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June 2018

Estimated Effects of the Tax Cuts and Jobs Act on Farms and Farm Households

James M. Williamson and Siraj G. Bawa



Department of the Treasury Internal Revenue Service

2016 Instructions for Schedule D

Capital Gains and Losses

These instructions explain how to complete Form 1040, line 8949 before you complete line 1b, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

- Use Schedule D:
 - To figure the overall capital gain or loss.
 - To report certain capital gains and losses.
 - To report a capital loss carryover from a previous year.
 - To report a capital loss carryover from a previous year.

SCHEDULE F (Form 1040)
Department of the Treasury Internal Revenue Service (99)
Name of proprietor

Principal crop or activity

Did you "materially participate" in the operation of this business during 2016?
 Yes No
 If "Yes," did you or will you file required Forms 1099?
 Yes No

1 Farm Income—Cash Method. Complete Parts I and II.
 Sales of livestock and other resale items (see instructions).
 Cost or other basis of livestock or other items reported on line 1a.
 Subtract line 1b from line 1a.
 Sales of livestock and other resale items (see instructions).

2016 U.S. Individual Income Tax Return
 Department of the Treasury—Internal Revenue Service (99)
 For the year Jan. 1–Dec. 31, 2016, or other tax year beginning _____, 2016, ending _____, 20
 OMB No. 1545-0074 IRS Use Only—Do not write in this area.

Form 1040
 Last name
 Last name
 Apt. no.
 Your first name and initial
 Spouse's first name and initial
 Enter code from Schedule C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ.



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James M. Williamson and Siraj G. Bawa

Abstract

Federal tax policy has the potential to affect the economic behavior and well-being of farm households, as well as the management and profitability of farms. Because the overwhelming majority of U.S. farms are organized as passthrough entities—sole proprietorships, partnerships, and S corporations—farm households are affected by individual income tax rates and preferences, in addition to deductions, credits, deferrals, and other tax provisions that pertain to businesses. The recently passed Tax Cuts and Jobs Act (TCJA) of 2017 made significant changes to the Federal income tax system. The TCJA eliminates or modifies many itemized deductions and tax credits, while lowering tax rates on individual and business income. At the same time, the TCJA expands some business provisions, in particular those that relate to capital cost recovery. It also doubles the estate tax exclusion by raising the amount to almost \$11.2 million for an individual. This report uses published and special tabulation data obtained from the Internal Revenue Service and farm-level data from USDA's Agricultural Resource Management Survey to analyze the impact the TCJA could have on family farms. We estimate that as a result of the changes made by the TCJA, family farm households would have faced an estimated average effective income tax rate of 13.9 percent if the TCJA had been in place in 2016. Under the previous tax law, family farm households faced an estimated average effective income tax rate of 17.2 percent. Although average tax rates are estimated to decline across all farm sizes and commodity specializations, the effects of the TCJA on farm households vary by farm size. Estimates also suggest 0.1 percent of farm estates will be subject to the estate tax under the new law, down from the 0.86 percent under previous law.

Keywords: Tax Cuts and Jobs Act, taxation, tax rate, farm investment demand, cost recovery, bonus depreciation, section 179, farm household well-being

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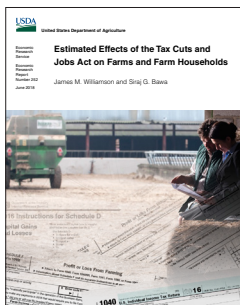
The authors would like to thank the following for technical peer reviews of this research: J.C. Hobbs, Oklahoma State University; Guido van der Hoeven, North Carolina State University; Tim Wojan, USDA, Economic Research Service (ERS); Daniel Prager, ERS; Ron Durst, retired from ERS; and one reviewer who requested anonymity. We also thank Margaret Carter and Curtia Taylor, ERS, for editorial and design services.

Contents

Summary	iii
Introduction	1
Legal Structure and Household Income of Family Farms	3
Legal Organization of Family Farms	3
Family Farm Household Income Characteristics	4
Taxation of Farm Income: The Federal Income Tax	7
Business Deductions	9
Individual Income Tax Brackets and Rates	14
Long-Term Capital Gains Taxation	14
Deductions for Household and Child Tax Credit	15
Alternative Minimum Tax	16
Income Averaging	17
The Federal Estate Tax	18
Simulation of Federal Income Taxes and Estate Taxes	21
Effective Income Tax Rates	21
Effective Marginal Tax Rates	24
Conclusion	28
References	29
Appendix A	31
Appendix B	33
Exhibit A. Form 1040	33
Exhibit B. Schedule F (Form 1040)	35
Appendix C	37
Documentation for Estate Tax Model	37

Errata

On March 25, 2019, the report *Estimated Effects of the Tax Cuts and Jobs Act on Farms and Farm Households* (ERR-252, June 2018) was reposted to correct the simulated effective tax rate under the 2017 Tax Cuts and Jobs Act (TCJA) for very large farms. The corrected rate—31.2 percent—was applied to the underlying data for the report summary chart, table 5, and the calculated difference between the simulated TCJA rate and the effective tax rate under the previous law. The associated text referencing the absolute rate was also revised.



Estimated Effects of the Tax Cuts and Jobs Act on Farms and Farm Households

James M. Williamson and Siraj G. Bawa

What Is the Issue?

Federal income tax rates and tax provisions affect the after-tax income of farm households, but they may also influence economic decisions such as labor force participation and labor allocation (hours worked on and off the farm), the household's investment portfolio, and the timing of income realization. U.S. farms are overwhelmingly organized as passthrough entities, meaning income from the operation is taxed at the individual level along with the farm household's income from other sources. Consequently, farm households are affected by both individual and business income tax rates and preferences as provided by deductions, credits, deferrals, and other provisions. The Tax Cuts and Jobs Act (TCJA), passed in December 2017, significantly changed the Federal income tax system, including individual and business income tax rates, business expenses, taxable income deductions, and the alternative minimum tax. The TCJA also doubled the Federal estate tax exclusion. This report estimates the impact of current Federal income tax provisions on farm households by using 2016 tax-year data.

What Did the Study Find?

In 2016, farms organized as passthrough entities constituted over 98 percent of family farms and 90 percent of the total value of U.S. agricultural production; thus, the biggest effects of the TCJA on farmers are from changes to the Federal individual income tax code.

We estimate that had the TCJA been in effect in 2016, family farm households would have faced an average effective tax rate of 13.9 percent that year versus 17.2 percent after factoring in several tax credits (Child Tax Credit, Earned Income Tax Credit, and Child and Dependent Care Tax Credit) but excluding self-employment taxes.

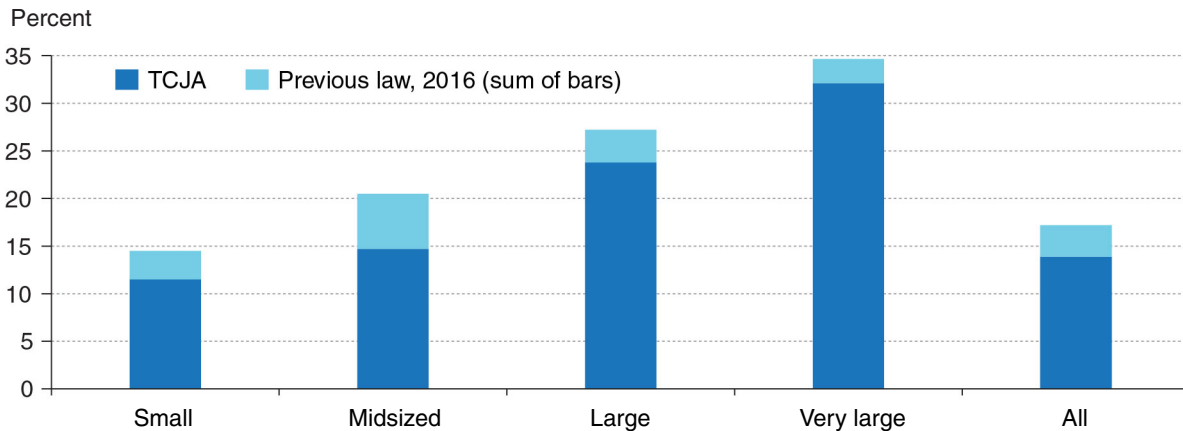
The reduction in average effective income tax rates resulting from the TCJA would have varied across family farm sizes, with midsized and large farms experiencing greater reductions (see figure). About 91 percent of family farms are small (less than \$350,000 gross cash farm income, or GCFI, before expenses). We estimate that the average small family farm household would have experienced a decrease of 3.0 percentage points in its effective income tax rate had the TCJA been in effect in 2016, while the average midsized (GCFI between \$350,000 and \$999,999) and large (GCFI between \$1 million and \$4,999,999) family farm households would have experienced decreases of 5.8 and 3.4 percentage points, respectively. Very large farms (GCFI greater than \$5 million) would have experienced a 2.6-percentage point reduction.

Under the TCJA, the average farm household in each commodity specialization is estimated to experience a decline in its average effective tax rate relative to previous law, but the size

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of the change varies across commodity specializations. Producers of high-value crops—fruits, nuts, vegetables, and nursery operators—and major row crops would have experienced an estimated tax rate decline of 4.0 percentage points in 2016 under TCJA. Producers of beef cattle, representing the greatest number of farms of any specialty, would have experienced a decline of 2.6 percentage points.

Estimated effective tax rates decline for all farm sizes



Note: Data in the chart are drawn from the report's table 5 and represent estimated 2016 effective income tax rates under the Tax Cuts and Jobs Act (TCJA) and previous law. Small farms are farms with less than \$350,000 gross cash farm income (GCFI); midsized farms have GCFI between \$350,000 and \$999,999; large farms have GCFI between \$1 million and \$4,999,999; very large farms have GCFI of at least \$5 million.

Source: USDA, Economic Research Service (ERS) estimates using data from the USDA, National Agricultural Statistics Service/ERS 2016 Agricultural Resource Management Survey.

The TCJA changes capital cost recovery provisions for purchases of equipment and other depreciable assets, but the change will likely affect only larger farms because they are most likely to make large investments in machinery, equipment, and other depreciable property/assets. Had the TCJA been in place for 2016, less than 1 percent of large farms and 10.5 percent of very large farms (GCFI at least \$5 million) are estimated to have made investments that could not be fully deducted in the year of purchase. In contrast, under previous law, 3.5 percent of large farms and almost a quarter of very large farms had made investments in depreciable assets above the first-year expensing limit.

Under the TCJA's new estate tax parameters, only an estimated 0.58 percent of farm estates (or 227 estates) would have been required to file an estate tax return in 2016, and only 0.11 percent (or 43 estates) would have owed an estate tax (for an aggregate estate tax liability of \$104 million). Using the previous law's parameters, we estimate 2.05 percent of farm estates were required to file an estate tax return, and 0.86 percent of farm estates had a tax liability, resulting in an estimated \$496 million of Federal estate tax revenue in 2016.

How Was the Study Conducted?

Using financial and demographic data for farms and farm households from USDA's Agricultural Resource Management Survey (ARMS) and data from the Internal Revenue Service, we constructed a tax simulation model to estimate family farm household adjusted gross income, taxable income, tax liability, and effective individual tax rates as well as effective marginal tax rates, under current and prior tax policies. For the Federal estate tax estimations, we computed an actuarial model using farm financial information from ARMS, mortality data from the Social Security Administration, and interest rate data from Farm Credit System lenders. This report does not account for behavioral changes by family farm households in response to the changed tax provisions; that is, we assume households would have made the same decisions in 2016 had the TCJA been in effect.

Estimated Effects of the Tax Cuts and Jobs Act on Farms and Farm Households

Introduction

Federal tax policy affects the economic behavior and well-being of farm households as well as the management and profitability of farm businesses. For example, income tax rates and tax provisions affect not only farm households' after-tax income but also their economic decisions, including decisions about labor force participation and labor allocation (hours worked), personal investment and the timing of income realization, housing, and even about family formation.¹ The tax code also includes special provisions that allow farms to allocate income and net losses across years to help smooth tax liabilities from characteristically volatile farm business earnings; and, farm capital investment is subject to accelerated cost recovery provisions that effectively lower the cost of capital.²

This report provides an overview of major income tax provisions of the 2017 Federal tax code reform that impact farm households and farms. The report examines the major elements of the 2017 Tax Cuts and Jobs Act (TCJA) and estimates how they may affect the tax liability of family farm households.³ We focus on the individual income tax provisions because the vast majority of family farms are organized as business entities that do not pay taxes themselves but, rather, pass the income/loss to the owners, where it is taxed at the individual level.

We develop an individual tax model to estimate farm operation and farm household tax measures, using a nationally representative sample of farms from USDA's 2016 Agricultural Resource Management Survey (ARMS). We simulate the effects of the TCJA on farm household tax liability as if the TCJA had been the prevailing tax law that year. The model uses farm household-level data and is restricted to family farms, defined as any farms where the majority of the business is owned by the operator and individuals related to the operator. While the tax model is rich in the number of income tax provisions covered (including earned income tax credit, itemized deductions, and others), it does not model behavioral changes by farmers in response to the TCJA. For example, our model does not estimate the number of farmers that could switch from livestock to crops (or vice versa) or change their equipment purchases as a response to changes by the TCJA.

The individual tax model is used to estimate farm households' Federal income tax liabilities in the aggregate and also by farm size and commodity specialization. We report farm household adjusted gross income (AGI), taxable income, and the effective average income tax rate. We also show how the TCJA will differentially affect farms by size (as measured by gross cash farm income before expenses, or GCFI) and by commodity specialization.

¹ A brief and noncomprehensive list of studies on these topics is Slemrod, 1995; Heckman, 1993; Eissa and Liebman, 1996; Dickert-Conlin and Chandra, 1999; Saez, 2002; Saez et al., 2012.

² See LeBlanc and Hrubovcak, 1986; Ariyaratne and Featherstone, 2009; Williamson and Stutzman, 2016.

³ Family farms accounted for over 98 percent of all farms in 2016 (Hoppe, 2017).

We estimate Federal estate taxes using the estate tax exclusion from the prior law and contrast them with the results using the new TCJA exclusion amounts. We develop an actuarial model that uses household data from ARMS 2016 and data from the Social Security Administration; the Farm Credit System; the USDA, National Agricultural Statistics Service (NASS) June Area Survey; and the Internal Revenue Service. We report estimates of Federal estate tax liabilities, farm estates required to file a return, farm estates owing a return, and the effective estate tax rate.

Legal Structure and Household Income of Family Farms

This section describes the characteristics of the U.S. farm sector and highlights the most important aspects of the tax code for family farm households. First, we show that family farms overwhelmingly choose to be organized as passthrough entities and, as such, the income from these businesses is subject to individual income taxes rather than corporate taxes. Then, we present the characteristics of farm household income to narrow the discussion to provisions of the tax code that could have the greatest impact on farm households.

Before proceeding, we define the terms “farm business” and “farm household” as used throughout this report. This report uses data for family farms from the USDA, National Agricultural Statistics Service (NASS)/Economic Research Service (ERS) Agricultural Resource Management Survey (ARMS); these types of farms represent over 98 percent of all farms (Hoppe, 2017). A family farm (hereafter just farm) is any farm where the majority of the business is owned by the operator and individuals related to the operator. The survey contains not only data for the farm business but also demographic and financial data for the farm operator’s household. When we use the term “farm business,” we refer to the family farm operation for which the survey respondent provided information. When we use the term “farm household,” we refer to the household of the farm operator who responded to the survey. The farm household includes not only the operator but also people living in the house; furthermore, the financial variables for the farm household include off-farm sources of income and wealth.

Legal Organization of Family Farms

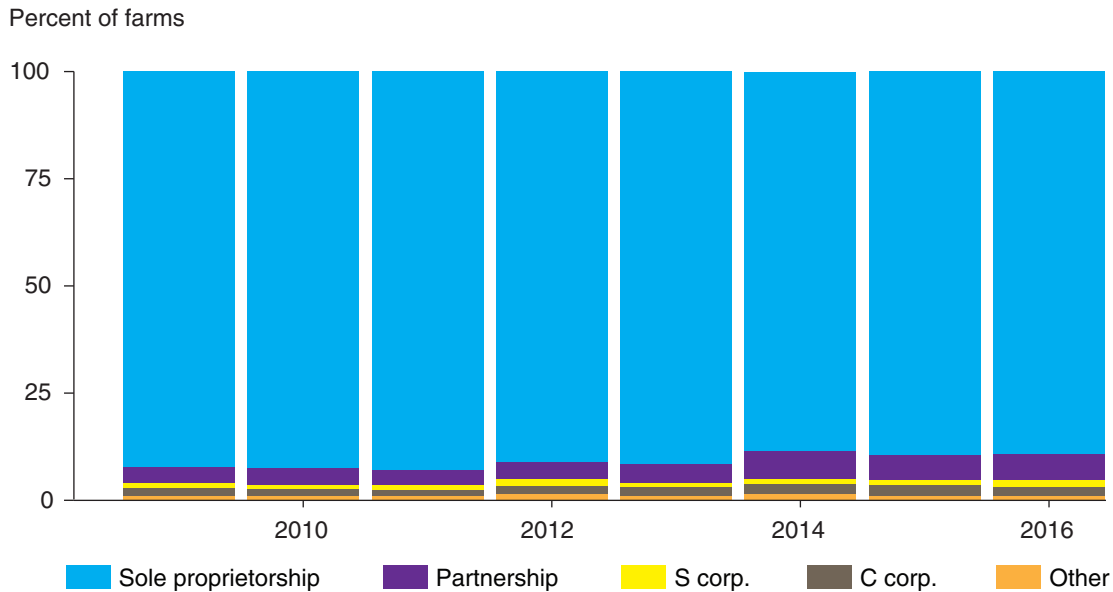
The legal organization of farms determines how its income is taxed. Farms that are sole proprietorships, partnerships, and Subchapter S corporations are passthrough entities, meaning any profit or loss from them is passed to the owner/partner/shareholder, and tax is paid at the individual level on their personal income tax returns. Farms may choose to organize as Subchapter C corporations (about 1.5 percent of family farms in 2016), and such corporations are liable for corporate income taxes; any dividends paid to their shareholders may be subject to individual income taxes as well.⁴

The ARMS data show that passthrough entities are the predominant form of legal organization for U.S. family farms. In 2016, over 98 percent of family farms were organized as passthrough entities, and 91 percent of production on family farms came from passthrough entities (fig. 1). Across the years, the data reveal a slight positive trend in the percentage of family farms organized as passthrough entities. In particular, the share of farms organized as partnerships has increased from 4 percent in 2009 to 6 percent in 2016. Subchapter S corporations also show an upward trend but not as significant as that of partnerships. The share of farms organized as C corporations has been mostly flat through this period.

⁴ In addition to the previously mentioned business forms, farms may choose to form a hybrid-type business structure known as a Limited Liability Company (LLC). LLCs are registered by individual States and regulated by State statutes. The Internal Revenue Service (IRS) definition of an LLC is: “An entity created by state statute. Depending on elections made by the LLC and the number of members, the IRS will treat an LLC either as a corporation, partnership, or as part of the owner’s tax return (a disregarded entity). Specifically, a domestic LLC with at least two members is classified as a partnership for federal income tax purposes unless it affirmatively elects to be treated as a corporation. An LLC with only one member is treated as an entity disregarded as separate from its owner for income tax purposes (but as a separate entity for purposes of employment tax and certain excise taxes), unless it affirmatively elects to be treated as a corporation.”

Figure 1

Distribution of family farms by legal organization, 2009–16



Note: Each of these organizational forms may also be a Limited Liability Company (LLC). In 2016, 7.5 percent of family farms were registered LLCs.

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2009–16.

Family Farm Household Income Characteristics

Family farm households receive income from both farming and off-farm activities. For most, off-farm income accounts for a large share of the household’s total income. For 2016, average farm household total income was an estimated \$117,918, with off-farm sources accounting for 80 percent (table 1). Table 1 also provides income figures by farm size, a classification based on thresholds of gross cash farm income before expenses (GCFI). From table 1, we can readily see that farm size is positively associated with the share and the level of household income from farming.

In many cases, farms have losses, and they can be used to offset off-farm income for income tax purposes. For 2016, average income from farming was \$24,731. This income figure is relatively low because a significant percentage of farms report negative income from farming or have low farm sales, which brings the average down. In fact, since 1980, family farm sole proprietors as a group have reported negative aggregate farm profits for tax purposes. Over the last decade, both the share of farmers reporting losses and the amount of losses reported have increased. In 2015, based on Internal Revenue Service (IRS) data, two out of every three farm sole proprietors reported a farm loss. For those who reported a loss, the average loss was \$21,502, for a total of \$27.5 billion. Not all farm losses are strictly the result of low earnings. For example, the increased reporting of losses has coincided with changes in Federal tax law that allow a business to write off, in the first year, a greater amount of investment in equipment and other depreciable capital.⁵

⁵ Figure 3 (p. 9) presents the IRS section 179 deduction limit amount for first-year expensing and additional depreciation (bonus depreciation) percentages since 2000.

Table 1

Estimated income and tax components under the Tax Cuts and Jobs Act for family farm households, 2016

	Family farm size				All
	Small	Midsized	Large	Very large	
Number of family farms	1,844,077	122,980	53,763	6,449	2,027,269
Average income	(Dollars)				
Total household income ¹	98,861	185,684	422,261	1,737,715	117,918
Farm business income from farming	2,971	119,140	357,203	1,674,839	24,731
Farm capital gains ²	492	4,134	12,151	28,466	1,111
Off-farm earned income	67,719	45,725	45,001	35,665	65,680
Off-farm unearned income	28,171	20,820	20,056	27,211	27,506
Off-farm capital gains ³	1,116	2,335	3,595	8,282	1,279
Adjusted gross income	90,041	188,420	424,538	1,742,813	110,138
Taxable income	70,268	149,170	376,667	1,576,427	87,972
After-tax income	84,060	143,034	299,444	1,136,822	97,088

Note: All figures are averages in dollars except number of farms. Small farms are farms with less than \$350,000 gross cash farm income (GCFI); midsized farms have GCFI between \$350,000 and \$999,999; large farms have GCFI between \$1 million and \$4,999,999; very large farms have GCFI of at least \$5 million.

¹ Total household income is the sum of farm business income, off-farm earned income, and off-farm unearned income, calculated across all farms of the given size.

² Reported averages calculated using all farms that belong to the given group size.

³ Off-farm capital gains are included in off-farm unearned income. Reported averages calculated using all farms that belong to the given group size.

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

A significant portion of farm households has net capital gains (36 percent in 2016). When a farm household sells a capital asset—including farm assets such as unimproved land and breeding/dairy livestock, or nonfarm assets such as common stock—it results in a “capital gain” or “capital loss.” If total capital gains are greater than total capital losses, the difference between the two is referred to as a net capital gain. In 2016, about 36 percent of all farm households reported net capital gains, either from the sale of farm assets or nonfarm assets or both. For family farm households with net capital gains, the average gains were \$8,037, with a majority of the gains (\$4,253) from farm business sources. In aggregate, these farmers reported \$5.8 billion in net capital gains (table 2).

Table 2

Estimates of net capital gains for family farm households by farm size, 2016

	Family farm size				All
	Small	Midsized	Large	Very large	
Number of family farms	1,844,077	122,980	53,763	6,449	2,027,269
Percent of family farm households with net capital gains ¹	36.3	31.2	30.7	38.4	35.9
Average for family farm households with net capital gains ¹ (\$)					
Off-farm net capital gains	3,235	8,598	12,188	21,565	3,784
Farm business net capital gains	2,223	18,135	43,652	75,941	4,253
Total average net capital gains	5,459	26,733	55,840	97,506	8,037
Aggregate net capital gains in 2016 (million \$)	3,657	1,025	922	241	5,845

¹ Farms with net capital gains (capital gains exceed capital losses).

Note: All figures are averages in dollars. Small farms are farms with less than \$350,000 gross cash farm income (GCFI); midsized farms have GCFI between \$350,000 and \$999,999; large farms have GCFI between \$1 million and \$4,999,999; very large farms have GCFI of at least \$5 million.

Source: USDA, Economic Research Service (ERS) analysis of USDA National Agricultural Statistic Service/ERS Agricultural Resource Management Survey data 2016.

Taxation of Farm Income: The Federal Income Tax

This section presents a brief background on a number of Federal income tax code provisions that affect family farm households. We provide a discussion of changes made by the TCJA (as well as some important tax provisions unchanged by the TCJA) and contrast them with the previous law. We provide economic context specific to the farm sector to illustrate the potential impact on farm households and businesses. Appendix A provides a succinct side-by-side comparison of the major provisions in the previous law and the Tax Cuts and Jobs Act.

Since over 98 percent of U.S. farms are passthrough entities, we focus on tax reforms affecting the Federal individual income taxes and not those strictly affecting corporate income taxes.⁶ The Federal individual income tax is a progressive tax imposed on net income, with allowances for the cost of earning the income (business expenses, including depreciation) as well as other special exceptions.⁷ Because taxes on farm income are paid at the individual level, changes to the individual income tax system could result in farm households experiencing significant changes to their after-tax income.

Individuals with passthrough farm income (or loss) report their farm income (or loss) on IRS Form 1040's Schedule F, as illustrated by figure 2.⁸ Schedule F provides an accounting of the farm's gross income, its usual expenses—feed, seed, fertilizer, and chemicals, for example—as well as other items that may be deducted from gross income, such as expensing of physical capital investments. The net income (or loss) from the farm is combined on the taxpayer's Form 1040 with income from other sources (off-farm, self-employment, unearned income, salaries and wages, etc.), and together they form the farm household's total income for tax purposes.

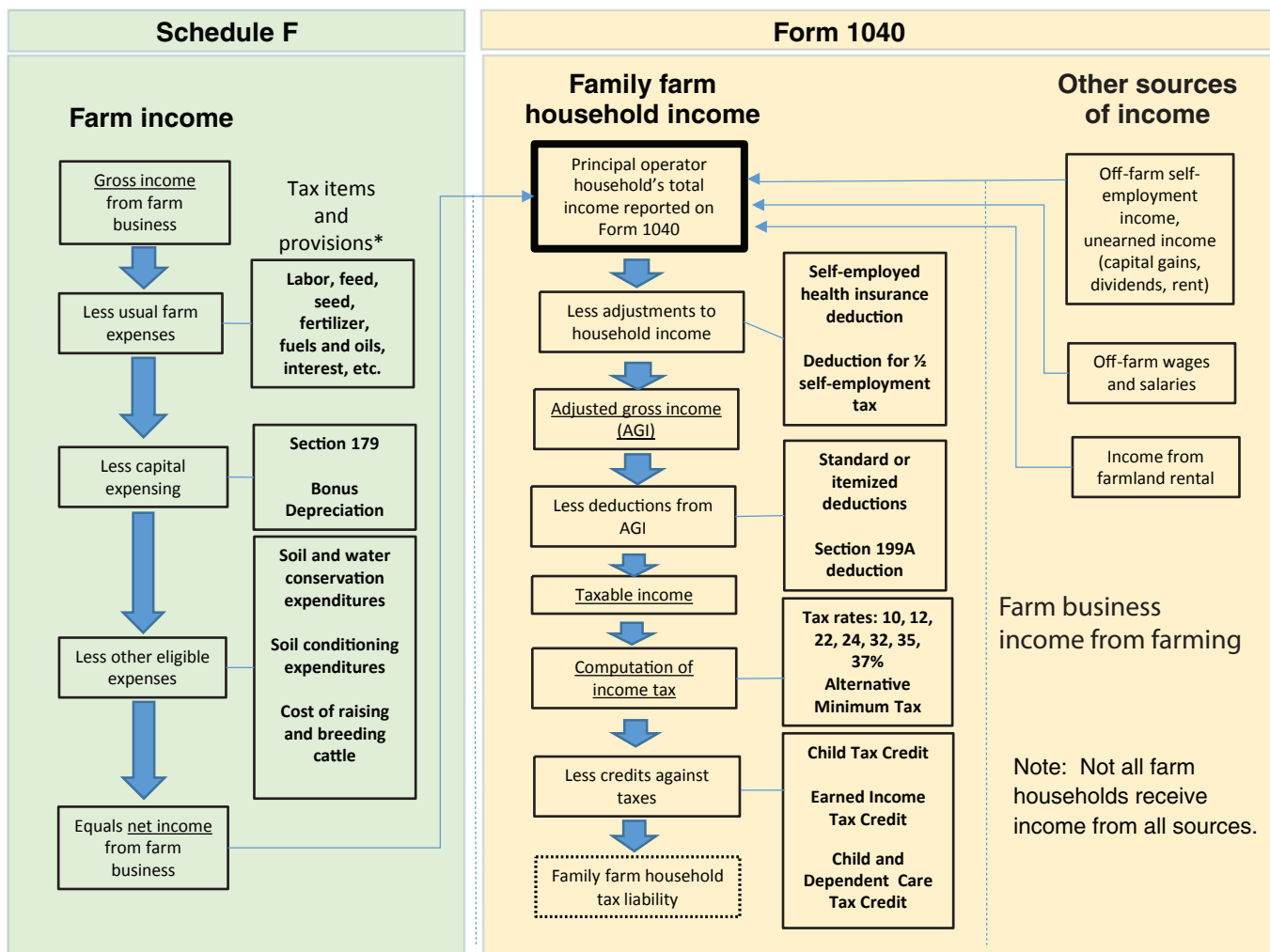
⁶ Farm households of C corporation farms are included in the analysis, and they represent 1.5 percent of family farms. In our analysis, we consider income received from the corporate farm as salary/wage income, thus subject to the individual income tax but not subject to the self-employment tax. C corporations must pay tax on excessive accumulated retained earnings and profits. If the corporate farm pays a dividend, the owners will be taxed on the dividend income as well. Therefore, we make the assumption that corporate farms will seek to minimize their tax liabilities by zeroing out earnings by paying the owners a salary/wage.

⁷ The tax is considered “progressive” when the rate of taxation increases as the level of income increases.

⁸ See appendix B Exhibits A and B for tax forms.

Figure 2

The flow of income to family farm households and major tax items and tax provisions under current law



Note: The list of tax items and provisions is not comprehensive; see appendix B Exhibit A and Exhibit B for all line items on Form 1040 and Schedule F (Form 1040), respectively.

Source: USDA, Economic Research Service.

Business Deductions

Deduction for Qualified Business Income of Passthrough Entities

The TCJA creates a new deduction for passthrough business income (section 199A) that is generally equal to 20 percent of “qualified business income” (QBI), effectively reducing the top marginal tax rate on the business income.^{9,10,11} In 2016, farm households had a total of \$68.2 billion in income from farms organized as passthroughs, inclusive of cooperative dividends. We estimate that just over 46 percent of all farm households would have had a 199A deduction if the TCJA had been in effect then, and the total amount of this deduction from taxable income would have been \$9.6 billion.

The ability of a farmer to use section 199A is limited by several factors. The amount of QBI must be positive; if QBI is negative, the loss may be carried back or forward to another year, depending on the individual tax situation. The deduction may also be limited by wages paid to farm labor that is directly hired (excluding contract labor). The limit begins for married taxpayers with taxable income exceeding \$315,000 (\$157,500 for single filers), and the deduction is reduced by the amount that QBI exceeds the allowable wages used in the calculation.¹²

Capital Cost Recovery for Businesses

Investment in depreciable capital assets is treated differently than other business expenses in the calculation of net taxable income. Depreciable capital assets are assets that have a finite useful life of more than 1 year. Examples of these types of assets are machinery, equipment, farm buildings, and cattle used for dairy. Note that farm land *is not* a depreciable asset as it does not have a finite useful life. Since depreciable capital has a multiyear life span, businesses are allowed to deduct from their yearly taxable income only a portion of the cost of the investment. This deduction is known as depreciation. The timeframe over which the investment is deducted is determined by the type of asset and the depreciation schedule of the tax code.¹³

The TCJA modifies two sections of the tax code that, when used in conjunction, allow most businesses to fully deduct the cost of the depreciable capital investment in the year of purchase. *Section 179* allows businesses to deduct depreciable capital costs in the year of the purchase up to a limit amount, rather than spreading the costs out over the useful life of the asset. In 2017, the limit

⁹ Deduction is temporary and applies for taxable years beginning after December 31, 2017, and before January 1, 2026.

¹⁰ Maximum statutory rate for passthrough income is: $(1 - 0.2) \times 37$ percent = 29.6 percent.

¹¹ Originally, the TCJA included an additional deduction for “qualified cooperative dividends” received, which include patronage dividends, per-unit retain allocations, or written notice of allocations, and was generally equal to 20 percent of the gross value of business the farm conducts with the cooperative (qualified cooperative dividends are defined by section 1388 of the Internal Revenue Code). Under the TCJA, these cooperative dividends were excluded from qualified business income. Subsequent to the TCJA, the Consolidated Appropriations Act of 2018 (Public Law 115-141) modified the newly created section 199A by eliminating the extra deduction for qualified cooperative dividends. Instead, farmers are allowed to include such dividends in their calculation of qualified business income, but with limits: The 199A deduction must be reduced by the lesser of 9 percent of the value of business conducted with an agricultural/horticultural cooperative or 50 percent of W-2 wages paid.

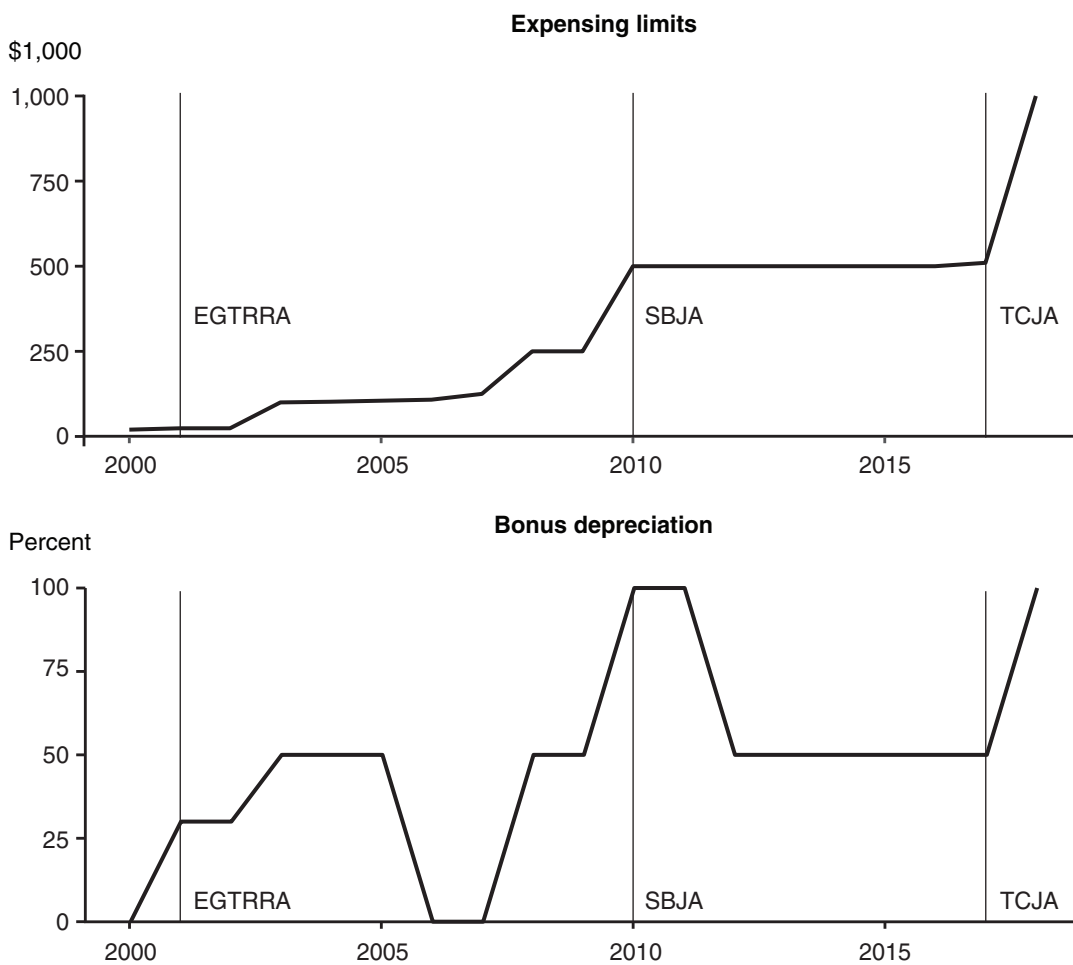
¹² Taxable income is calculated without regard to section 199A when computing the section 199A deduction.

¹³ The recovery period ranges from 3 to 39 years, depending on the type of farm asset. For example, cattle (dairy and breeding) have a 5-year recovery period, while farm machinery/equipment has a 7-year recovery period. Single-purpose farm structures are recovered over 10 years.

amount was \$510,000, and the TCJA raises it to \$1 million. Businesses with investments above the section 179 limit are allowed to take an additional first-year depreciation deduction (“bonus depreciation”) in the year of purchase on a set percentage of their investment amount above the section 179 limit. *Section 168(k)* contains the bonus depreciation percentages. The previous law allowed a 50-percent bonus depreciation, while the TCJA expands this limit to 100 percent for 2018 through 2022. Thereafter, it is reduced by 20 percentage points every year until it is fully eliminated in 2027. The new law also expands the definition of capital assets that qualify for bonus depreciation to include used assets, whereas under prior law, bonus depreciation was available only to newly manufactured capital assets. Since businesses are now allowed to take 100 percent of the difference between their investment and the section 179 limit, the TCJA effectively allows for a full deduction during the year of the investment.

Figure 3

Section 179 expensing deduction limits and bonus depreciation rates



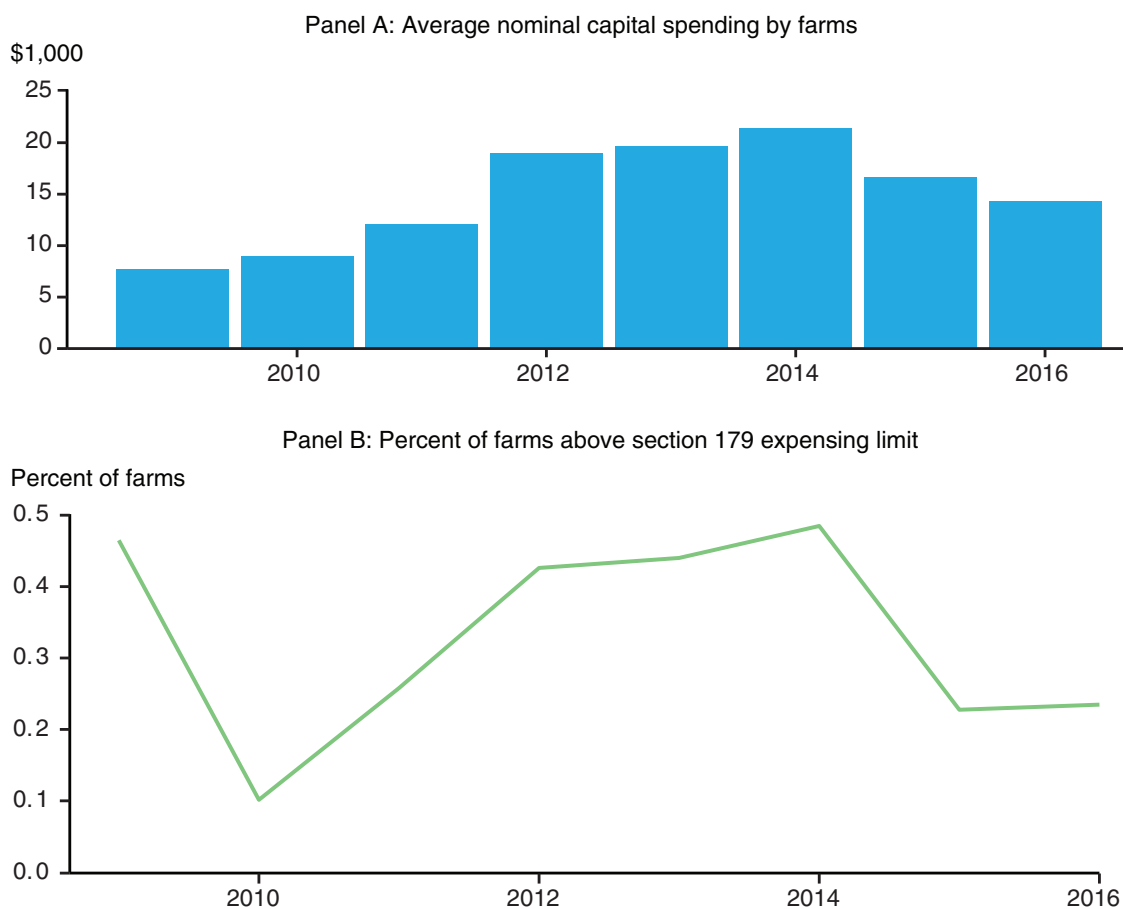
Note: The expensing limit applies to each taxpayer, not the business entity. In the case of a partnership, for example, each partner is subject to the \$1 million limit in 2018. Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA 2001); Small Business Jobs Act of 2010 (SBJA 2010); Tax Cuts and Jobs Act of 2017 (TCJA 2017). The 2012 limits were set retroactively in 2013 by the American Taxpayer Relief Act of 2012. Before this act, the limits for 2012 were \$ 25,000 and 0 bonus depreciation rates.

Source: Internal Revenue Service, various revenue procedures; Public Law 115-97 (TCJA 2017).

While the full expensing of capital assets in the year of purchase brought about by the TCJA may appear to have a substantial impact on the farming sector, it will likely have little practical effect on the majority of farms because most make investments in depreciable capital assets that are below the previous maximum thresholds of section 179. In 2009–16, less than 1 percent of farms made such investments above the section 179 limit (fig. 4). The average annual investment in depreciable capital assets increased steadily from nearly \$7,747 in 2009 to a peak of \$21,401 in 2014. In 2016, average annual investment declined to approximately \$14,283.

Figure 4

Average nominal capital spending by family farms, and family farms with capital spending exceeding the section 179 maximum deduction limit



Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2009–16.

Capital investment patterns vary considerably across farm sizes, with large and very large farms benefiting the most from the capital cost recovery changes. For 2016, 24 percent of very large farms and 3.5 percent of large farms made investments above the previous law’s section 179 threshold (table 3). Under the TCJA, the share of farms with investments above the section 179 limit drops to 10.5 percent for very large farms and 0.8 percent for large farms. In contrast, 0.53 percent of midsized farms and 0.04 percent of small farms had investments above the previous law’s section 179 limits. The TCJA reduces these percentages to 0.1 percent of midsized farms and 0 percent of small farms.

Table 3

Purchases of depreciable property and depreciation expenses by farm size, 2016

	Family farm size			
	Small	Midsized	Large	Very large
Number of family farms	1,844,077	122,980	53,763	6,449
Percent of family farms	90.9	6.1	2.7	0.3
Gross cash farm income (\$)	36,817	581,942	1,776,913	10,413,691
Percent of value of production	24.9	25.1	29.6	20.4
Farm size (average operated acres)	246	1,545	2,564	3,596
Farm size (median operated acres)	70	874	1,701	1,523
Percent of acres	56.4	23.6	17.1	2.9
Purchase of depreciable property:				
Average amount, all family farms (\$)	7,868	49,027	108,692	398,992
Percent with a purchase	38.3	70.4	72.9	85.9
Purchase above section 179 limit				
Above TCJA limit (percent)	0.0	0.1	0.8	10.5
Above previous law limit (percent)	0.04	0.53	3.49	23.9
Percent with a depreciation expense ¹	39.2	93.4	97.6	100.0
Average depreciation (\$)	4,595	47,698	113,707	429,719

TCJA = Tax Cuts and Jobs Act.

Note: Small farms are farms with less than \$350,000 gross cash farm income (GCFI); midsized farms have GCFI between \$350,000 and \$999,999; large farms have GCFI between \$1 million and \$4,999,999; very large farms have GCFI of at least \$5 million. Land is not included in this analysis because land is not depreciable.

¹ Includes depreciation expenses and Section 179 deduction amount.

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

The economic literature has numerous studies exploring the effects of investment recovery tax provisions on business investment decisions, but very few papers specifically look at the agricultural sector. Hadrach et al. (2013) use North Dakota Farm and Ranch Business Association data over 1993–2011 and find that increasing the section 179 limits has a small positive effect on farms' machinery investment. More recently, Williamson and Stutzman (2016), using ARMS data over 1996–2012, show that for every \$1,000 increase in section 179 expensing amount, farms made an incremental capital investment of between \$320 and \$1,110. That paper also shows that increasing the percentage allowance of bonus depreciation (section 168(k)), for the most part, did not have a statistically significant effect on farm capital investment. This result is due to the majority of farms making investments below the section 179 deduction limit. Therefore, there were no capital costs left over to expense under the bonus depreciation provision.

Self-Employed Health Insurance Deduction

The TCJA did not modify the self-employed health insurance deduction, a provision we estimate to be used by about one in five family farm households. The self-employed health insurance deduction was created in 1988 to give small business owners, including farmers, tax benefits similar to those of employees who receive employer-deductible health insurance. Since 2003, farmers and other self-employed taxpayers have been allowed to deduct 100 percent of the cost of providing health

insurance for themselves and their families as long as they are not eligible for any employer-sponsored plan. The self-employed health insurance deduction is limited to the amount of the taxpayer's income from self-employment, thereby eliminating the deduction for farmers with net farm losses.

Over 50 percent of farm households obtain their insurance through off-farm employment of the operator or spouse, which helps account for the low number of farmers claiming the deduction. Many other farmers are over age 65 and are covered by Medicare or other Government programs (Jones et al., 2009). In 2016, we estimate that farmers meeting the self-employed health deduction eligibility criteria had an average health insurance premium cost of \$7,633, for a total of \$3.6 billion in health insurance premiums.

Nearly one out of every two operators of midsized and large-scale farms are eligible to claim the self-employed health insurance deduction. Households of small farms, on the other hand, are less likely to be eligible to claim the deduction, primarily because greater proportions of these households receive health insurance from a nonfarm job or do not qualify for the deduction due to reporting a farm loss.

Business Interest Expense Deduction

Debt is used in agriculture to finance capital purchases such as machinery, equipment, and breeding livestock, as well as land. Debt is also used to finance short-term operations (operating loans), paying for such things as seed, feed, and chemicals. The sector reported paying \$8.7 billion in total interest (excluding interest paid on the operator's dwelling) on \$226 billion of debt, based on 2016 ARMS estimates.

Under the TCJA generally, the business interest deduction is now limited to business interest income plus 30 percent of adjusted taxable income with two exceptions: (1) businesses with less than \$25 million of gross receipts are exempt from the 30-percent adjusted taxable income limitation; and (2) farms are not subject to the \$25 million limit as long as they use the Alternative Depreciation System to depreciate farming business property with a recovery period of 10 years or more.¹⁴ The number of farms affected by the exemption limit is likely minimal because very large farms—\$5 million or more in gross cash receipts—account for 0.3 percent of family farms. Under previous law, interest paid on debt that was used to finance the purchase of business property or to finance business activity was generally fully deductible by businesses as an expense.

Among all family farms in 2016, one-third incurred business interest expenses, but the incidence of this expense varies by farm size. Around 80 percent of midsized and larger farms reported interest expense, while only 24 percent of small farms reported interest expense. Overall, larger farms carry more debt and thus have greater interest expenses than smaller farms. Small farms reported an average interest expense of \$6,809, while midsized farms had \$21,286. Large farms had more than twice the interest expense of midsized farms (\$52,201), potentially worth \$19,314 in reduced tax liability if the farm household is in the top marginal tax bracket of 37 percent under the TCJA.

¹⁴ The Internal Revenue Service requires the use of the Modified Accelerated Cost Recovery System (MACRS) to recover the cost of most business and investment property that has not been expensed under accelerated cost recovery provisions. Under MACRS, two depreciation systems determine what property is depreciable and how long it must be depreciated—the General Depreciation System and the Alternative Depreciation System.

Individual Income Tax Brackets and Rates

The TCJA retains the same number of brackets as previous law, but it reduces most marginal tax rates for individuals and increases the income thresholds of some of the brackets (table 4). Under the TCJA, the marginal tax rates range from 10 percent to 37 percent, compared to the previous range of 10 percent to 39.6 percent. The 15-, 25-, and 28-percent brackets decrease to 12, 22, and 24 percent, respectively, under the TCJA.¹⁵ The previous 35-percent bracket remains, but the bracket's taxable-income range expands by decreasing the lower income bound and increasing the upper income bound. The top marginal rate decreases to 37 percent from 39.6 percent. In addition, the minimum income to be in the top bracket increases significantly.

Table 4

Individual income tax brackets and tax rates under the Tax Cuts and Jobs Act and previous law

Rate	Tax Cuts and Jobs Act*	
	Unmarried individuals	Married individuals filing joint return
	Taxable income over	Taxable income over
10%	\$0	\$0
12%	\$9,525	\$19,050
22%	\$38,750	\$77,400
24%	\$82,500	\$165,000
32%	\$157,500	\$315,000
35%	\$200,000	\$400,000
37%	\$500,000	\$600,000
Rate	Previous law	
	Unmarried individuals	Married individuals filing joint return
	Taxable income over	Taxable income over
10%	\$0	\$0
15%	\$9,325	\$18,650
25%	\$37,950	\$75,900
28%	\$91,900	\$153,100
33%	\$191,650	\$233,350
35%	\$416,700	\$416,700
39.6%	\$418,400	\$470,700

* The tax rates and brackets created under the Tax Cuts and Jobs Act are temporary and apply for taxable years beginning after December 31, 2017, and before January 1, 2026.

Source: IRS Revenue Procedure 2016-55.

Long-Term Capital Gains Taxation

A capital gain (loss) occurs when the proceeds from the sale of a capital asset—such as stocks, bonds, buildings, machinery, or land—are greater (smaller) than the asset's original value. A capital gain is considered long term when the capital asset is held for more than a year; capital gains from

¹⁵ New brackets are temporary and apply for taxable years beginning after December 31, 2017, and before January 1, 2026.

the sale of assets held for less than 1 year are short-term gains. For example, a farmer sells stocks for a total of \$1,000. The farmer originally purchased those stocks 2 years ago at a price of \$900 (the original cost). Hence, the farmer would have a long-term capital gain of \$100.

The TCJA retains the previous law's taxation of capital gains, with short-term capital gains taxed at the same rates as other sources of income and long-term capital gains taxed at lower rates. For many taxpayers, the capital gains tax rate is 15 percent for long-term capital gains. However, there are exceptions. Taxpayers in the 10-percent or 12-percent bracket have no tax liability from their long-term capital gains. Taxpayers in the top bracket (37 percent) face a 20-percent tax rate on their long-term capital gains. A gain from qualified small business stock held more than 5 years is taxed at a 28-percent rate but only on half of the gain, resulting in an effective 14-percent tax rate. The TCJA also retains the Net Investment Income Tax, which is a surtax of 3.8 percent on capital gains for high-income taxpayers.¹⁶

Reduced capital gains rates are especially significant for farmers because farmers realize a greater share of their income from capital gains than the average taxpayer. Farmers may have capital gains or losses from sales or exchanges involving capital assets (whether part of the business or not) that are not subject to depreciation—land for example—as well as from sales or exchanges of depreciable business property.¹⁷ Under current tax law, some or all of the proceeds from the sale or exchange of depreciable business property may be treated as a capital gain and taxed at the lower capital gains rate (or in the case of a loss, treated as an ordinary loss).

Deductions for Household and Child Tax Credit

The TCJA doubles the standard deduction amount and eliminates the personal exemption.¹⁸ Single filers can claim a \$12,000 standard deduction, up from \$6,300 in the previous law, while married filers are allowed to claim a standard deduction of \$24,000, up from \$12,000. Previous law also included the personal exemption, which allowed the tax filer an exemption of \$4,050 per filer and dependents.

The TCJA also eliminates a number of miscellaneous itemized deductions, and, importantly, those that are retained have been modified and/or capped to a new binding dollar limit.¹⁹ The eliminated miscellaneous itemized deductions include certain unreimbursed employee expenses, expenses incurred to collect taxable income that must be included in gross income, and expenses paid to manage, conserve, or maintain property held to produce income.

The mortgage interest deduction now applies to mortgage indebtedness up to \$750,000, down from the \$1 million limit under the previous law. After 2025, the limit returns to \$1 million. State, local,

¹⁶ The Net Investment Income Tax (NIIT) was instituted in January 2013 and affects individuals who have net investment income (interest, dividends, capital gains, rental income, and other gains from financial instruments) and whose modified adjusted gross income exceeds a threshold of \$250,000 (married filing jointly), \$200,000 (single filer); threshold values are not indexed for inflation.

¹⁷ The latter gains and losses are covered under Internal Revenue Code section 1231.

¹⁸ The new standard deduction is temporary and applies for taxable years beginning after December 31, 2017, and before January 1, 2026. The personal exemption is suspended for taxable years beginning after December 31, 2017, and before January 1, 2026.

¹⁹ Examples of some of the itemized deductions eliminated by the TCJA: unreimbursed employee expenses, tax preparation fees, theft and personal casualty losses, and other miscellaneous deductions. For farmers, the casualty loss deduction might have a sizable impact; however, the law still allows for certain casualty losses in a federally declared disaster to be claimed as a deduction.

and property taxes (SALT) were fully deductible under the previous law but are now capped by the TCJA. Under the new law, taxpayers may deduct a combination of State, local, and property taxes up to a maximum of \$10,000.²⁰ Medical expenses above 7.5 percent of adjusted gross income (AGI) can be itemized under the TCJA through the end of 2018, after which the limit is scheduled to return to 10 percent. For the charitable donations deduction, the percentage limit for cash donations by an individual taxpayer is increased from 50 percent to 60 percent of the taxpayer's contribution base.²¹ The phaseout of itemized deduction amounts for high-income taxpayers is repealed under the TCJA. Previously, married taxpayers with AGI greater than \$311,300 (\$259,400 for single taxpayers) would have had their itemized deduction amount reduced by an amount that increases with the difference between AGI and the phaseout income threshold.

The TCJA also includes a Child Tax Credit of \$2,000, although it is phased out beginning with AGI over \$200,000 for individuals and \$400,000 for married persons filing jointly. The refundable portion, or the amount that a taxpayer might receive as a payment in excess of his or her tax liability, is capped at \$1,400. To qualify for a Child Tax Credit refund, the taxpayer must have earned income of at least \$2,500. The Child Tax Credit under previous law was \$1,000 per qualifying child, and the phaseout began for married (single) taxpayers with AGI above \$110,000 (\$75,000). The credit was refundable for taxpayers in the 10-percent tax bracket with at least \$3,000 in earned income.

Alternative Minimum Tax

The TCJA retains the alternative minimum tax (AMT) but significantly increases the exemption amounts. The AMT may apply to some taxpayers with high incomes and significant deduction amounts. Under the AMT rules, individuals may have to recalculate their taxes in such a way that many of the tax benefits that help to offset tax liability are forgone. In some cases, these tax benefits are added back into the farmer's adjusted gross income, thus increasing it and creating a new measure of taxable income known as *alternative minimum taxable income*. The individual is responsible for the AMT only if the tentative minimum tax (the amount figured under the AMT rules) is greater than the regular tax computed under the standard method—that is, the AMT represents the additional tax owed over the regular income tax.²²

The previous tax law's AMT tax rates of 26 percent and 28 percent remain unchanged under the TCJA. Among all family farms, the average AMT owed was \$222. We estimate that under the TCJA, 3.1 percent of farm households would owe AMT tax based on 2016 data, for an average amount of \$7,270, conditional on owing AMT, which is in addition to any regular income tax owed. Under previous law, 3.8 percent of farm households owed AMT, and the average amount was \$7,289, conditional on owing the tax.

²⁰ The limit on SALT deductions is temporary and applies for taxable years beginning after December 31, 2017, and before January 1, 2026.

²¹ The contribution base is the taxpayer's AGI calculated without regard to any net operating loss (NOL) carryback to the taxable year.

²² In general, the tentative minimum tax is computed by:

1. Computing taxable income after eliminating or reducing certain exclusions and deductions, and making adjustments with respect to when certain items are taken into account during the computation of regular taxable income and alternative minimum taxable income (AMTI),
2. Subtracting the AMT exemption amount,
3. Multiplying the amount computed in (2) by the appropriate AMT tax rates.

Income Averaging

Farmers have been eligible for income averaging since 1998, and the TCJA retains this provision. Under the income averaging provision, a farmer can elect to shift a specified amount of farm income, including gains on the sale of farm assets other than land, to the preceding 3 years and pay taxes at the rate applicable to each year. Income that is shifted back is spread equally among the 3 years. If the marginal tax rate was lower during one or more of the preceding years, a farmer may pay less tax than he or she would without the option of income averaging. The provision, however, does not allow income from previous years to be brought forward. Furthermore, although the provision is designed to reduce the effect of farm income variability, as long as some farm income is available to be shifted, the source of income variability does not need to be farm income for income averaging to be beneficial.²³

The reduced tax rates of the TCJA, combined with other changes such as the deduction for business income, will likely mean fewer farmers will use this provision in 2018 and beyond. In 2004, an estimated 50,800 farmers—or about 5 percent of farms—reduced their tax liability on average by \$4,434 with income averaging (Peirce and Jezek, 2009). The reduced liability totaled \$225.3 million and amounted to a 23-percent reduction in Federal income taxes for those taking advantage of the provision compared with the amount that they would have owed without income averaging. More than a third of the total tax reduction for the tax year was realized by farmers with adjusted gross income over \$1 million. These farmers reduced their liability by an average of \$264,000, for a total of \$82.6 million.

Variability of farm household income generally exceeds that of all U.S. households, and under a progressive tax rate system, taxpayers whose annual income fluctuates widely may pay higher total taxes over a multiyear period than other taxpayers with similar yet more stable income. The variability of farm households' income is attributed to fluctuations in farm output (due to weather and pests, for example), commodity prices, and farm business cycles. A 2017 USDA, ERS study indicates that for midsized and large family farms—those responsible for about 80 percent of the value of U.S. agricultural output—the median change in total income between years was about eight times larger than for nonfarm households (Key et al., 2017). The study used USDA's ERS/NASS ARMS data for 1996 through 2013 and found that farm income (including Government payments) accounted for 79.6 percent of the total income variation for the farm households studied, while 10.5 percent of the variation was from off-farm wage income and 9.9 percent of income variation was from other off-farm income.

²³ In addition, farms have the ability to smooth their tax liability through the use of cash accounting—a method of recognizing income and expenses for tax purposes at the time it is received or paid. For example, farmers may hold crops in inventory to be sold in the following year.

The Federal Estate Tax

The Federal estate tax has applied to the transfer of property at death since 1916 as part of a unified system of transfer taxes. While the tax has been amended many times, the estate tax, as well as the gift tax (imposed upon transfers prior to a person's death) and the generation-skipping transfer tax, has never directly affected a large percentage of taxpayers; the IRS estimates that between 1934 and 2008, only 1.8 percent of adult deaths, on average, generated a taxable estate valued above the exclusion amount.²⁴

The TCJA keeps the estate tax framework but doubles the exclusion amount to \$11.18 million per individual.²⁵ Only the estate of a decedent who, at death, owns assets in excess of the estate tax exclusion amount must file a Federal estate tax return. However, only those returns that have a *taxable estate* above the exclusion amount—after deductions for expenses, debts, and bequests to a surviving spouse or charity—are subject to tax at a graduated rate, up to a current maximum of 40 percent.

The exclusion amount for estates has increased significantly since 2000 (see fig. 5), resulting in a decrease in the number of farm estates that must file an estate tax return as well as the number of estates with any tax liability. Unsurprisingly, there was a steep decline across all of these measures after the start of the Great Recession. However, the number of estate tax returns and estates with tax liability in the postrecession time remained well below their peak level in 2007–08 (fig. 6). This was largely driven by an increase in the exclusion from \$2 million in 2008 to \$5 million in 2011. On the other hand, the estimated total tax liability owed by farm estates returned to prerecession levels even as the exclusion increased and the maximum marginal tax rate went down, primarily due to the growth in farm real estate values.

The exclusion amounts and estate tax rates affect all estates, not just farm estates. But over the years, a number of targeted provisions have been enacted to reduce the burden of the estate tax on farms and small business owners. These include a special provision that allows farm real estate to be valued at farm-use value rather than its fair-market value and a provision that allows for installment payments (available to all estates).²⁶ Farmers and other landowners may also donate an easement or other restriction on development and exclude the value of the donated easement from the estate, providing additional estate tax savings.

The TCJA continues previous law by allowing the basis in the property acquired from a decedent to be stepped-up to the value of the asset at the date of death. This “step-up in basis” rule essentially eliminates any tax liability for the appreciation of the property that occurred prior to the property owner's death. The rule is significant since much of the appreciation in the value of assets in the estate has never been taxed—either as income or capital gains—and thus will escape taxation completely.²⁷ Heirs only pay capital gains tax on any increase in the value of the assets after they inherited the property.

²⁴ IRS Historical Table 17.

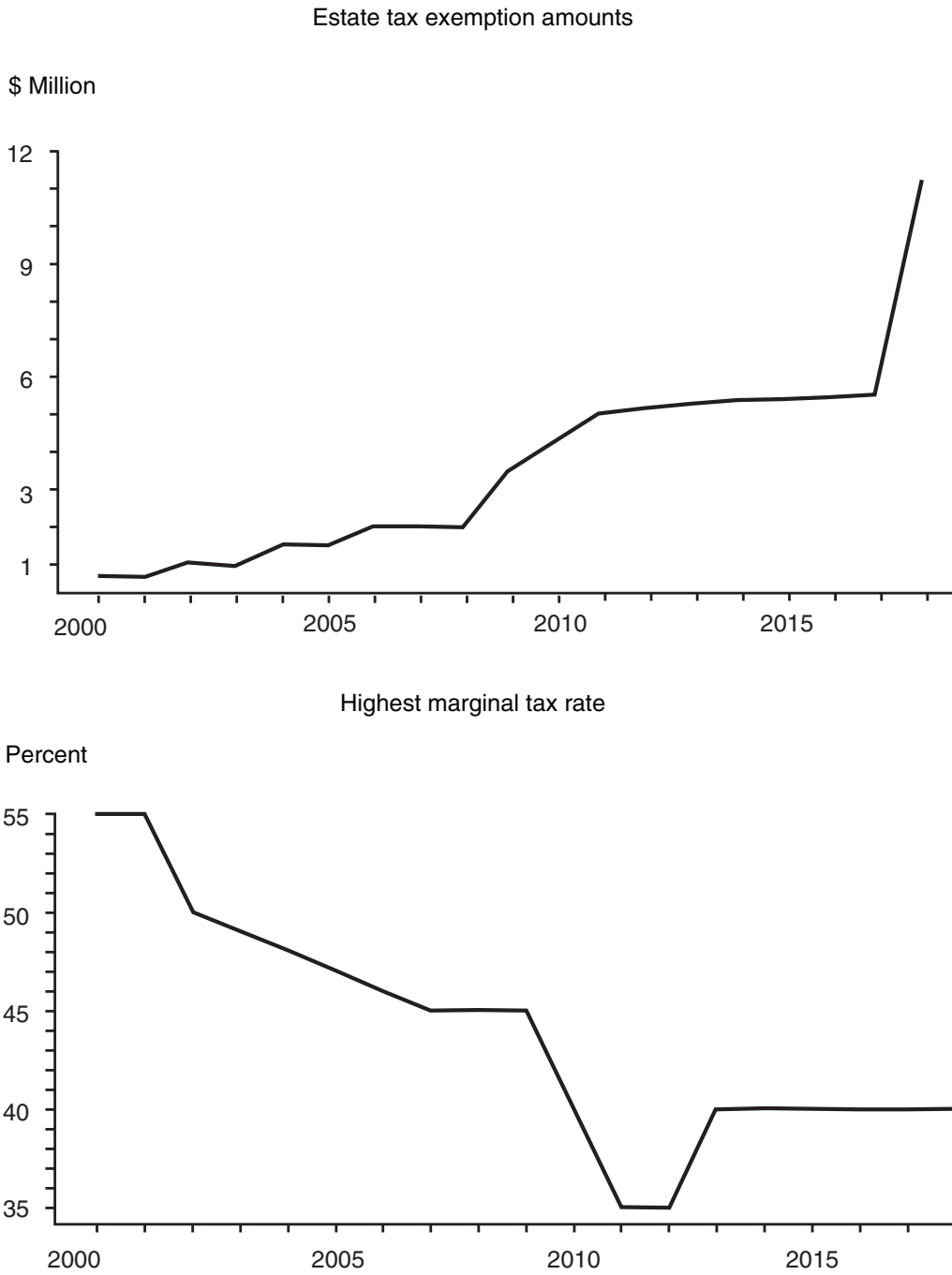
²⁵ Applies to decedents dying or gifts made after December 31, 2017, and before January 1, 2026.

²⁶ Farm-use value refers to the value of real property (land) at its agricultural value rather than, for example, its value for another purpose, such as commercial development.

²⁷ See Poterba and Weisbenner (2000) and Avery et al. (2013).

Figure 5

Federal estate exemption amounts and maximum tax rates



Note: Estate tax was repealed for 2010. Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA 2001); American Taxpayer Relief Act of 2012 (ATRA 2012); Tax Cuts and Jobs Act of 2017 (TCJA 2017).

Source: Internal Revenue Service, various revenue procedures; Public Law 115-97 (TCJA 2017).

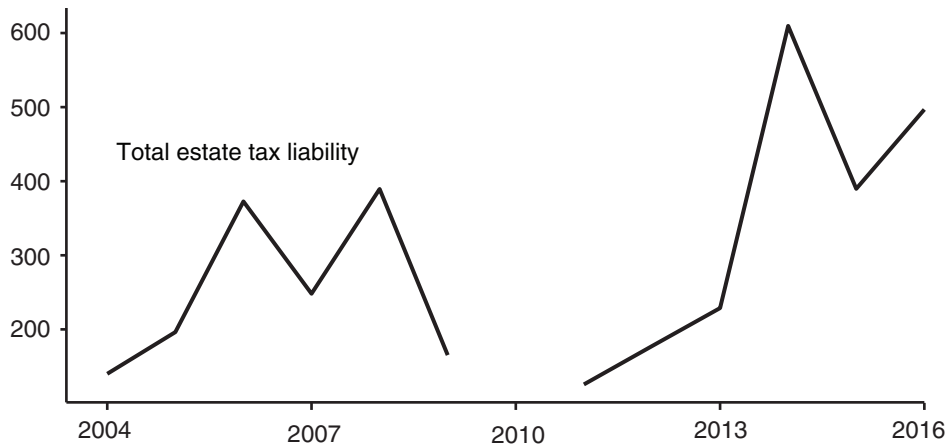
Figure 6

Estimated family farm estates that are required to file a return and number with a tax liability (top panel). Estimated total estate tax liability of family farms across the years (bottom panel)

Number of estates



\$ Million



Note: In 2010, the estate tax was temporarily repealed (thus no estate tax was owed), but the assets transferred in the estate were not given the stepped-up basis; however, taxpayers were given the option for the 2010 tax year to elect to use 2011 law, which included carryover basis. Source: Internal Revenue Service, various revenue procedures; Public Law 115-97 (TCJA 2017).

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2004–16.

Simulation of Federal Income Taxes and Estate Taxes

This section reports findings of our simulations using USDA, ERS/NASS ARMS data for 2016 and analysis of the effects of income and estate tax law change in the TCJA relative to the previous law. The dataset consists of 17,929 observations, which, when weighted, represent 2,027,269 family farms. Simulation results are presented for the individual income tax and the estate tax.

For individual income tax provisions, we model the differences in taxes paid under the TCJA versus previous law with respect to the following provisions:

1. Individual income tax rates on ordinary income (including the new brackets)
2. Standard and itemized deductions
3. Personal exemptions
4. Child Tax Credit/Dependent Care Credit
5. Alternative minimum tax.

For taxes on the farm business, we model income taxes paid as related to:²⁸

1. Expanded capital cost recovery expensing deduction (section 179)
2. Eliminated domestic production activities deduction (section 199)
3. Deduction for qualified business income (section 199A).

The simulation results are summarized through the effective tax rate, which measures actual tax burden, and the effective marginal tax rate, which measures the effective tax on the last dollar. The effective tax rate is simply the ratio between taxes paid and total income and is a more accurate representation of the tax burden faced by taxpayers than using their tax bracket rate. The effective marginal tax rate is a measure commonly sought by economists as it calculates the net tax on the *last* dollar of income earned, often referred to as the marginal dollar. Economic decisions such as investing or hours worked are made based on the tax rate on the marginal dollar earned; hence, the effective marginal tax rate is a more useful measure for capturing the tax code's incentives (or disincentives) than the overall tax burden.

The section concludes with simulation results for the Federal estate tax. The simulations are from an actuarial model that uses data from several sources as well as ARMS 2016 (see appendix C for model documentation). ARMS provides the demographic and financial information for farm households, and data from the Social Security Administration, the NASS June Area Survey, and the Farm Credit System are used to determine mortality rates, cash rents, and interest rates, respectively.

Effective Income Tax Rates

We estimate that family farm households in 2016 would have faced an average effective income tax rate of 13.9 percent, after tax credits, under the TCJA (table 5)—a 3.3-percentage point decline,

²⁸ We do not model changes due to modifications to the NOL provision or section 1031 because we lack data on carryover losses and like-kind exchanges, respectively.

excluding self-employment taxes.²⁹ Households of midsized farms are estimated to experience the greatest decline in average effective rates, 5.8 percentage points. Households of small family farms would experience a decrease of 3.0 percentage points, and households of large and very large farms would experience a reduction of 3.4 and 2.6 percentage points, respectively.³⁰

Table 5

Estimated effective income tax rates for family farm households under previous law and the Tax Cuts and Jobs Act by farm size, 2016

	Family farm size				All
	Small	Midsized	Large	Very large	
Total farms	1,844,077	122,980	53,769	6,449	2,027,269
Average tax rate after credits ¹ (percent)					
Previous law	14.5	20.5	27.2	33.8	17.2
Tax Cuts and Jobs Act	11.5	14.7	23.8	31.2	13.9
Percentage point change in tax rate, after tax credits, over previous law	-3.0	-5.8	-3.4	-2.6	-3.3

Note: Small farms are farms with less than \$350,000 gross cash farm income (GCFI); midsized farms have GCFI between \$350,000 and \$999,999; large farms have GCFI between \$1 million and \$4,999,999; very large farms have GCFI of at least \$5 million.

¹ Includes alternative minimum tax (AMT) but excludes self-employment taxes. Calculated after tax credits (the Child Tax Credit, Earned Income Tax Credit, and Child and Dependent Care Tax Credit).

Source: USDA, Economic Research Service (ERS) analysis of USDA National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

To the extent that larger family farms experience a decline in average effective tax rates, it is primarily the result of two changes made by the TCJA. First, the majority of the income of large family farm households is subject to the maximum marginal tax rate. Not only is this rate reduced under the TCJA, but the income level triggering the top rate is increased, which means less income is subject to the top rate.³¹ Larger farms also receive a greater percentage of their total household income from farming (85 percent or more), and under the TCJA, up to 20 percent of passthrough income from farming is deducted from taxable income. However, very large farm households are expected to benefit least because they have adjusted gross incomes well above the income limitations stipulated in section 199A (table 1, appendix A); therefore, many of these households are limited in their ability to deduct 20 percent of passthrough income. On the other hand, midsized and large farm households also derive a significant portion of their total household income from the farm business, but their adjusted gross incomes are below the income limitation of section 199A.

²⁹ To calculate the average effective tax rate, we use the ratio of the sum of total tax liability to the sum of total income. We use this measure because it allows us to deal with peculiar tax situations created by the tax system, and it is generally accepted practice in the tax field. This measure of effective tax rates is consistent with the measures used by the Internal Revenue Service and Joint Committee on Taxation and has advantages over the alternative measure of taking the average of the individual effective rates. Outliers have a greater degree of effect in the average of ratios, an issue of special concern for us as multiple observations could have zero taxable income, which results in an infinite tax rate, either positive or negative depending on the sign of the tax liability. Furthermore, we also report statistics for income tax rates inclusive of self-employment taxes, which are assessed at the business level; hence, it could be possible for a person with zero taxable income to have positive self-employment tax liability, which would result in an infinite effective tax rate.

³⁰ The change in the overall effective tax rate is driven by the underlying distribution of family farms (see table 5). Small farms account for the overwhelming majority of family farms (91 percent).

³¹ See table 1 for a summary of average total farm household income by farm size.

While larger farms benefit from the reduced rates and expanded income tax brackets, small and midsized farms would also experience a reduction in their effective income tax rate relative to previous law due to the expansion of the standard deduction. The TCJA almost doubles the standard deduction, consequently reducing the effective Federal income tax rate for small and midsized farms by between 3 and 5 percentage points. We estimate the aggregate standard deductions taken by small and midsized farms would increase under the TCJA to over \$43 billion, based on 2016 ARMS data, compared to an estimated \$23 billion in total standard deductions claimed under previous tax law by the same group of farm households.³²

While large farms and small farms benefit from different aspects of the tax law changes, midsized farms are able to take advantage of all these benefits. Like the large farm households, midsized farm households benefit from the 199A deduction and also from the reduction in marginal tax rates. Midsized farms also benefit from the increase in the standard deduction, just like the small farm households. The combination of benefits explains why midsized farmers experience the greatest decline in average effective tax rates.

Overall, under the TCJA, all commodity production specializations experience a decline in their average effective tax rate, declining by 3.3 percentage points on average, but the size of the change varies across specialization. Producers of high-value crops—fruits, nuts, vegetables, and nursery operators—and producers of major row crops experience a tax rate decline of 4.0 percentage points (table 6). Producers of beef cattle, representing the greatest number of farms of any specialty, experience the smallest decline (2.6 percentage points), and this result is driven by beef cattle producers being concentrated on small farms (see table 7 for summary of income and tax components by commodity specialization). Under the TCJA, dairy producers experience the largest decline in the average effective rate (4.3 percentage points).

Table 6

Estimated effective income tax rates for family farm households under previous law and the Tax Cuts and Jobs Act by farm commodity specialization, 2016

	Commodity specialization							All
	Grains, oilseeds, tobacco, cotton	Fruit, nuts, vegetables, greenhouse	Beef cattle	Dairy	Hogs	Poultry	Other crops or livestock	
Number of farms	311,436	127,261	740,846	46,791	22,810	67,590	710,535	2,027,269
	Average tax rate after credits ¹ (percent)							
Previous law	18.2	24.2	15.2	22.1	19.7	14.6	15.7	17.2
Tax Cuts and Jobs Act	14.2	20.2	12.6	17.8	16.3	10.7	12.7	13.9
Percentage point change in tax rate, after tax credits, over previous law	-4.0	-4.0	-2.6	-4.3	-3.4	-3.9	-3.0	-3.3

Note: All figures are averages in dollars. Specialization is determined by the commodity accounting for at least 51 percent of the farm's value of production. If no commodity alone accounts for at least 51 percent, then the specialization is classified as "other crops or livestock."

¹ Includes alternative minimum tax (AMT) but excludes self-employment taxes. Calculated after tax credits (the Child Tax Credit, Earned Income Tax Credit, and Child and Dependent Care Tax Credit).

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

³² The tax simulation model used to estimate tax liability optimizes the farm household's deduction by using the greater of the standard deduction or the value of the itemized deduction computed for the household.

Table 7

Income and tax components under the Tax Cuts and Jobs Act for family farm households by farm commodity specialization, 2016

	Commodity specialization							All
	Grains, oilseeds, tobacco, cotton	Fruit, nuts, vegetables, greenhouse	Beef cattle	Dairy	Hogs	Poultry	Other crops or livestock	
Number of farms	311,436	127,261	740,846	46,791	22,810	67,590	710,535	2,027,269
Average income								
Total household income ¹	140,927	208,435	100,763	134,222	164,562	102,035	108,447	117,918
Farm business income	70,389	96,206	3,226	97,827	85,655	27,332	7,322	24,731
Farm capital gains ²	284	3,416	1,218	1,728	4,288	73	907	1,111
Off-farm earned income	49,245	67,413	69,372	24,272	58,210	56,776	72,538	65,680
Off-farm unearned income	21,293	44,816	28,164	12,122	20,697	17,927	28,586	27,506
Off-farm capital gains ³	1,189	1,904	822	783	926	823	1,769	1,279
Adjusted gross income	136,538	195,762	91,649	140,359	161,700	96,360	100,173	110,138
Taxable income	102,074	158,641	70,115	101,449	122,537	70,101	78,328	87,972
After-tax income	112,985	159,870	84,529	102,484	129,628	85,967	91,696	97,088

Note: All figures are averages in dollars except number of farms. Specialization is determined by the commodity accounting for at least 51 percent of the farm's value of production. If no commodity alone accounts for at least 51 percent, then the specialization is classified as "other crops or livestock."

¹ Total household income is the sum of farm business income, off-farm earned income, and off-farm unearned income.

² Farm capital gains are included in farm business income.

³ Off-farm capital gains are included in off-farm unearned income.

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

Effective Marginal Tax Rates

The effective marginal tax rate (EMTR) is the net tax rate on the last dollar of income received, and it provides information about the potential incentive or disincentive effects created by the tax code at the margin. Generally under a progressive tax system, individuals' effective income tax rate will be lower than their effective marginal tax rate. To illustrate, consider a single taxpayer with \$100,000 in income, thus falling in the 24-percent tax rate bracket, with a final tax liability of \$10,000. The effective average tax rate for this person is 10 percent; however, his or her effective marginal tax rate is 24 percent as any extra dollar in income he/she receives would have been taxed at this rate. This

example is very simplistic to serve illustrative purposes; our computations of the EMTR account for tax credits and deductions, including those with income phaseouts.

Table 8 presents effective marginal tax rates by farm size. The effective marginal rates are calculated using income from salary and wages, capital, and self-employment (including farm income as well as other business income). If the TCJA had been law in 2016, the estimated average effective marginal tax rate among all farms would have been 13.6 percent. Larger farms would have faced a higher average effective marginal tax rate—between 27.6 percent and 31.9 percent—than small and midsized farms. Recall from table 4 that married couples filing jointly who have taxable income above \$600,000 (\$500,000 for single filers) are taxed under TCJA at a statutory marginal rate of 37 percent (and the taxpayers may also be assessed a net investment income surtax of 3.8 percent on capital income).³³

Table 8
Average effective marginal tax rates by family farm size¹, 2016

	Family farm size (percent)				All
	Small	Midsized	Large	Very large	
Previous law					
Effective marginal tax rate	15.2	24.3	34.6	35.3	16.3
Tax Cuts and Jobs Act					
Effective marginal tax rate	12.7	18.5	27.6	31.9	13.6

¹ Includes alternative minimum tax (AMT) but excludes self-employment taxes.

Note: Small farms are farms with less than \$350,000 gross cash farm income; midsized farms have gross cash income between \$350,000 and \$999,999; large farms have gross cash income between \$1 million and \$4,999,999; very large farms have gross cash income of at least \$5 million.

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

Large farm households had an estimated effective marginal tax rate of 34.6 percent under previous law and experience the greatest declines. Under the TCJA, we expect households of large farms to see their average effective marginal tax rate decline by an estimated 7.0 percentage points, on average, while the rate for households of midsized farms falls by 5.8 percentage points.

Average effective marginal tax rates for farm households by commodity specialization are presented in table 9. The average effective marginal rates under TCJA range from 11.5 percent for dairy to 17.3 percent for hog producers. The average rates declined from previous law by between 0.9 (dairy) and 4.1 (major row crops, including grains, oilseeds, tobacco, and cotton) percentage points.

³³ Generally under a progressive tax system, an individual's effective income tax rate will be lower than his or her effective marginal tax rate. However, because of the way we calculate the average effective tax rate for the sample, in some cases the average effective tax rate will be higher than the average effective marginal tax rate. For the average effective marginal tax rate, we use the simple average of each taxpayer's marginal tax.

Table 9

Average effective marginal tax rates by farm commodity specialization¹, 2016

	Commodity specialization (percent)							
	Grains, oilseeds, tobacco, cotton	Fruit, nut, vegetables, greenhouse	Beef cattle	Dairy	Hogs	Poultry	Other crops or livestock	All
	Previous law							
Effective marginal tax rate	19.9	18.7	14.7	12.4	20.1	15.5	16.2	16.3
	Tax Cuts and Jobs Act							
Effective marginal tax rate	15.8	15.4	12.3	11.5	17.3	13.3	13.6	13.6

¹ Includes alternative minimum tax (AMT), but excludes self-employment taxes.

Note: Specialization is determined by the commodity accounting for at least 51 percent of the farm's value of production. If no commodity alone accounts for at least 51 percent, then the specialization is classified as "other crops or livestock."

Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

Federal Estate Tax Estimations

Using an actuarial model and ARMS data, we estimate that 39,214 farm estates were created in 2016. As a result of the TCJA's new estate tax provision, including an exclusion amount of nearly \$11.2 million, only 0.58 percent of these farm estates would have been required to file an estate tax return if the TCJA had been in effect in 2016 (fig. 7). After accounting for adjustments to the taxable value of the estate, including deductions for expenses and debts and exemptions for bequests to a surviving spouse or charity, only 0.11 percent of these estates are projected to owe tax. Across all estates that owe tax, the aggregate liability is estimated at \$104 million.

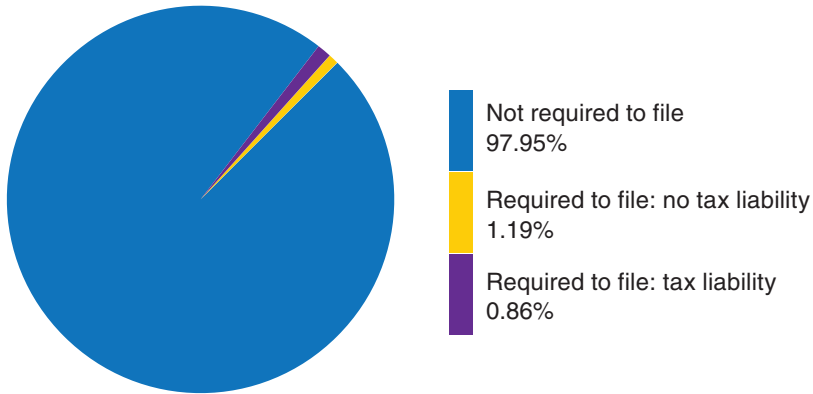
Exposure to the estate tax was greater under previous law than under the TCJA. Under previous Federal estate tax law, the estate of a decedent who, at death, owns assets in excess of the estate tax exclusion amount (\$5.45 million in 2016) would file a Federal estate tax return, and a portion of these would pay estate tax. Using the same actuarial model and 2016 ARMS data but previous law provisions, we estimate that 2.05 percent of all farm estates were required to file an estate tax return and only 0.86 percent of farm estates would have had an estate tax liability.³⁴ Aggregate liability under previous law is estimated at \$496 million.

³⁴ To estimate the estate tax liability for farm estates, we implement an actuarial model that uses the age distribution of farm operators and mortality rates (from the Social Security Administration mortality tables) to estimate the farm estates that are expected to have been created in 2016. According to the IRS, among all of the estates generated in 2016, only 12,411 estates (or about 0.5 percent of deaths) filed an estate tax return, and 5,219 estates (0.2 percent of deaths) owed estate tax. The total estate tax liability was \$18.3 billion in 2016. The number of deaths for 2016 is taken from Kochanek (2017).

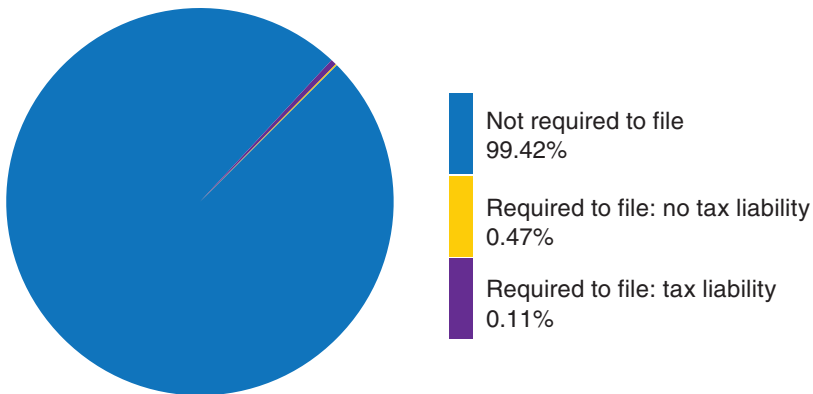
Figure 7

Estimates of family farm estates, estate returns, and estates with any tax liability, 2016

Previous law 2016



Tax Cuts and Jobs Act



Source: USDA, Economic Research Service (ERS) analysis of USDA, National Agricultural Statistics Service/ERS Agricultural Resource Management Survey data 2016.

Conclusion

The vast majority of U.S. family farms are organized as passthrough entities that are not subject to income tax themselves. Rather, the owners of the entities are taxed at the individual level on their share of farm income. Income received from agricultural production activities, and in some cases lease payments from rented land and farm program payments, is passed through from the farm to the individual farmers, partners, or shareholders of S corporations.

Using USDA, NASS/ERS Agricultural Resource Management Survey (ARMS) data and the individual income tax provisions for passthrough entities and corporate dividends, we simulate the effects of the Tax Cuts and Jobs Act on farm households' tax liabilities and effective and marginal tax rates. The TCJA eliminates several itemized deductions and modifies credits for children and dependents, and it restructures tax brackets and lowers statutory marginal rates. The TCJA effectively lowers the maximum statutory marginal tax rate on farm income for farms organized as passthroughs to 29.6 percent by providing a deduction equal to as much as 20 percent of qualified business income. Using data from 2016, we estimate that family farm households would have faced an average effective income tax rate of 13.9 percent under the TCJA versus 17.2 percent under previous law after factoring in tax credits (Child Tax Credit, Earned Income Tax Credit, and Child and Dependent Care Tax Credit) but excluding self-employment taxes.

The reduction in effective income tax rates from the TCJA varies across farm sizes with midsized farms estimated to benefit most, with a 5.8-percentage-point decline in their average effective tax rate. The average household of a small farm experiences an estimated decrease of 3.0 percentage points in its average effective income tax rate, with large and very large farm households experiencing a reduction of 3.4 and 2.6 percentage points, respectively.

In addition to restructuring the individual income tax code, the TCJA doubles the exclusion amount of the Federal estate tax. Based on an actuarial model that uses ARMS data, we estimate that the estate tax affects a small number of farm estates overall in terms of required filing or tax liability. For 2016, we estimate that 39,214 family farm estates were created, and 0.58 percent of these estates would have been required to file an estate tax return under the TCJA compared to 2.05 percent under previous law. After accounting for adjustments, deductions, and exemptions, we estimate that only 0.11 percent of farm estates would have had a tax liability under TCJA, resulting in an estimated \$104 million of Federal estate tax revenue.

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Appendix A

Appendix table 1

Major provisions of previous tax law and the Tax Cuts and Jobs Act

	Law in effect for tax year 2017	Tax Cuts and Jobs Act
Tax rates for individuals		
Ordinary income	Seven tax brackets: 10, 15, 25, 28, 33, 35, and 39.6%	Seven brackets ¹ : 10, 12, 22, 24, 32, 35, and 37%
Long-term capital gains and dividends	0, 15, 20% depending on the taxpayer's ordinary income tax bracket. Taxpayers with modified adjusted gross income of at least \$200,000 (\$250,000 for married individuals) are assessed a 3.8% Net Investment Income Tax.	0, 15, 20% depending on the taxpayer's ordinary income tax bracket. High-income taxpayers are assessed a 3.8% Net Investment Income Tax.
Personal exemptions	\$4,050 per individual; phases out for individuals with an adjusted gross income of at least \$261,500 (\$313,800 for married individuals)	Eliminates ¹
Standard deduction	\$6,350 for single filers; \$12,700 for married individuals	\$12,000 for single filers; \$24,000 for married individuals ¹
Itemized deductions	Limited by adjusted gross income.	Eliminates several miscellaneous itemized deductions, modifies others; for example, mortgage interest deduction (with respect to no more than \$750,000 ² (joint) indebtedness) and the deductions for charitable donations and medical expenses. ¹ Repeals phaseout of deduction for high-income individuals.
Credits	Mix of refundable and nonrefundable credits.	Maintains previous law Earned Income Tax Credit and expands Child Tax Credit to \$2,000 per child, \$600 nonrefundable. Raises phaseout to \$200,000 (single)/\$400,000 (married). ¹
Alternative minimum tax	Minimum tax of 28% applies to individuals with taxable incomes above \$187,800 (\$93,900 for married individuals filing separately)	Minimum tax of 28% applies to individuals with taxable incomes above \$1 million (\$500,000 for married individuals filing separately) ¹
Expensing provisions	Section 179 maximum amount \$510,000; investment limit of \$2,030,000 before deduction phases out	Increases the maximum amount to \$1 million. Investment limit is \$2.5 million before deduction phases out. 100% bonus depreciation. ²
Net operating loss (NOL)	NOL may be carried back up to 5 years, carried forward up to 20 years.	Limits NOL carryforward to 90% of net taxable income (without regard for NOL); adjusts NOL carryforward for inflation; eliminates NOL carryback, except for farming

—continued

Major provisions of previous tax law and the Tax Cuts and Jobs Act—continued

	Law in effect for tax year 2017	Tax Cuts and Jobs Act
Business interest expense	Interest paid on indebtedness for business purposes is generally deductible; however, there are limitations that apply to investment interest	Limits deduction to no more than business interest income plus 30% of adjusted taxable income for the taxpayer (no carryforward). Limit does not apply to producers with less than \$25 million of gross receipts. Farms are not subject to the \$25 million limit as long as they use the alternative depreciation system to depreciate property in the farming business with a recovery period of 10 years or more.
Domestic production activities deduction (DPAD) (section 199)	The deduction is applied to the percentage of income from qualifying DPA activities and is the lesser of 9% of that income or 50% of the wages paid for the activities (must pay W-2 wages).	Eliminates
Deduction for qualified business income of passthrough entities (section 199A)	N/A	Allows individuals to deduct up to 20% of “domestic qualified business income” (QBI) earned through a passthrough business (sole proprietorship, partnership, or S corporation). The deduction may also be limited by wages paid to farm labor that is directly hired (excluding contract labor). The limit begins for married taxpayers with taxable income exceeding \$315,000 (\$157,500 for single filers), and the deduction is reduced by the amount that QBI exceeds the allowable wages used in the calculation. ¹
Like-Kind Exchange (section 1031)	Taxpayer may forgo the recognition of a gain or loss if property held for productive use in a trade or business or for investment is exchanged for property that is “like kind,” which is to be held for productive use in a trade or business or for investment (also known as a “1031 Exchange”).	Modifies to allow only the exchange of real property held for business or trade.
Estate tax	Top marginal rate of 40%, \$5,490,000 lifetime exclusion per individual.	No change in top marginal rate. Increases lifetime exclusion to \$11.18 million per individual, \$22.4 million per couple. ⁴

¹ Applies for taxable years beginning after December 31, 2017, and before January 1, 2026.

² After 2025, the mortgage interest deduction limit returns to \$1 million of mortgage indebtedness.

³ 100% value applies for 2018 through 2022—thereafter, it is reduced by 20 percentage points every year until it is fully eliminated in 2027.

⁴ Applies to decedents dying or gifts made after December 31, 2017, and before January 1, 2026.

Appendix B

Exhibit A. Form 1040

Form 1040 Department of the Treasury—Internal Revenue Service (99) 2016 U.S. Individual Income Tax Return		OMB No. 1545-0074	IRS Use Only—Do not write or staple in this space.
For the year Jan. 1–Dec. 31, 2016, or other tax year beginning _____, 2016, ending _____, 20		See separate instructions.	
Your first name and initial	Last name	Your social security number	
If a joint return, spouse's first name and initial	Last name	Spouse's social security number	
Home address (number and street). If you have a P.O. box, see instructions.		Apt. no.	▲ Make sure the SSN(s) above and on line 6c are correct.
City, town or post office, state, and ZIP code. If you have a foreign address, also complete spaces below (see instructions).			
Foreign country name		Foreign province/state/county	Foreign postal code
Filing Status Check only one box. 1 <input type="checkbox"/> Single 2 <input type="checkbox"/> Married filing jointly (even if only one had income) 3 <input type="checkbox"/> Married filing separately. Enter spouse's SSN above and full name here. ▶ 4 <input type="checkbox"/> Head of household (with qualifying person). (See instructions.) If the qualifying person is a child but not your dependent, enter this child's name here. ▶ 5 <input type="checkbox"/> Qualifying widow(er) with dependent child			
Exemptions 6a <input type="checkbox"/> Yourself. If someone can claim you as a dependent, do not check box 6a b <input type="checkbox"/> Spouse c Dependents: (1) First name Last name (2) Dependent's social security number (3) Dependent's relationship to you (4) <input type="checkbox"/> if child under age 17 qualifying for child tax credit (see instructions) If more than four dependents, see instructions and check here <input type="checkbox"/> d Total number of exemptions claimed			
Income Attach Form(s) W-2 here. Also attach Forms W-2G and 1099-R if tax was withheld. If you did not get a W-2, see instructions.			
7	Wages, salaries, tips, etc. Attach Form(s) W-2	7	
8a	Taxable interest. Attach Schedule B if required	8a	
b	Tax-exempt interest. Do not include on line 8a	8b	
9a	Ordinary dividends. Attach Schedule B if required	9a	
b	Qualified dividends	9b	
10	Taxable refunds, credits, or offsets of state and local income taxes	10	
11	Alimony received	11	
12	Business income or (loss). Attach Schedule C or C-EZ	12	
13	Capital gain or (loss). Attach Schedule D if required. If not required, check here <input type="checkbox"/>	13	
14	Other gains or (losses). Attach Form 4797	14	
15a	IRA distributions	15a	
b	Taxable amount	15b	
16a	Pensions and annuities	16a	
b	Taxable amount	16b	
17	Rental real estate, royalties, partnerships, S corporations, trusts, etc. Attach Schedule E	17	
18	Farm income or (loss). Attach Schedule F	18	
19	Unemployment compensation	19	
20a	Social security benefits	20a	
b	Taxable amount	20b	
21	Other income. List type and amount	21	
22	Combine the amounts in the far right column for lines 7 through 21. This is your total income ▶	22	
Adjusted Gross Income			
23	Educator expenses	23	
24	Certain business expenses of reservists, performing artists, and fee-basis government officials. Attach Form 2106 or 2106-EZ	24	
25	Health savings account deduction. Attach Form 8889	25	
26	Moving expenses. Attach Form 3903	26	
27	Deductible part of self-employment tax. Attach Schedule SE	27	
28	Self-employed SEP, SIMPLE, and qualified plans	28	
29	Self-employed health insurance deduction	29	
30	Penalty on early withdrawal of savings	30	
31a	Alimony paid	31a	
b	Recipient's SSN ▶		
32	IRA deduction	32	
33	Student loan interest deduction	33	
34	Tuition and fees. Attach Form 8917	34	
35	Domestic production activities deduction. Attach Form 8903	35	
36	Add lines 23 through 35	36	
37	Subtract line 36 from line 22. This is your adjusted gross income ▶	37	
For Disclosure, Privacy Act, and Paperwork Reduction Act Notice, see separate instructions. Cat. No. 11320B Form 1040 (2016)			

38	Amount from line 37 (adjusted gross income)		38	
Tax and Credits	39a Check <input type="checkbox"/> You were born before January 2, 1952, <input type="checkbox"/> Blind. <input type="checkbox"/> Spouse was born before January 2, 1952, <input type="checkbox"/> Blind. Total boxes checked ▶ 39a			
	b If your spouse itemizes on a separate return or you were a dual-status alien, check here ▶ 39b			
Standard Deduction for—	40 Itemized deductions (from Schedule A) or your standard deduction (see left margin)		40	
• People who check any box on line 39a or 39b or who can be claimed as a dependent, see instructions.	41 Subtract line 40 from line 38		41	
• All others: Single or Married filing separately, \$6,300	42 Exemptions. If line 38 is \$155,650 or less, multiply \$4,050 by the number on line 6d. Otherwise, see instructions		42	
Married filing jointly or Qualifying widow(er), \$12,600	43 Taxable income. Subtract line 42 from line 41. If line 42 is more than line 41, enter -0-		43	
Head of household, \$9,300	44 Tax (see instructions). Check if any from: a <input type="checkbox"/> Form(s) 8814 b <input type="checkbox"/> Form 4972 c <input type="checkbox"/>		44	
	45 Alternative minimum tax (see instructions). Attach Form 6251		45	
	46 Excess advance premium tax credit repayment. Attach Form 8962		46	
	47 Add lines 44, 45, and 46		47	
	48 Foreign tax credit. Attach Form 1116 if required	48		
	49 Credit for child and dependent care expenses. Attach Form 2441	49		
	50 Education credits from Form 8863, line 19	50		
	51 Retirement savings contributions credit. Attach Form 8880	51		
	52 Child tax credit. Attach Schedule 8812, if required	52		
	53 Residential energy credits. Attach Form 5695	53		
	54 Other credits from Form: a <input type="checkbox"/> 3800 b <input type="checkbox"/> 8801 c <input type="checkbox"/>	54		
	55 Add lines 48 through 54. These are your total credits		55	
	56 Subtract line 55 from line 47. If line 55 is more than line 47, enter -0-		56	
Other Taxes	57 Self-employment tax. Attach Schedule SE		57	
	58 Unreported social security and Medicare tax from Form: a <input type="checkbox"/> 4137 b <input type="checkbox"/> 8919		58	
	59 Additional tax on IRAs, other qualified retirement plans, etc. Attach Form 5329 if required		59	
	60a Household employment taxes from Schedule H		60a	
	b First-time homebuyer credit repayment. Attach Form 5405 if required		60b	
	61 Health care: individual responsibility (see instructions) Full-year coverage <input type="checkbox"/>		61	
	62 Taxes from: a <input type="checkbox"/> Form 8959 b <input type="checkbox"/> Form 8960 c <input type="checkbox"/> Instructions; enter code(s)		62	
	63 Add lines 56 through 62. This is your total tax		63	
Payments	64 Federal income tax withheld from Forms W-2 and 1099	64		
	65 2016 estimated tax payments and amount applied from 2015 return	65		
	66a Earned income credit (EIC)	66a		
	b Nontaxable combat pay election 66b			
	67 Additional child tax credit. Attach Schedule 8812	67		
	68 American opportunity credit from Form 8863, line 8	68		
	69 Net premium tax credit. Attach Form 8962	69		
	70 Amount paid with request for extension to file	70		
	71 Excess social security and tier 1 RRTA tax withheld	71		
	72 Credit for federal tax on fuels. Attach Form 4136	72		
	73 Credits from Form: a <input type="checkbox"/> 2439 b <input type="checkbox"/> Reserved c <input type="checkbox"/> 8885 d <input type="checkbox"/>	73		
	74 Add lines 64, 65, 66a, and 67 through 73. These are your total payments		74	
Refund	75 If line 74 is more than line 63, subtract line 63 from line 74. This is the amount you overpaid		75	
	76a Amount of line 75 you want refunded to you. If Form 8888 is attached, check here <input type="checkbox"/>		76a	
Direct deposit? See instructions.	b Routing number		c Type: <input type="checkbox"/> Checking <input type="checkbox"/> Savings	
	d Account number			
	77 Amount of line 75 you want applied to your 2017 estimated tax	77		
Amount You Owe	78 Amount you owe. Subtract line 74 from line 63. For details on how to pay, see instructions		78	
	79 Estimated tax penalty (see instructions)	79		

Third Party Designee Do you want to allow another person to discuss this return with the IRS (see instructions)? Yes. Complete below. No

Designee's name Phone no. Personal identification number (PIN)

Sign Here Under penalties of perjury, I declare that I have examined this return and accompanying schedules and statements, and to the best of my knowledge and belief, they are true, correct, and accurately list all amounts and sources of income I received during the tax year. Declaration of preparer (other than taxpayer) is based on all information of which preparer has any knowledge.

Your signature	Date	Your occupation	Daytime phone number
Spouse's signature. If a joint return, both must sign.	Date	Spouse's occupation	If the IRS sent you an Identity Protection PIN, enter it here (see inst.) <input type="text"/>

Paid Preparer Use Only

Print/Type preparer's name	Preparer's signature	Date	Check <input type="checkbox"/> if self-employed	PTIN
Firm's name			Firm's EIN	
Firm's address			Phone no.	

Exhibit B. Schedule F (Form 1040)

SCHEDULE F (Form 1040) Department of the Treasury Internal Revenue Service (99)	Profit or Loss From Farming ▶ Attach to Form 1040, Form 1040NR, Form 1041, Form 1065, or Form 1065-B. ▶ Information about Schedule F and its separate instructions is at www.irs.gov/schedulef .	OMB No. 1545-0074 2016 Attachment Sequence No. 14
Name of proprietor _____		Social security number (SSN) _____
A Principal crop or activity _____	B Enter code from Part IV _____	C Accounting method: <input type="checkbox"/> Cash <input type="checkbox"/> Accrual
		D Employer ID number (EIN), (see instr) _____
E Did you "materially participate" in the operation of this business during 2016? If "No," see instructions for limit on passive losses <input type="checkbox"/> Yes <input type="checkbox"/> No		
F Did you make any payments in 2016 that would require you to file Form(s) 1099 (see instructions)? <input type="checkbox"/> Yes <input type="checkbox"/> No		
G If "Yes," did you or will you file required Forms 1099? <input type="checkbox"/> Yes <input type="checkbox"/> No		
Part I Farm Income—Cash Method. Complete Parts I and II (Accrual method. Complete Parts II and III, and Part I, line 9.)		
1a Sales of livestock and other resale items (see instructions)	1a	
b Cost or other basis of livestock or other items reported on line 1a	1b	
c Subtract line 1b from line 1a	1c	
2 Sales of livestock, produce, grains, and other products you raised	2	
3a Cooperative distributions (Form(s) 1099-PATR)	3a	3b Taxable amount
4a Agricultural program payments (see instructions)	4a	4b Taxable amount
5a Commodity Credit Corporation (CCC) loans reported under election	5a	5a
b CCC loans forfeited	5b	5c Taxable amount
6 Crop insurance proceeds and federal crop disaster payments (see instructions)		
a Amount received in 2016	6a	6b Taxable amount
c If election to defer to 2017 is attached, check here <input type="checkbox"/>	6d	6d Amount deferred from 2015
7 Custom hire (machine work) income	7	
8 Other income, including federal and state gasoline or fuel tax credit or refund (see instructions)	8	
9 Gross income. Add amounts in the right column (lines 1c, 2, 3b, 4b, 5a, 5c, 6b, 6d, 7, and 8). If you use the accrual method, enter the amount from Part III, line 50 (see instructions) ▶	9	
Part II Farm Expenses—Cash and Accrual Method. Do not include personal or living expenses (see instructions).		
10 Car and truck expenses (see instructions). Also attach Form 4562	10	23 Pension and profit-sharing plans
11 Chemicals	11	24 Rent or lease (see instructions):
12 Conservation expenses (see instructions)	12	a Vehicles, machinery, equipment
13 Custom hire (machine work)	13	b Other (land, animals, etc.)
14 Depreciation and section 179 expense (see instructions)	14	25 Repairs and maintenance
15 Employee benefit programs other than on line 23	15	26 Seeds and plants
16 Feed	16	27 Storage and warehousing
17 Fertilizers and lime	17	28 Supplies
18 Freight and trucking	18	29 Taxes
19 Gasoline, fuel, and oil	19	30 Utilities
20 Insurance (other than health)	20	31 Veterinary, breeding, and medicine
21 Interest:		32 Other expenses (specify):
a Mortgage (paid to banks, etc.)	21a	a _____
b Other	21b	b _____
22 Labor hired (less employment credits)	22	c _____
		d _____
		e _____
		f _____
33 Total expenses. Add lines 10 through 32f. If line 32f is negative, see instructions ▶	33	
34 Net farm profit or (loss). Subtract line 33 from line 9	34	
If a profit, stop here and see instructions for where to report. If a loss, complete lines 35 and 36.		
35 Did you receive an applicable subsidy in 2016? (see instructions) <input type="checkbox"/> Yes <input type="checkbox"/> No		
36 Check the box that describes your investment in this activity and see instructions for where to report your loss.		
a <input type="checkbox"/> All investment is at risk.		
b <input type="checkbox"/> Some investment is not at risk.		
For Paperwork Reduction Act Notice, see the separate instructions.		

Part III Farm Income—Accrual Method (see instructions).

37	Sales of livestock, produce, grains, and other products (see instructions)				37		
38a	Cooperative distributions (Form(s) 1099-PATR)	38a			38b	Taxable amount	
39a	Agricultural program payments	39a			39b	Taxable amount	
40	Commodity Credit Corporation (CCC) loans:				40a		
a	CCC loans reported under election				40a		
b	CCC loans forfeited	40b			40c	Taxable amount	
41	Crop insurance proceeds				41		
42	Custom hire (machine work) income				42		
43	Other income (see instructions)				43		
44	Add amounts in the right column for lines 37 through 43 (lines 37, 38b, 39b, 40a, 40c, 41, 42, and 43)				44		
45	Inventory of livestock, produce, grains, and other products at beginning of the year. Do not include sales reported on Form 4797	45					
46	Cost of livestock, produce, grains, and other products purchased during the year	46					
47	Add lines 45 and 46	47					
48	Inventory of livestock, produce, grains, and other products at end of year	48					
49	Cost of livestock, produce, grains, and other products sold. Subtract line 48 from line 47*				49		
50	Gross income. Subtract line 49 from line 44. Enter the result here and on Part I, line 9				50		

*If you use the unit-livestock-price method or the farm-price method of valuing inventory and the amount on line 48 is larger than the amount on line 47, subtract line 47 from line 48. Enter the result on line 49. Add lines 44 and 49. Enter the total on line 50 and on Part I, line 9.

Part IV Principal Agricultural Activity Codes



Do not file Schedule F (Form 1040) to report the following.

- Income from providing agricultural services such as soil preparation, veterinary, farm labor, horticultural, or management for a fee or on a contract basis. Instead file Schedule C (Form 1040) or Schedule C-EZ (Form 1040).
- Income from breeding, raising, or caring for dogs, cats, or other pet animals. Instead file Schedule C (Form 1040) or Schedule C-EZ (Form 1040).
- Sales of livestock held for draft, breeding, sport, or dairy purposes. Instead file Form 4797.

These codes for the Principal Agricultural Activity classify farms by their primary activity to facilitate the administration of the Internal Revenue Code. These six-digit codes are based on the North American Industry Classification System (NAICS).

Select the code that best identifies your primary farming activity and enter the six-digit number on line B.

Crop Production

- 111100 Oilseed and grain farming
- 111210 Vegetable and melon farming

- 111300 Fruit and tree nut farming
- 111400 Greenhouse, nursery, and floriculture production
- 111900 Other crop farming

Animal Production

- 112111 Beef cattle ranching and farming
- 112112 Cattle feedlots
- 112120 Dairy cattle and milk production
- 112210 Hog and pig farming
- 112300 Poultry and egg production
- 112400 Sheep and goat farming
- 112510 Aquaculture
- 112900 Other animal production

Forestry and Logging

- 113000 Forestry and logging (including forest nurseries and timber tracts)

Appendix C

Documentation for Estate Tax Model

Data

USDA's Agricultural Resource Management Survey (ARMS) for year 2016 provides the financial and demographic information for the farm households.

Mortality tables are from the Social Security Administration Actuary Life Tables.

USDA, National Agricultural Statistics Service June Area Survey provides cash rent information for cropland by State. The data are used to compute the deductions to which farm estates are entitled under the special use valuation provision.

Farm Bank Interest Rates are published by IRS in the Internal Revenue Bulletin,³⁵ and they are used to compute the value of farmland under the special use valuation method.

Model

Assumptions

We make two important assumptions when estimating the estate tax liabilities. These assumptions are based in the assumption that all estate heirs behave in an economically rational matter, but as we do not possess all of the information set, there might be some individual instance for which these assumptions would be violated.

Married households: By law, estates left to surviving spouses are left tax-free, and thus we assume that surviving spouses choose to defer estate tax payments until their death. Additionally, we assume that each partner in a married household owns exactly half of the property, assets, debt, etc.

Special use valuation: The Federal estate tax code allows qualifying farm estates to value their land at the agricultural value rather than at a value it could receive if developed for commercial business activity, for example, with the condition that such land will remain farmland for 10 years. We assume that all farm estates that qualify will take this deduction.

Estimations

In absence of administrative data, we employ an actuary model to estimate the number of farm estates created in a given year.

The expected number of farm estates for year X is computed as:

$$E[\text{number of estates}] = \sum_{i=1}^N \omega_i P_i(\text{death} | \text{age}, \text{sex}),$$

where ω_i is the sample weight for observation i and P is the probability of death given the age and sex of the farm operator.

³⁵ Internal Revenue Bulletin: 2016-35.

The value of each estate is computed as the net worth estimated using ARMS data minus an “administrative” cost that is set to 4 percent of the farmer’s gross worth. Thus:

$$\text{Gross worth} = \text{Farm assets} + \text{Nonfarm assets}$$

$$\text{Net worth} = \text{Gross worth} - (\text{Farm debt} + \text{Nonfarm debt})$$

$$\text{Value of estate} = \text{Net worth} - 0.04 \times \text{Gross worth}$$

Estates are required to file a tax return only if they exceed the estate tax exclusion for that year.

Thus, the estimated number of estate returns is:

$$E[\text{estatetaxreturns}] = \sum_{i=1}^N \omega_i P_i(\text{death}|\text{age}, \text{sex}) \times I((\text{valueofestate})_i - \text{exemption} > 0)$$

where **I** is the indicator function that is equal to one if the value of the estate is greater than the exclusion and zero otherwise.

Filing an estate tax return does not imply that such estate will have a tax liability. Since we assume that surviving spouses will defer the payment of estate taxes until their death, estates that file a tax return will in many cases have an estate tax liability of zero.³⁶ Moreover, multiple farm estates qualify for the special use valuation of their farm land, thereby reducing their tax liability to potentially zero.

Estate taxes are imposed on the difference between the value of the estate and the exclusion amount; however, some qualifying farm estates can reduce the value of their estate using the special use valuation (SUV) provision. This provision allows farmland value for estate tax purposes to be based on its value in an agricultural use. SUV excludes the value of the land in other uses, such as residential. To qualify, the farm estate must pass two tests:

Test 1: The adjusted farm real property value, which is farm property value minus farm debt, must be at least 25 percent of the adjusted gross estate.

Test 2: Net worth of the farm (farm assets – farm debt) must be at least 50 percent of the adjusted gross estate.

A farm estate that passes both tests can reduce, up a maximum amount, the value of its real property by using SUV instead for estate valuation purposes.³⁷ The SUV is computed using cash rents, farm bank interest rates, and farm property taxes under the formula:

$$SUV = \frac{\text{Cashrentsperacre} - \text{Propertytaxperacre}}{\text{Farmbankinterestrate}} \times \text{Acresofthefarm}$$

where the cash rents and interest rate data are for the State in which the farm operates. The adjusted estate is then:

³⁶ The transferring of estates tax-free to a surviving spouse is specified in the portability provision of the estate tax code. The provision also allows the surviving spouse to carry any unused amount of the estate tax exclusion from the deceased spouse’s estate.

³⁷ The maximum amount of the reduction is found in the Internal Revenue Code, section 2032A.

Adj. Estate = Value of Estate – min(max(Value of Farm Real Estate - SUV,0), Reduction Cap)

After finding the adjusted estate, we proceed to compute the estate tax liability using the Federal estate tax brackets.³⁸ The total estimated tax liability is just the weighted sum of the tax liabilities times the probability of death.

The average effective estate tax rate (AETR) is computed as:

$$AETR = \frac{\sum_i^{\tilde{N}} \omega_i P_i(\text{death}|\text{age}, \text{sex}) \times (\text{estatetaxliabilty})_i}{\sum_i^{\tilde{N}} \omega_i P_i(\text{death}|\text{age}, \text{sex}) \times (\text{Adjustedestate})_i}$$

where $\tilde{N} \in N$ is the sub-sample of observations that have an estate tax liability greater than zero. This average effective tax rate measure minimizes the effect of outliers relative to an alternative measure that is the weighted average of the effective tax rate observation in \tilde{N} .

³⁸ Note that the tax is assessed on the difference between the adjusted estate and the estate tax exclusion.