7 = (r_CC_ROE-CC_InflaOnCG_C7+CC_EconDep_C7)*((1-
(TaxRate*Wolf_Sum_MACRS_C7))/(1-TaxRate))
gen Baseline_CostCap_C10 = (r_CC_ROE-CC_InflaOnCG_C10+CC_EconDep_C10)*((1-
(TaxRate*Wolf_Sum_MACRS_C10))/(1-TaxRate))
gen Baseline_CostCap_C15 = (r_CC_ROE-CC_InflaOnCG_C15+CC_EconDep_C15)*((1-
(TaxRate*Wolf_Sum_MACRS_C15))/(1-TaxRate))
gen Baseline_CostCap_C20 = (r_CC_ROE-CC_InflaOnCG_C20+CC_EconDep_C20)*((1-
(TaxRate*Wolf_Sum_MACRS_C20))/(1-TaxRate))

```

***Cost of Capital PV percents(or rates) to be put into a table like a MACRS Depreciaton table

*Creating The Present Value depreciation tables

* Class 3 Accelerated Dep

```

sum Z_Wolf_Yr0_C3 Z_Wolf_Yr1_C3 Z_Wolf_Yr2_C3 Z_Wolf_Yr3_C3 Z_Wolf_Yr4_C3 Z_SumWolf_C3 if
DM_NPVofAccDep_C3==1
sum Z_Wolf_Yr0_C5 Z_Wolf_Yr1_C5 Z_Wolf_Yr2_C5 Z_Wolf_Yr3_C5 Z_Wolf_Yr4_C5 Z_Wolf_Yr5_C5
Z_Wolf_Yr6_C5 Z_SumWolf_C5 if DM_NPVofAccDep_C5==1
sum Z_Wolf_Yr0_C7 Z_Wolf_Yr1_C7 Z_Wolf_Yr2_C7 Z_Wolf_Yr3_C7 Z_Wolf_Yr4_C7 Z_Wolf_Yr5_C7
Z_Wolf_Yr6_C7 Z_Wolf_Yr7_C7 Z_Wolf_Yr8_C7 Z_SumWolf_C7 if DM_NPVofAccDep_C7==1
sum Z_Wolf_Yr0_C10 Z_Wolf_Yr1_C10 Z_Wolf_Yr2_C10 Z_Wolf_Yr3_C10 Z_Wolf_Yr4_C10 Z_Wolf_Yr5_C10
Z_Wolf_Yr6_C10 Z_Wolf_Yr7_C10 Z_Wolf_Yr8_C10 Z_Wolf_Yr9_C10 Z_Wolf_Yr10_C10 Z_Wolf_Yr11_C10
Z_SumWolf_C10 if DM_NPVofAccDep_C10==1
sum Z_Wolf_Yr0_C15 Z_Wolf_Yr1_C15 Z_Wolf_Yr2_C15 Z_Wolf_Yr3_C15 Z_Wolf_Yr4_C15 Z_Wolf_Yr5_C15
Z_Wolf_Yr6_C15 Z_Wolf_Yr7_C15 Z_Wolf_Yr8_C15 Z_Wolf_Yr9_C15 Z_Wolf_Yr10_C15 Z_Wolf_Yr11_C15
Z_Wolf_Yr12_C15 Z_Wolf_Yr13_C15 Z_Wolf_Yr14_C15 Z_Wolf_Yr15_C15 Z_Wolf_Yr16_C15 Z_SumWolf_C15 if
DM_NPVofAccDep_C15==1

```

sum Z_Wolf_Yr0_C20 Z_Wolf_Yr1_C20 Z_Wolf_Yr2_C20 Z_Wolf_Yr3_C20 Z_Wolf_Yr4_C20 Z_Wolf_Yr5_C20
 Z_Wolf_Yr6_C20 Z_Wolf_Yr7_C20 Z_Wolf_Yr8_C20 Z_Wolf_Yr9_C20 Z_Wolf_Yr10_C20 Z_Wolf_Yr11_C20
 Z_Wolf_Yr12_C20 Z_Wolf_Yr13_C20 Z_Wolf_Yr14_C20 Z_Wolf_Yr15_C20 Z_Wolf_Yr16_C20 Z_Wolf_Yr17_C20
 Z_Wolf_Yr18_C20 Z_Wolf_Yr19_C20 Z_Wolf_Yr20_C20 Z_Wolf_Yr21_C20 Z_SumWolf_C20 if
 DM_NPVofAccDep_C20==1

sum Z_Wolf_Yr0_C3 Z_Wolf_Yr1_C3 Z_Wolf_Yr2_C3 Z_Wolf_Yr3_C3 Z_Wolf_Yr4_C3 Z_SumWolf_C3 if
 DM_179_NPVofAccDep_C3==1
 sum Z_Wolf_Yr0_C5 Z_Wolf_Yr1_C5 Z_Wolf_Yr2_C5 Z_Wolf_Yr3_C5 Z_Wolf_Yr4_C5 Z_Wolf_Yr5_C5
 Z_Wolf_Yr6_C5 Z_SumWolf_C5 if DM_179_NPVofAccDep_C5==1
 sum Z_Wolf_Yr0_C7 Z_Wolf_Yr1_C7 Z_Wolf_Yr2_C7 Z_Wolf_Yr3_C7 Z_Wolf_Yr4_C7 Z_Wolf_Yr5_C7
 Z_Wolf_Yr6_C7 Z_Wolf_Yr7_C7 Z_Wolf_Yr8_C7 Z_SumWolf_C7 if DM_179_NPVofAccDep_C7==1
 sum Z_Wolf_Yr0_C10 Z_Wolf_Yr1_C10 Z_Wolf_Yr2_C10 Z_Wolf_Yr3_C10 Z_Wolf_Yr4_C10 Z_Wolf_Yr5_C10
 Z_Wolf_Yr6_C10 Z_Wolf_Yr7_C10 Z_Wolf_Yr8_C10 Z_Wolf_Yr9_C10 Z_Wolf_Yr10_C10 Z_Wolf_Yr11_C10
 Z_SumWolf_C10 if DM_179_NPVofAccDep_C10==1
 sum Z_Wolf_Yr0_C15 Z_Wolf_Yr1_C15 Z_Wolf_Yr2_C15 Z_Wolf_Yr3_C15 Z_Wolf_Yr4_C15 Z_Wolf_Yr5_C15
 Z_Wolf_Yr6_C15 Z_Wolf_Yr7_C15 Z_Wolf_Yr8_C15 Z_Wolf_Yr9_C15 Z_Wolf_Yr10_C15 Z_Wolf_Yr11_C15
 Z_Wolf_Yr12_C15 Z_Wolf_Yr13_C15 Z_Wolf_Yr14_C15 Z_Wolf_Yr15_C15 Z_Wolf_Yr16_C15 Z_SumWolf_C15 if
 DM_179_NPVofAccDep_C15==1
 sum Z_Wolf_Yr0_C20 Z_Wolf_Yr1_C20 Z_Wolf_Yr2_C20 Z_Wolf_Yr3_C20 Z_Wolf_Yr4_C20 Z_Wolf_Yr5_C20
 Z_Wolf_Yr6_C20 Z_Wolf_Yr7_C20 Z_Wolf_Yr8_C20 Z_Wolf_Yr9_C20 Z_Wolf_Yr10_C20 Z_Wolf_Yr11_C20
 Z_Wolf_Yr12_C20 Z_Wolf_Yr13_C20 Z_Wolf_Yr14_C20 Z_Wolf_Yr15_C20 Z_Wolf_Yr16_C20 Z_Wolf_Yr17_C20
 Z_Wolf_Yr18_C20 Z_Wolf_Yr19_C20 Z_Wolf_Yr20_C20 Z_Wolf_Yr21_C20 Z_SumWolf_C20 if
 DM_179_NPVofAccDep_C20==1

sum Z_Wolf_Yr0_C3 Z_Wolf_Yr1_C3 Z_Wolf_Yr2_C3 Z_Wolf_Yr3_C3 Z_Wolf_Yr4_C3 Z_SumWolf_C3 if
 DM_Bonus_NPVofAccDep_C3==1
 sum Z_Wolf_Yr0_C5 Z_Wolf_Yr1_C5 Z_Wolf_Yr2_C5 Z_Wolf_Yr3_C5 Z_Wolf_Yr4_C5 Z_Wolf_Yr5_C5
 Z_Wolf_Yr6_C5 Z_SumWolf_C5 if DM_Bonus_NPVofAccDep_C5==1
 sum Z_Wolf_Yr0_C7 Z_Wolf_Yr1_C7 Z_Wolf_Yr2_C7 Z_Wolf_Yr3_C7 Z_Wolf_Yr4_C7 Z_Wolf_Yr5_C7
 Z_Wolf_Yr6_C7 Z_Wolf_Yr7_C7 Z_Wolf_Yr8_C7 Z_SumWolf_C7 if DM_Bonus_NPVofAccDep_C7==1
 sum Z_Wolf_Yr0_C10 Z_Wolf_Yr1_C10 Z_Wolf_Yr2_C10 Z_Wolf_Yr3_C10 Z_Wolf_Yr4_C10 Z_Wolf_Yr5_C10
 Z_Wolf_Yr6_C10 Z_Wolf_Yr7_C10 Z_Wolf_Yr8_C10 Z_Wolf_Yr9_C10 Z_Wolf_Yr10_C10 Z_Wolf_Yr11_C10
 Z_SumWolf_C10 if DM_Bonus_NPVofAccDep_C10==1
 sum Z_Wolf_Yr0_C15 Z_Wolf_Yr1_C15 Z_Wolf_Yr2_C15 Z_Wolf_Yr3_C15 Z_Wolf_Yr4_C15 Z_Wolf_Yr5_C15
 Z_Wolf_Yr6_C15 Z_Wolf_Yr7_C15 Z_Wolf_Yr8_C15 Z_Wolf_Yr9_C15 Z_Wolf_Yr10_C15 Z_Wolf_Yr11_C15
 Z_Wolf_Yr12_C15 Z_Wolf_Yr13_C15 Z_Wolf_Yr14_C15 Z_Wolf_Yr15_C15 Z_Wolf_Yr16_C15 Z_SumWolf_C15 if
 DM_Bonus_NPVofAccDep_C15==1
 sum Z_Wolf_Yr0_C20 Z_Wolf_Yr1_C20 Z_Wolf_Yr2_C20 Z_Wolf_Yr3_C20 Z_Wolf_Yr4_C20 Z_Wolf_Yr5_C20
 Z_Wolf_Yr6_C20 Z_Wolf_Yr7_C20 Z_Wolf_Yr8_C20 Z_Wolf_Yr9_C20 Z_Wolf_Yr10_C20 Z_Wolf_Yr11_C20
 Z_Wolf_Yr12_C20 Z_Wolf_Yr13_C20 Z_Wolf_Yr14_C20 Z_Wolf_Yr15_C20 Z_Wolf_Yr16_C20 Z_Wolf_Yr17_C20
 Z_Wolf_Yr18_C20 Z_Wolf_Yr19_C20 Z_Wolf_Yr20_C20 Z_Wolf_Yr21_C20 Z_SumWolf_C20 if
 DM_Bonus_NPVofAccDep_C20==1

****Cost of Capital by Class for All Investments (even those with Acc Dep)**

sum CostCap_C3 if DM_InvC3==1
 sum CostCap_C5 if DM_InvC5==1
 sum CostCap_C7 if DM_InvC7==1
 sum CostCap_C10 if DM_InvC10==1
 sum CostCap_C15 if DM_InvC15==1
 sum CostCap_C20 if DM_InvC20==1

****Cost of Capital by Class for Only MACRS**

sum CostCap_C3 if DM_NPVofAccDep_C3==0
sum CostCap_C5 if DM_NPVofAccDep_C5==0
sum CostCap_C7 if DM_NPVofAccDep_C7==0
sum CostCap_C10 if DM_NPVofAccDep_C10==0
sum CostCap_C15 if DM_NPVofAccDep_C15==0
sum CostCap_C20 if DM_NPVofAccDep_C20==0

****Cost of Capital by Class for Accelerated Depreciation Use (179 or Bonus)**

sum CostCap_C3 if DM_NPVofAccDep_C3==1
sum CostCap_C5 if DM_NPVofAccDep_C5==1
sum CostCap_C7 if DM_NPVofAccDep_C7==1
sum CostCap_C10 if DM_NPVofAccDep_C10==1
sum CostCap_C15 if DM_NPVofAccDep_C15==1
sum CostCap_C20 if DM_NPVofAccDep_C20==1

sum Baseline_CostCap_C3 if DM_NPVofAccDep_C3==1
sum Baseline_CostCap_C5 if DM_NPVofAccDep_C5==1
sum Baseline_CostCap_C7 if DM_NPVofAccDep_C7==1
sum Baseline_CostCap_C10 if DM_NPVofAccDep_C10==1
sum Baseline_CostCap_C15 if DM_NPVofAccDep_C15==1
sum Baseline_CostCap_C20 if DM_NPVofAccDep_C20==1

****Cost of Capital by Class for Section 179**

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1

sum Baseline_CostCap_C3 if DM_179_NPVofAccDep_C3==1
sum Baseline_CostCap_C5 if DM_179_NPVofAccDep_C5==1
sum Baseline_CostCap_C7 if DM_179_NPVofAccDep_C7==1
sum Baseline_CostCap_C10 if DM_179_NPVofAccDep_C10==1
sum Baseline_CostCap_C15 if DM_179_NPVofAccDep_C15==1
sum Baseline_CostCap_C20 if DM_179_NPVofAccDep_C20==1

****Cost of Capital by Class for Bonus Dep Ded**

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1

sum Baseline_CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1
sum Baseline_CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1
sum Baseline_CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1
sum Baseline_CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1

sum Baseline_CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1
sum Baseline_CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1

****Cost of Capital, 179 By Farm Type**

***Crop**

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & FarmCrop==1
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & FarmCrop==1
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & FarmCrop==1
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & FarmCrop==1
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & FarmCrop==1
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & FarmCrop==1

***Dairy**

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & FarmDairy==1
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & FarmDairy==1
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & FarmDairy==1
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & FarmDairy==1
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & FarmDairy==1
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & FarmDairy==1

***Diversified**

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & FarmDiversified==1
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & FarmDiversified==1
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & FarmDiversified==1
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & FarmDiversified==1
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & FarmDiversified==1
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & FarmDiversified==1

****Cost of Capital, Bonus By Farm Type**

***Crop**

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmCrop==1
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmCrop==1
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmCrop==1
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmCrop==1
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmCrop==1
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmCrop==1

***Dairy**

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDairy==1
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDairy==1
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDairy==1
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDairy==1
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDairy==1
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDairy==1

***Diversified**

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & FarmDiversified==1
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & FarmDiversified==1
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & FarmDiversified==1
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & FarmDiversified==1
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & FarmDiversified==1
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & FarmDiversified==1

***Cost of Capital By Asset Class by Year for MACRS Depreciation

sum CostCap_C3 if Year==2004 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2004 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2004 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2004 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2004 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2004 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2005 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2005 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2005 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2005 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2005 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2005 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2006 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2006 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2006 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2006 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2006 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2006 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2007 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2007 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2007 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2007 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2007 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2007 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2008 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2008 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2008 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2008 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2008 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2008 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2009 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2009 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2009 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2009 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2009 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2009 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2010 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2010 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2010 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2010 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2010 & DM_NPVofAccDep_C15==0

sum CostCap_C20 if Year==2010 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2011 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2011 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2011 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2011 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2011 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2011 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2012 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2012 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2012 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2012 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2012 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2012 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2013 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2013 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2013 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2013 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2013 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2013 & DM_NPVofAccDep_C20==0

sum CostCap_C3 if Year==2014 & DM_NPVofAccDep_C3==0
sum CostCap_C5 if Year==2014 & DM_NPVofAccDep_C5==0
sum CostCap_C7 if Year==2014 & DM_NPVofAccDep_C7==0
sum CostCap_C10 if Year==2014 & DM_NPVofAccDep_C10==0
sum CostCap_C15 if Year==2014 & DM_NPVofAccDep_C15==0
sum CostCap_C20 if Year==2014 & DM_NPVofAccDep_C20==0

***Cost of Capital 179 By Asset Class by Year

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & Year==2004
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & Year==2004
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & Year==2004
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & Year==2004
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & Year==2004
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & Year==2004

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & Year==2005
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & Year==2005
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & Year==2005
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & Year==2005
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & Year==2005
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & Year==2005

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & Year==2006
sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & Year==2006
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & Year==2006
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & Year==2006
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & Year==2006
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & Year==2006

sum CostCap_C3 if DM_179_NPVofAccDep_C3==1 & Year==2014

sum CostCap_C5 if DM_179_NPVofAccDep_C5==1 & Year==2014
sum CostCap_C7 if DM_179_NPVofAccDep_C7==1 & Year==2014
sum CostCap_C10 if DM_179_NPVofAccDep_C10==1 & Year==2014
sum CostCap_C15 if DM_179_NPVofAccDep_C15==1 & Year==2014
sum CostCap_C20 if DM_179_NPVofAccDep_C20==1 & Year==2014

***Cost of Capital Bonus By Asset Class by Year

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2004
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2004
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2004
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2004
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2004
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2004

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2005
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2005
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2005
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2005
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2005
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2005

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2006
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2006
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2006
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2006
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2006
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2006

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2007
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2007
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2007
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2007
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2007
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2007

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2008
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2008
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2008
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2008
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2008
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2008

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2009
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2009
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2009
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2009
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2009
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2009

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2010

sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2010
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2010
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2010
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2010
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2010

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2011
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2011
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2011
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2011
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2011
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2011

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2012
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2012
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2012
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2012
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2012
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2012

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2013
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2013
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2013
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2013
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2013
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2013

sum CostCap_C3 if DM_Bonus_NPVofAccDep_C3==1 & Year==2014
sum CostCap_C5 if DM_Bonus_NPVofAccDep_C5==1 & Year==2014
sum CostCap_C7 if DM_Bonus_NPVofAccDep_C7==1 & Year==2014
sum CostCap_C10 if DM_Bonus_NPVofAccDep_C10==1 & Year==2014
sum CostCap_C15 if DM_Bonus_NPVofAccDep_C15==1 & Year==2014
sum CostCap_C20 if DM_Bonus_NPVofAccDep_C20==1 & Year==2014

*Acres
sum Acres
egen Acre_IQR_ALL = iqr(Acres)
sum Acre_IQR_ALL
sum Acres, detail
sum Acres if FarmCrop==1
egen Acre_IQR_Crop = iqr(Acres)if FarmCrop==1
sum Acre_IQR_Crop
sum Acres if FarmCrop==1, detail
sum Acres if FarmDairy==1
egen Acre_IQR_Dairy = iqr(Acres)if FarmDairy==1
sum Acre_IQR_Dairy
sum Acres if FarmDairy==1, detail
sum Acres if FarmDiversified==1
egen Acre_IQR_Div = iqr(Acres)if FarmDiversified==1
sum Acre_IQR_Div
sum Acres if FarmDiversified==1, detail

```

*GFI
sum GrossFarmIncome
egen GFI_IQR_All = iqr(GrossFarmIncome)
sum GFI_IQR_All
sum GrossFarmIncome, detail
sum GrossFarmIncome if FarmCrop==1
egen GFI_IQR_Crop = iqr(GrossFarmIncome) if FarmCrop==1
sum GFI_IQR_Crop
sum GrossFarmIncome if FarmCrop==1, detail
sum GrossFarmIncome if FarmDairy==1
egen GFI_IQR_Dairy = iqr(GrossFarmIncome) if FarmDairy==1
sum GFI_IQR_Dairy
sum GrossFarmIncome if FarmDairy==1, detail
sum GrossFarmIncome if FarmDiversified==1
egen GFI_IQR_Div = iqr(GrossFarmIncome) if FarmDiversified==1
sum GFI_IQR_Div
sum GrossFarmIncome if FarmDiversified==1, detail

*Net Operating Profit
sum NOP
egen NOP_IQR_All = iqr(NOP)
sum NOP_IQR_All
sum NOP, detail

sum NOP if FarmCrop==1
egen NOP_IQR_Crop = iqr(NOP) if FarmCrop==1
sum NOP_IQR_Crop
sum NOP if FarmCrop==1, detail

sum NOP if FarmDairy==1
egen NOP_IQR_Dairy = iqr(NOP) if FarmDairy==1
sum NOP_IQR_Dairy
sum NOP if FarmDairy==1, detail

sum NOP if FarmDiversified==1
egen NOP_IQR_Div = iqr(NOP) if FarmDiversified==1
sum NOP_IQR_Div
sum NOP if FarmDiversified==1, detail

*Schedule F
sum SchF_FarmProf_Loss
egen SchF_IQR_All = iqr(SchF_FarmProf_Loss)
sum SchF_IQR_All
sum SchF_FarmProf_Loss if FarmCrop==1
egen SchF_IQR_Crop = iqr(SchF_FarmProf_Loss) if FarmCrop==1
sum SchF_IQR_Crop
sum SchF_FarmProf_Loss if FarmDairy==1
egen SchF_IQR_Dairy = iqr(SchF_FarmProf_Loss) if FarmDairy==1
sum SchF_IQR_Dairy
sum SchF_FarmProf_Loss if FarmDiversified==1

```

```
egen SchF_IQR_Div = iqr(SchF_FarmProf_Loss) if FarmDiversified==1
sum SchF_IQR_Div
```

```
*ROE
```

```
sum Int_ROE
egen Int_ROE_All = iqr(Int_ROE)
sum Int_ROE_All
sum Int_ROE if FarmCrop==1
egen Int_ROE_Crop = iqr(Int_ROE) if FarmCrop==1
sum Int_ROE_Crop
sum Int_ROE if FarmDairy==1
egen Int_ROE_Dairy = iqr(Int_ROE) if FarmDairy==1
sum Int_ROE_Dairy
sum Int_ROE if FarmDiversified==1
egen Int_ROE_Div = iqr(Int_ROE) if FarmDiversified==1
sum Int_ROE_Div
```

```
gen PV_All_Classes =
NPVofAccDep_C3+NPVofAccDep_C5+NPVofAccDep_C7+NPVofAccDep_C10+NPVofAccDep_C15+NPVofAccDep_C2
0
sum PV_All_Classes if DM_AccDepUse==1
egen Int_PV_All = iqr(PV_All_Classes)if DM_AccDepUse==1
sum Int_PV_All
sum PV_All_Classes if FarmCrop==1 & DM_AccDepUse==1
egen Int_PV_Crop = iqr(PV_All_Classes) if FarmCrop==1 & DM_AccDepUse==1
sum Int_PV_Crop
sum PV_All_Classes if FarmDairy==1 & DM_AccDepUse==1
egen Int_PV_Dairy = iqr(PV_All_Classes) if FarmDairy==1 & DM_AccDepUse==1
sum Int_PV_Dairy
sum PV_All_Classes if FarmDiversified==1 & DM_AccDepUse==1
egen Int_PV_Div = iqr(PV_All_Classes) if FarmDiversified==1 & DM_AccDepUse==1
sum Int_PV_Div
sum PV_All_Classes if DM_179Use==1
egen Int_PV179_All = iqr(PV_All_Classes)if DM_179Use==1
sum Int_PV179_All
sum PV_All_Classes if FarmCrop==1 & DM_179Use==1
egen Int_PV179_Crop = iqr(PV_All_Classes) if FarmCrop==1 & DM_179Use==1
sum Int_PV179_Crop
sum PV_All_Classes if FarmDairy==1 & DM_179Use==1
egen Int_PV179_Dairy = iqr(PV_All_Classes) if FarmDairy==1 & DM_179Use==1
sum Int_PV179_Dairy
sum PV_All_Classes if FarmDiversified==1 & DM_179Use==1
egen Int_PV179_Div = iqr(PV_All_Classes) if FarmDiversified==1 & DM_179Use==1
sum Int_PV179_Div
sum PV_All_Classes if DM_BonusUse==1
egen Int_PVBonus_All = iqr(PV_All_Classes)if DM_BonusUse==1
sum Int_PVBonus_All
sum PV_All_Classes if FarmCrop==1 & DM_BonusUse==1
egen Int_PVBonus_Crop = iqr(PV_All_Classes) if FarmCrop==1 & DM_BonusUse==1
sum Int_PVBonus_Crop
sum PV_All_Classes if FarmDairy==1 & DM_BonusUse==1
```

```
egen Int_PVBonus_Dairy = iqr(PV_All_Classes) if FarmDairy==1 & DM_BonusUse==1
sum Int_PVBonus_Dairy
sum PV_All_Classes if FarmDiversified==1 & DM_BonusUse==1
egen Int_PVBonus_Div = iqr(PV_All_Classes) if FarmDiversified==1 & DM_BonusUse==1
sum Int_PVBonus_Div

sum Tot_Depr_Deduction if DM_AccDepUse==1
sum GrossFarmIncome if DM_AccDepUse==1
sum SchF_FarmProf_Loss if DM_AccDepUse==1
```

REFERENCES

REFERENCES

- Abel, Andrew B. "Dynamic Effects of Permanent and Temporary Tax Policies in a Q Model of Investment." *Journal of Monetary Economics* 9.3 (1982): 353-73.
- Ariyaratne, C.B., and A.M. Featherstone. "Impact of Government Payments, Depreciation and Inflation on Investment Behavior in American Agriculture Sector Using Sample of Kansas Farms." Agricultural and Applied Economics Association Annual Meeting, 2009.
- Bierlen, Ralph, and A.M. Featherstone. "Fundamental q, cash flow, and investment: Evidence from farm panel data." *Review of Economics and Statistics* 80.3 (1998): 427-435.
- Boehlje, Michael, and Luther Tweeten. "The Impact Of Inflation On Farmers And Agriculture." (1980).
- Brazell, David W., and, James B. Mackie III. "Depreciation Lives and Methods: Current Issues in the U.S. Capital Cost Recovery System." *National Tax Journal* 53.3, Part 1 (2000): 531-62.
- Edwards, William. "Estimating Farm Machinery Costs." *Iowa State University Extension and Outreach, Ag Decision Maker*. N.p. May 2015. Web. 1 Apr. 2016.
- Edwards, W. and Boehlje, M. "Machinery selection considering timeliness losses." *Transactions of the American Society of Agricultural Engineers* 23.4 (1980): 810-815.
- Farmer, Roger E. A. "The Lucas Critique, Policy Invariance and Multiple Equilibria." *The Review of Economic Studies* 58.2 (1991): 321.
- Gloy, Brent A., and Eddy L. Ladue. "Financial Management Practices and Farm Profitability." *Agricultural Finance Review* 63.2 (2003): 157-74.
- Goolsbee, Austan. "Investment Tax Incentives, Prices, and the Supply of Capital Goods." *The Quarterly Journal of Economics* 113.1 (1998): 121-148.
- Guenther, Gary. "The Section 179 and Bonus Depreciation Expensing Allowances: Current Law and Issues for the 114th Congress." *CRS Report prepared for Members and Committees of Congress* (2015).
- Hadrich, Joleen C., Ryan Larsen, and Frayne E. Olson. "Impact of the Section 179 Tax Deduction on Machinery Investment." *Agricultural Finance Review* 73.3 (2013): 458-68.
- Hall, Robert E., and Dale W. Jorgensen. "Tax Policy and Investment Behavior." *The American Economic Review* 57.3 (1967): 391-414.

- Hassett, K.A. and R.G. Hubbard. 1996. "Tax Policy and Investment." *National Bureau of Economic Research* (NBER), Working Paper 5683.
- House, Christopher L., and Matthew D. Shapiro. "Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation." *American Economic Review* 98.3 (2008): 737-68.
- Jorgenson, Dale W. "Capital Theory and Investment Behavior." *The American Economic Review* 53.2, Papers and Proceedings of the Seventy-Fifth Annual Meeting of the American Economic Association (1963): 247-59.
- Lazarus, William F. "Machinery cost estimates." University of Minnesota Extension, St. Paul (2009).
- LeBlanc, Michael et al. "Farm Machinery Investment and the Tax Reform Act of 1986." *Journal of Agricultural and Resource Economics* 17.1 (1992): 66–79.
- Lui, L. 2011. "Do taxes distort corporations' investment choices? Evidence from industry level data." Centre for Business Taxation, Oxford University.
- Quick Stats, United States Department of Agriculture, National Agricultural Statistics Service.* Washington: GPO, 2016. 03 Apr. 2016.
- Reid, D.W. and Bradford, G.L. "A farm firm model of machinery investment decisions." *American Journal of Agricultural Economics* 69.1 (1987): 64-77.
- Reid, D.W., Musser, W.N. and Martin, N.R. Jr. "Consideration of investment tax credit in a multiperiod mathematical programming model of farm growth." *American Journal of Agricultural Economics* 60 (1980): 152-157.
- Rotz, C. Alan, Hannibal A. Muhtar, and J. Roy Black. "A multiple crop machinery selection algorithm." *Transactions of the ASAE* 26.6 (1983): 1644-1649.
- Sherlock, Molly. "Tax Provisions That Expired in 2014 ("Tax Extenders"). CRS Report prepared for Member and Committees of Congress. 2015.
- Smith, Dan Throop, and J. Keith Butters. "Depreciation and Depletion." *National Bureau of Economic Research* (1949): 53-86.
- U.S. Department of the Treasury, Internal Revenue Service. *Additional first year depreciation deduction.* IRS Pub. 26 CFR 1.168(k)-1. Washington: GPO, 2015.
- U.S. Department of the Treasury, Internal Revenue Service. *Farmer's Tax Guide.* IRS Pub. 225. Washington: GPO, 2015.

U.S. Department of the Treasury, Internal Revenue Service. *How to Depreciate Property*. IRS Pub. 946. Washington: GPO, 2015.

U.S. Department of the Treasury, Internal Revenue Service. *Schedule F (Form 1040), Profit or Loss From Farming*. IRS Pub. 1040. Washington: GPO, 2015.

U.S. Department of the Treasury, Office of Tax Analysis, *A History of Federal Tax Depreciation Policy*. IRS Pub. OAT Paper 64. Washington: GPO, 1989.

Weersink, A. and Stauber, S. "Optimal replacement interval and depreciation method for a grain combine." *Western Journal of Agricultural Economics* 13.1 (1988): 18-28.