

# **TAX INCENTIVES FOR DOMESTIC MANUFACTURING**

Scheduled for a Public Hearing  
Before the  
SENATE COMMITTEE ON FINANCE  
on March 12, 2024

Prepared by the Staff  
of the  
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## INTRODUCTION AND SUMMARY

The Senate Committee on Finance has scheduled a public hearing on March 12, 2024, titled “American Made: Growing U.S. Manufacturing Through the Tax Code.” This document,<sup>1</sup> prepared by the staff of the Joint Committee on Taxation, describes present-law and prior-law tax incentives for domestic manufacturing, and provides economic analysis.

Part I of this document provides a description of present-law income tax rates. This Part also describes rules relating to depreciation, including certain first-year expensing provisions and recapture provisions. In addition, Part I describes domestic research incentives, the domestic content bonus for certain production and investment tax credits, the credit for advance manufacturing production and sale of certain energy components, the credit for investment in advanced energy property used in certain manufacturing projects, and the credit for investment in advanced semiconductor manufacturing facilities. Part I also describes the qualified business income deduction for noncorporate taxpayers.

Part II of this document provides economic analysis relating to tax incentives for domestic manufacturing. It addresses the concepts of user cost of capital and effective marginal tax rates. Part II also provides and analyzes data on specific tax incentives relating to manufacturing. In addition, Part II analyzes macroeconomic data relating to investment and GDP, as well as data on manufacturing output and employment.

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<sup>1</sup> This document may be cited as follows: Joint Committee on Taxation, *Tax Incentives for Domestic Manufacturing* (JCX-8-24), March 8, 2024. This document can also be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

## I. PRESENT AND PRIOR LAW

### A. Tax Rates on Income

#### Tax rates on income of individuals

##### In general

Individual taxpayers' net income tax liability is the greater of (1) regular individual income tax liability reduced by credits allowed against the regular tax or (2) tentative minimum tax reduced by credits allowed against the minimum tax.<sup>2</sup> The amount of income subject to tax is determined differently under the regular tax and the alternative minimum tax ("AMT"), and separate rate schedules apply. Lower rates apply for long-term capital gain and certain dividends; those rates apply for both the regular tax and the AMT.

##### Tax rates

To determine regular tax liability, a taxpayer generally must apply the tax rate schedules (or the tax tables) to his or her regular taxable income. The rate schedules are broken into several ranges of income, known as income brackets, with the marginal tax rate increasing as a taxpayer's income increases.<sup>3</sup> Separate rate schedules apply based on an individual's filing status (*i.e.*, single, head of household, married filing jointly, or married filing separately).

The top marginal regular individual income tax rate is 37 percent. The marginal regular individual income tax rate for the lowest bracket is 10 percent.<sup>4</sup>

An AMT is imposed on individuals in an amount by which the tentative minimum tax exceeds the regular income tax for the taxable year.<sup>5</sup> The tentative minimum tax is the sum of

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<sup>2</sup> Estates and most trusts are also subject to income tax under similar rules for individuals. Sec. 641(b). Estates and most trusts pay tax on income at the entity level to the extent that the income is not distributed or required to be distributed under governing law or under the terms of the governing instrument. Such entities determine their tax liability using a special tax rate schedule and are subject to the alternative minimum tax. Certain trusts do not pay any Federal income tax at the entity level, for example trusts that distribute all income currently to beneficiaries. Other trusts are treated as being owned by grantors in whole or in part for tax purposes; in such cases, the grantors are taxed on the income of the trust.

<sup>3</sup> The term "marginal tax rate" generally refers to the additional, or incremental, increase in tax liability that a taxpayer incurs from a \$1.00 increase in his or her income. The marginal tax rates for individuals defined in section 1 of the Code are referred to as "statutory marginal tax rates." Refer to Section 3.01 of Rev. Proc. 2023-34, 2023-48 I.R.B. 1287, November 27, 2023, for the tax rate tables under section 1 for 2024.

<sup>4</sup> Sec. 1(j).

<sup>5</sup> Sec. 55.

(1) 26 percent of so much of the taxable excess as does not exceed an indexed dollar amount,<sup>6</sup> and (2) 28 percent of the remaining taxable excess.<sup>7</sup>

The top marginal income tax rate on adjusted net capital gain generally is 20 percent.<sup>8</sup> Capital losses generally are deductible in full against capital gains.<sup>9</sup> In addition, individual taxpayers may deduct capital losses against up to \$3,000 of ordinary income in each year.<sup>10</sup> Any remaining unused capital losses may be carried forward indefinitely to another taxable year.<sup>11</sup> The maximum rate of tax on the adjusted net capital gain of an individual depends on the individual's taxable income and filing status. These maximum rates apply for purposes of both the regular tax and the AMT.

### **Tax rate on corporate income**

Income of a corporation is taxed at 21 percent.<sup>12</sup> While no separate rate structure exists for corporate capital gains, a corporation may not deduct the amount of capital losses that exceed capital gains for any taxable year.<sup>13</sup> Disallowed capital losses may be carried back three years or carried forward five years.<sup>14</sup>

Qualified dividends from a corporation are generally subject to tax at capital gains rates in the hands of shareholders eligible for the capital gains rates.<sup>15</sup>

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<sup>6</sup> The breakpoint between the 26-percent and 28-percent brackets is indexed for inflation.

<sup>7</sup> Sec. 55(b)(1). The maximum tax rates on net capital gain and dividends used in computing the regular tax are used in computing the tentative minimum tax. Sec. 55(b)(3). Refer to Section 3.11 of Rev. Proc. 2023-34, 2023-48 I.R.B. 1287, November 27, 2023, for the 2024 noncorporate exemption amounts.

<sup>8</sup> Sec. 1(h).

<sup>9</sup> Sec. 1211(b).

<sup>10</sup> *Ibid.*

<sup>11</sup> Sec. 1212(b).

<sup>12</sup> Sec. 11. Before 2018, corporations were subject to an AMT that was payable (in addition to all other tax liabilities) to the extent that it exceeded the corporation's regular income tax liability. If a corporation was subject to AMT in any taxable year, the amount of AMT was allowed as an AMT credit in any subsequent taxable year to the extent the corporation's regular tax liability exceeded its tentative minimum tax in the subsequent year. See sec. 53. As part of the repeal of the corporate AMT, a corporation may offset its entire regular tax liability for a taxable year with any AMT credits carried forward from prior taxable years. The corporate AMT credit is allowable and refundable for taxable years beginning after 2017 and before 2020.

<sup>13</sup> Sec. 1212(a).

<sup>14</sup> *Ibid.*

<sup>15</sup> Sec. 1(h)(11).

## **Tax rate on income of passthrough entities**

Income of an S corporation is taxed to the S corporation shareholders. Each S corporation shareholder's pro rata share of S corporation income, gain, loss, deduction, and credit is passed through to the shareholder.<sup>16</sup> Similarly, a partnership generally is not subject to Federal income tax, but rather, income and gain of the partnership generally are taxed to partners. Items of partnership income, gain, loss, deduction, and credit pass through to partners.<sup>17</sup>

The character of S corporation items and partnership items, such as ordinary income or loss, capital gain, or capital loss, passes through to S corporation shareholders and partners.<sup>18</sup> As a result, S corporation shareholders and partners are subject to tax at the rates applicable to their taxable income (including capital gains rates where applicable) and their filing status as an individual, estate, trust, or corporation.<sup>19</sup>

A business conducted as a sole proprietorship is not treated as an entity distinct from its owner for Federal income tax purposes.<sup>20</sup> Rather, the business owner is taxed directly on business income, and files Schedule C (sole proprietorships generally), Schedule E (rental real estate and royalties), or Schedule F (farms) with his or her individual tax return.<sup>21</sup>

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<sup>16</sup> Sec. 1363(a) and 1366.

<sup>17</sup> Sec. 701 and 702. Note, however, that certain publicly traded partnerships are treated as corporations for Federal tax purposes. Sec. 7704.

<sup>18</sup> Sec. 1366(b) and 702(b).

<sup>19</sup> In the case of a partnership, a tax-exempt entity or a passthrough entity (that generally is not subject to income tax) may be a partner.

<sup>20</sup> A single-member unincorporated entity is disregarded for Federal income tax purposes unless its owner elects to be treated as a C corporation. Treas. Reg. sec. 301.7701-3(b)(1)(ii). Sole proprietorships often are conducted through legal entities for nontax reasons. While sole proprietorships generally may have no more than one owner, a married couple that files a joint return and jointly owns and operates a business may elect to have that business treated as a sole proprietorship under section 761(f).

<sup>21</sup> Nonetheless, a sole proprietorship is treated as an entity separate from its owner for employment tax purposes, for certain excise taxes, and certain information reporting requirements. Treas. Reg. secs. 301.7701-2(c)(2)(iv)-(vi).

## B. Cost Recovery

### 1. Depreciation

#### In general

A taxpayer generally must capitalize the cost of property used in a trade or business or held to produce income and recover such cost over time through periodic deductions for depreciation or amortization.<sup>22</sup> The recovery period generally begins when the asset is placed in service by the taxpayer.<sup>23</sup> Tangible property generally is depreciated under the modified accelerated cost recovery system (“MACRS”), which determines depreciation for different types of property based on an assigned applicable depreciation method, recovery period, and convention.<sup>24</sup>

#### Recovery periods and depreciation methods

The applicable recovery period for an asset is determined in part by statute and in part by historic Treasury guidance.<sup>25</sup> The type of property is used to determine the class life of the asset, which in turn dictates that asset’s applicable recovery period.

The MACRS recovery periods applicable to most tangible personal property ranges from three to 20 years. The depreciation methods generally applicable to tangible personal property are the 200-percent and 150-percent declining balance methods,<sup>26</sup> switching to the straight-line

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<sup>22</sup> Sec. 263(a) and 167. In general, only the tax owner of property (*i.e.*, the taxpayer with the benefits and burdens of ownership) is entitled to claim tax benefits such as cost recovery deductions with respect to the property. In addition, where property is not used exclusively in a taxpayer’s business, the amount eligible for a deduction must be reduced by the amount related to personal use. Sec. 280A.

<sup>23</sup> Treas. Reg. sec. 1.167(a)-3, 1.167(a)-10(b), 1.167(a)-11(e)(1)(i), 1.167(a)-14, and 1.197-2(f).

<sup>24</sup> Sec. 168.

<sup>25</sup> Exercising authority granted by Congress, the Secretary issued Rev. Proc. 87-56, 1987-2 C.B. 674, laying out the framework of recovery periods for enumerated classes of assets. The Secretary clarified and modified the list of asset classes in Rev. Proc. 88-22, 1988-1 C.B. 785. In November 1988, Congress revoked the Secretary’s authority to modify the class lives of depreciable property. Rev. Proc. 87-56, as modified, remains in effect except to the extent that the Congress has, since 1988, statutorily modified the recovery period for certain depreciable assets, effectively superseding any administrative guidance regarding such property.

<sup>26</sup> Under the declining balance method, the depreciation rate is determined by dividing the appropriate percentage (here 150 or 200) by the appropriate recovery period. This leads to accelerated depreciation when the declining balance percentage is greater than 100. The table below illustrates depreciation for an asset with a cost of

method for the first taxable year where using the straight-line method with respect to the adjusted basis as of the beginning of that year yields a larger depreciation allowance. Most real property is recovered using the straight-line method over 39 years for nonresidential real property, 27.5 years for residential rental property, and 15 years for qualified improvement property.

Placed-in-service conventions

Depreciation of an asset begins when the asset is placed in service under the applicable convention.<sup>27</sup> Under MACRS, nonresidential real property, residential rental property, and any railroad grading or tunnel bore are subject to the mid-month convention, which treats all property placed in service during any month (or disposed of during any month) as placed in service (or disposed of) on the mid-point of such month.<sup>28</sup> All other property generally is subject to the half-year convention, which treats all property placed in service during any taxable year (or disposed of during any taxable year) as placed in service (or disposed of) on the mid-point of such taxable year to reflect the assumption that assets are placed in service ratably throughout the year.<sup>29</sup> However, if substantial property is placed in service during the last three months of a taxable year, a special rule requires use of the mid-quarter convention.<sup>30</sup> The mid-quarter convention prevents the recognition of disproportionately large amounts of first-year depreciation under the half-year convention.

Alternative depreciation system

The alternative depreciation system (“ADS”) is required to be used for tangible property used predominantly outside the United States,<sup>31</sup> certain tax-exempt use property,<sup>32</sup> tax-exempt

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\$1,000 and a seven-year recovery period under the 200-percent declining balance method, the 150-percent declining balance method, and the straight-line method.

Recovery method	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
200-percent declining balance	285.71	204.08	145.77	104.12	86.77	86.77	86.77	1,000.00
150-percent declining balance	214.29	168.37	132.29	121.26	121.26	121.26	121.26	1,000.00
Straight-line	142.86	142.86	142.86	142.86	142.86	142.86	142.86	1,000.00

\*Details may not add to totals due to rounding.

<sup>27</sup> Treas. Reg. sec. 1.167(a)-10(b).

<sup>28</sup> Sec. 168(d)(2) and (d)(4)(B).

<sup>29</sup> Sec. 168(d)(1) and (d)(4)(A).

<sup>30</sup> The mid-quarter convention treats all property placed in service (or disposed of) during any quarter as placed in service (or disposed of) on the mid-point of such quarter. Sec. 168(d)(3) and (d)(4)(C). The mid-quarter convention does not apply to property subject to the mid-month convention. Sec. 168(d)(3)(B).

<sup>31</sup> Sec. 168(g)(1)(A).

<sup>32</sup> Sec. 168(g)(1)(B).



bond financed property,<sup>33</sup> certain imported property covered by an Executive order,<sup>34</sup> and certain property held by either a real property trade or business<sup>35</sup> or a farming business<sup>36</sup> electing out of the business interest limitation under section 163(j).<sup>37</sup> In addition, an election to use ADS is available to taxpayers for any class of property for any taxable year.<sup>38</sup>

Under ADS, all property is depreciated using the straight-line method and the applicable convention over recovery periods which generally are equal to the class life of the property, with certain exceptions.<sup>39</sup>

## 2. Election to expense certain depreciable business assets

Subject to certain limitations, a taxpayer may elect under section 179 to deduct (or “expense”) the cost of qualifying property, rather than to recover such costs through depreciation deductions.<sup>40</sup> The maximum amount a taxpayer may expense is \$1,000,000 of the cost of qualifying property placed in service for the taxable year.<sup>41</sup> The \$1,000,000 amount is reduced (but not below zero) by the amount by which the cost of qualifying property placed in service during the taxable year exceeds \$2,500,000.<sup>42</sup>

The \$1,000,000 and \$2,500,000 amounts are indexed for inflation for taxable years beginning after 2018.<sup>43</sup> For taxable years beginning in 2024, the total amount that may be

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<sup>33</sup> Sec. 168(g)(1)(C).

<sup>34</sup> Sec. 168(g)(1)(D).

<sup>35</sup> Sec. 168(g)(1)(F) and (g)(8). An electing real property trade or business is defined in section 163(j)(7)(B) by cross reference to section 469(c)(7)(C) (*i.e.*, any real property development, redevelopment, construction, reconstruction, acquisition, conversion, rental, operation, management, leasing, or brokerage trade or business).

<sup>36</sup> Sec. 168(g)(1)(G). An electing farming business is defined in section 163(j)(7)(C), which defines an electing farming business as (i) a farming business as defined in section 263A(e)(4), or (ii) any trade or business of a specified agricultural or horticultural cooperative as defined in section 199A(g)(4) (a clerical correction may be necessary to correct this reference).

<sup>37</sup> Sec. 168(g).

<sup>38</sup> Sec. 168(g)(1)(E) and (g)(7).

<sup>39</sup> Sec. 168(g)(2) and (3).

<sup>40</sup> In the case of property purchased and placed in service by a partnership (or S corporation), the determination of whether the property is section 179 property is made at the partnership (or corporate) level, and the election to expense is made by the partnership (or S corporation). Treas. Reg. sec. 1.179-1(h).

<sup>41</sup> Sec. 179(b)(1).

<sup>42</sup> Sec. 179(b)(2).

<sup>43</sup> Sec. 179(b)(6).

expensed is \$1,220,000, and the phaseout threshold amount is \$3,050,000.<sup>44</sup> For example, assume that during 2024 a calendar year taxpayer purchased and placed in service \$4,000,000 of section 179 property. The \$1,220,000 section 179(b)(1) dollar amount for 2024 is reduced by the excess section 179 property cost amount of \$950,000 (\$4,000,000 – \$3,050,000). The taxpayer’s 2024 section 179 expense limitation is \$270,000 (\$1,220,000 – \$950,000).<sup>45</sup>

In general, qualifying property is depreciable tangible personal property, off-the-shelf computer software, and qualified real property<sup>46</sup> that is purchased for use in the active conduct of a trade or business.<sup>47</sup> Qualifying property excludes property used (1) outside the United States, (2) by certain tax-exempt organizations, and (3) by governmental units and foreign persons or entities.<sup>48</sup>

Qualified real property includes (1) qualified improvement property<sup>49</sup> and (2) any of the following improvements to nonresidential real property that are placed in service by the taxpayer after the date such nonresidential real property was first placed in service: roofs; heating, ventilation, and air-conditioning (“HVAC”) property;<sup>50</sup> fire protection and alarm systems; and security systems.<sup>51</sup>

Passenger automobiles subject to the section 280F limitation are eligible for section 179 expensing only to the extent of the dollar limitations in section 280F.<sup>52</sup> For sport utility vehicles above the 6,000 pound weight rating and not more than the 14,000 pound weight rating, which

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<sup>44</sup> Section 3.25 of Rev. Proc. 2023-34, 2023-48 I.R.B. 1287, November 27, 2023.

<sup>45</sup> The taxpayer’s remaining basis in the property may be eligible for bonus depreciation under section 168(k). See Treas. Reg. sec. 1.168(k)-1(a)(2)(iii).

<sup>46</sup> At the election of the taxpayer. Sec. 179(d)(1)(B)(ii). See sec. 3.02 of Rev. Proc. 2019-08, 2019-03 I.R.B. 347, January 14, 2019, for guidance regarding the election to treat qualified real property as section 179 property.

<sup>47</sup> Sec. 179(d)(1). If section 179 property is not used predominantly in a trade or business of the taxpayer at any time before the end of its recovery period, recapture rules apply. Sec. 179(d)(10); Treas. Reg. sec. 1.179-1(e).

<sup>48</sup> Sec. 179(d)(1) flush language and section 50(b) (other than paragraph (2) thereof). Thus, section 179 property includes certain depreciable tangible personal property used predominantly to furnish lodging or in connection with furnishing lodging (e.g., beds and other furniture, refrigerators, ranges, and other equipment used in the living quarters of a lodging facility such as an apartment house, dormitory, or any other facility (or part of a facility) where sleeping accommodations are provided and let). Treas. Reg. sec. 1.48-1(h).

<sup>49</sup> As defined in sec. 168(e)(6).

<sup>50</sup> HVAC property includes all components (whether in, on, or adjacent to the building) of a central air conditioning or heating system, including motors, compressors, pipes, and ducts. Treas. Reg. sec. 1.48-1(e)(2). See also sec. 3.01(1)(b)(iii)(B) of Rev. Proc. 2019-08, 2019-03 I.R.B. 347, January 14, 2019.

<sup>51</sup> Sec. 179(e).

<sup>52</sup> For a description of section 280F, see Joint Committee on Taxation, *General Explanation of Public Law 115-97* (JCS-1-18), December 2018, pp. 128-130. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

are not subject to the limitation under section 280F, the maximum cost that may be expensed for any taxable year under section 179 is \$25,000 (the “sport utility vehicle limitation”).<sup>53</sup> The \$25,000 amount is indexed for inflation for taxable years beginning after 2018. For taxable years beginning in 2024, the sport utility vehicle limitation is \$30,500.<sup>54</sup>

The amount eligible to be expensed for a taxable year may not exceed the aggregate taxable income from the active conduct of any trade or business (determined without regard to section 179).<sup>55</sup> Any amount that is not allowed as a deduction because of the taxable income limitation may be carried forward to succeeding taxable years (subject to limitations).<sup>56</sup> In the case of a partnership (or S corporation), the section 179 limitations are applied at the partnership (or corporate) and partner (or shareholder) levels.<sup>57</sup>

Amounts expensed under section 179 are allowed for both regular tax and alternative minimum tax purposes.<sup>58</sup> However, no general business credit under section 38 is allowed with respect to any amount for which a deduction is allowed under section 179.<sup>59</sup> In addition, if a corporation makes an election under section 179, the full amount of the deduction does not reduce earnings and profits. Rather, the expenditures that are deducted reduce corporate earnings and profits ratably over a five-year period.<sup>60</sup>

An expense election is made under rules prescribed by the Secretary.<sup>61</sup> In general, any election made under section 179, and any specification contained therein, may be revoked by the

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<sup>53</sup> Sec. 179(b)(5). For this purpose, a sport utility vehicle excludes any vehicle that: (1) is designed for more than nine individuals sitting behind the driver’s seat; (2) is equipped with an open cargo area, or a covered box not readily accessible from the passenger compartment, of at least six feet in interior length; or (3) has an integral enclosure, fully enclosing the driver compartment and load carrying device, does not have seating rearward of the driver’s seat, and has no body section protruding more than 30 inches ahead of the leading edge of the windshield.

<sup>54</sup> Section 3.25 of Rev. Proc. 2023-34, 2023-48 I.R.B. 1287, November 27, 2023.

<sup>55</sup> Sec. 179(b)(3). Wages, salaries, tips, and other compensation received by a taxpayer as an employee are included in the taxpayer’s aggregate amount of taxable income derived from the active conduct of a trade or business. Treas. Reg. sec. 1.179-2(c)(6)(iv).

<sup>56</sup> Sec. 179(b)(3)(B).

<sup>57</sup> Sec. 179(d)(8).

<sup>58</sup> See the Senate Finance Committee Report to Accompany H.R. 3838, Tax Reform Act of 1986, S. Rep. No. 99-313, May 29, 1985, p. 522. See also the Instructions for Form 6251, *Alternative Minimum Tax - Individuals (2022)*, p. 5.

<sup>59</sup> Sec. 179(d)(9).

<sup>60</sup> Sec. 312(k)(3)(B).

<sup>61</sup> Sec. 179(c)(1).

taxpayer with respect to any property without the consent of the Commissioner.<sup>62</sup> Such revocation, once made, is irrevocable.

### 3. Additional first-year depreciation deduction

An additional first-year depreciation deduction equal to 100 percent of the adjusted basis of qualified property is allowed for property acquired after September 27, 2017, and placed in service before January 1, 2023 (January 1, 2024 for certain property with a recovery period of at least 10 years, or certain transportation property<sup>63</sup> and aircraft<sup>64</sup>).<sup>65</sup> The 100-percent allowance is phased down by 20 percentage points per calendar year for property acquired after September 27, 2017, and placed in service after December 31, 2022 (after December 31, 2023, for longer production period property and certain aircraft).<sup>66</sup> This additional first-year depreciation is commonly referred to as “bonus depreciation.” The bonus depreciation applicable percentages for qualified property acquired and placed in service after September 27, 2017) are as follows.

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<sup>62</sup> Sec. 179(c)(2).

<sup>63</sup> Sec. 168(k)(2)(B). Property qualifying for the extended placed-in-service date (“longer production period property”) must have (1) a recovery period of at least 10 years or constitute transportation property, (2) an estimated production period exceeding one year, and (3) a cost exceeding \$1 million. Transportation property is tangible personal property used in the trade or business of transporting persons or property.

<sup>64</sup> Certain aircraft which is not transportation property, other than for agricultural or firefighting uses, also qualifies for the extended placed-in-service date, if at the time of the contract for purchase, the purchaser made a nonrefundable deposit of the lesser of ten percent of the cost or \$100,000, and which has an estimated production period exceeding four months and a cost exceeding \$200,000. Sec. 168(k)(2)(C).

<sup>65</sup> Sec. 168(k). The bonus depreciation deduction is generally subject to the rules regarding whether a cost must be capitalized under section 263A. For a description of section 263A, see Joint Committee on Taxation, *Present Law and Background Regarding the Federal Income Taxation of Small Businesses* (JCX-10-23), June 5, 2023, pp. 15-17. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

<sup>66</sup> Sec. 168(k)(6)(A) and (B).

Placed in Service Year	Bonus Depreciation Applicable Percentage	
	Qualified Property	Longer Production Period Property and Certain Aircraft
Sept. 28, 2017 – Dec. 31, 2022	100 percent	100 percent
2023	80 percent	100 percent
2024	60 percent	80 percent
2025	40 percent	60 percent
2026	20 percent	40 percent
2027	None	20 percent <sup>67</sup>
2028 and thereafter	None	None

The bonus depreciation deduction is allowed for both regular tax and alternative minimum tax purposes, but is not allowed in computing earnings and profits.<sup>68</sup> The basis of the property and the depreciation allowances in the placed in service year and later years are adjusted to reflect the bonus depreciation deduction.<sup>69</sup> The amount of the bonus depreciation deduction is not affected by a short taxable year.<sup>70</sup> A taxpayer may elect out of bonus depreciation for any class of property for any taxable year.<sup>71</sup> An election out of bonus depreciation may be revoked only with the consent of the Secretary.<sup>72</sup>

**Qualified property**

Property qualifying for the bonus depreciation deduction must meet the following requirements:

- The property must be:

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<sup>67</sup> 20 bonus depreciation applies to (1) the adjusted basis attributable to the manufacture, construction, or production of longer production period property before January 1, 2027 and (2) the entire adjusted basis of aircraft described in section 168(k)(2)(C) and placed in service in 2027.

<sup>68</sup> Sec. 56A(c)(13), 168(k)(2)(G), and 312(k)(3).

<sup>69</sup> Sec. 168(k)(1).

<sup>70</sup> Treas. Reg. sec. 1.168(k)-2(e)(1)(ii).

<sup>71</sup> For the definition of a class of property, see Treas. Reg. sec. 1.168(k)-2(f)(1)(ii). Treas. Reg. sec. 1.168(k)-2(f)(1) provides the procedures for making an election not to deduct bonus depreciation.

<sup>72</sup> Sec. 168(k)(7). See also Treas. Reg. sec. 1.168(k)-2(f)(5).

1. property to which MACRS applies with an applicable recovery period of 20 years or less,
  2. computer software other than computer software required to be amortized under section 197,
  3. water utility property,<sup>73</sup> or
  4. a qualified film, television, or live theatrical production,<sup>74</sup> for which a deduction otherwise would have been allowable under section 181 without regard to the dollar limitation or termination of that section;<sup>75</sup>
- Either (i) the original use of the property must commence with the taxpayer,<sup>76</sup> or (ii) the property must not have been used by the taxpayer at any time before acquisition and the acquisition must meet the requirements of section 179(d)(2)(A)-(C) and (3),<sup>77</sup> and
  - The property must be placed in service before January 1, 2027.<sup>78</sup>

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<sup>73</sup> As defined in section 168(e)(5).

<sup>74</sup> As defined in section 181(d) and (e).

<sup>75</sup> Under section 181, a taxpayer may generally elect to deduct up to \$15 million of the aggregate production costs (\$20 million in the case of productions in certain areas) of any qualified film, television or live theatrical production, commencing prior to January 1, 2026, in the year the costs are paid or incurred by the taxpayer, in lieu of capitalizing the costs and recovering them through depreciation allowances once the production is placed in service. The costs of the production that exceed the applicable dollar limitation are capitalized and recovered under the taxpayer's method of accounting for the recovery of such property once placed in service (e.g., under section 168(k) if eligible). For a description of section 181, see Joint Committee on Taxation, *General Explanation of Certain Tax Legislation Enacted in the 116th Congress (JCS-1-22)*, February 2022, pp. 480-482. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

<sup>76</sup> Treas. Reg. sec. 1.168(k)-2(b)(3)(ii).

<sup>77</sup> Sec. 168(k)(2)(A)(ii) and (E)(ii)(II). Used property must not be acquired (i) from a member of the taxpayer's family, including a spouse, ancestors, and lineal descendants, or from another related entity as defined in section 267; (ii) from a person who controls, is controlled by, or is under common control with, the taxpayer; nor (iii) in a nontaxable exchange such as a reorganization. The property must not be received as a gift or from a decedent. In the case of trade-ins, like-kind exchanges, or involuntary conversions, bonus depreciation applies only to any money paid in addition to the traded-in property or in excess of the adjusted basis of the replaced property. Sec. 179(d)(2)(A)-(C) and (3); Treas. Reg. sec. 1.168(k)-2(b)(3)(iii) and 1.179-4(c) and (d). A special rule applies in the case of a syndication transaction. Sec. 168(k)(2)(E)(iii); Treas. Reg. sec. 1.168(k)-2(b)(3)(vi).

<sup>78</sup> A qualified production is considered placed in service at the time of initial release, broadcast, or live staged performance. Sec. 168(k)(2)(H); Treas. Reg. sec. 1.168(k)-2(b)(4)(iii).

The bonus depreciation deduction is not allowed for any property that is required to be depreciated under the alternative depreciation system (“ADS”),<sup>79</sup> or for listed property in respect of which the business use is not greater than 50 percent (as determined under section 280F(b)).<sup>80</sup>

Longer production period property and certain aircraft must be acquired (or acquired pursuant to a written binding contract) before January 1, 2027, and placed in service before January 1, 2028. Taxpayers must also begin the manufacture, construction, or production of longer production period property for their own use before January 1, 2027.<sup>81</sup> Additionally, a special rule limits the amount bonus depreciation eligible for longer production period property to the portion of the basis that is properly attributable to costs incurred before January 1, 2027 (“progress expenditures”).<sup>82</sup>

### **Exception for certain businesses and regulated utilities not subject to the limitation on interest expense**

Qualified property eligible for the bonus depreciation deduction does not include any property which is primarily used in the trade or business of the furnishing or sale of (1) electrical energy, water, or sewage disposal services, (2) gas or steam through a local distribution system, or (3) transportation of gas or steam by pipeline, if the rates for such furnishing or sale, as the case may be, have been established or approved by a State or political subdivision thereof, by any agency or instrumentality of the United States, by a public service or public utility commission or other similar body of any State or political subdivision thereof, or by the governing or ratemaking body of an electric cooperative.<sup>83</sup>

Qualified property also does not include any property used in a trade or business that has had floor plan financing indebtedness<sup>84</sup> if the floor plan financing interest related to the

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<sup>79</sup> Sec. 168(g); Treas. Reg. sec. 1.168(k)-2(b)(2)(ii)(B). ADS is required to be used for tangible property used predominantly outside the United States, certain tax-exempt use property, tax-exempt bond financed property, certain imported property covered by an Executive order, and certain property held by either a real property trade or business or a farming business electing out of the business interest limitation under section 163(j). In addition, an election to use ADS is available to taxpayers for any class of property for any taxable year. Under ADS, all property is depreciated using the straight-line method and the applicable convention over recovery periods which generally are equal to the class life of the property.

<sup>80</sup> Sec. 168(k)(2)(D). For a description of section 280F, see Joint Committee on Taxation, *General Explanation of Public Law No. 115-97* (JCS-1-18), December 2018, pp. 128-130. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

<sup>81</sup> Sec. 168(k)(2)(E)(i).

<sup>82</sup> Sec. 168(k)(2)(B)(ii); Treas. Reg. sec. 1.168(k)-2(e)(1)(iii).

<sup>83</sup> Sec. 168(k)(9)(A) and 163(j)(7)(A)(iv); Treas. Reg. sec. 1.168(k)-2(b)(2)(ii)(F).

<sup>84</sup> As defined in section 163(j)(9).

indebtedness increased the taxpayer's section 163(j) interest limitation under section 163(j)(1)(C).<sup>85</sup>

## **Special rules**

### **Passenger automobiles**

The limitation under section 280F on the amount of depreciation deductions allowed with respect to certain passenger automobiles is increased in the first year by \$8,000 for automobiles that qualify for (and for which the taxpayer does not elect out of) bonus depreciation.<sup>86</sup> While the underlying section 280F limitation is indexed for inflation,<sup>87</sup> the section 280F increase amount is not indexed for inflation.

### **Long-term contracts**

In general, in the case of a long-term contract, the taxable income from the contract is determined under the percentage-of-completion method.<sup>88</sup> Solely for purposes of determining the percentage of completion under section 460(b)(1)(A), the cost of qualified property with a MACRS recovery period of seven years or less is taken into account as a cost allocated to the contract as if bonus depreciation had not been enacted for property placed in service before January 1, 2027 (January 1, 2028, in the case of longer production period property).<sup>89</sup>

## **4. Recapture rules**

### **In general**

Upon disposition of most depreciable or amortizable property used in a trade or business, the characterization of the resulting gain or loss as ordinary or capital depends on whether there is a net gain or a net loss under section 1231.<sup>90</sup> If there is a net gain, then, subject to the

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<sup>85</sup> Sec. 168(k)(9)(B); Treas. Reg. sec. 1.168(k)-2(b)(2)(ii)(G).

<sup>86</sup> Sec. 168(k)(2)(F). See Rev. Proc. 2019-13, 2019-09 I.R.B. 744, for a safe harbor method of accounting for determining depreciation deductions for passenger automobiles that qualify for bonus depreciation and are subject to the section 280F depreciation limitations.

<sup>87</sup> Sec. 280F(d)(7). See Rev. Proc. 2024-13, for the section 280F limitations that apply to passenger automobiles placed in service during calendar year 2024.

<sup>88</sup> Sec. 460.

<sup>89</sup> Sec. 460(c)(6).

<sup>90</sup> Section 1231 applies to gains and losses on the sale, exchange, or involuntary conversion of certain assets used in the taxpayer's trade or business. These assets are not capital assets, as that term is generally defined in the Code (see sec. 1221(a)). The assets eligible for this treatment include depreciable property or real property held for more than one year and used in a trade or business (if not includible in inventory, held primarily for sale to customers in the ordinary course of business, or property described in section 1221(a)(3) or (5)). Also included are certain special assets important in particular industries, such as interests in timber, coal, domestic iron ore, certain livestock, and certain unharvested crops.



depreciation recapture rules, long-term capital gain treatment generally results.<sup>91</sup> If there is a net loss, the loss is fully deductible against ordinary income.<sup>92</sup>

Sections 1245 and 1250 were enacted to prevent taxpayers from deducting depreciation against ordinary income but paying tax on the gain from the later sale of depreciated property at capital gain rates.<sup>93</sup> The depreciation recapture rules require taxpayers to recognize ordinary income in an amount equal to all or a portion of the gain realized on the disposition of personal property and certain real property. In addition, the recapture rules generally override various nonrecognition provisions in the Code.<sup>94</sup>

## **Section 1245**

Section 1245 property is depreciable personal property (tangible or intangible) and certain real<sup>95</sup> property.<sup>96</sup> In addition to depreciation under section 167, the section 1245 recapture rules apply to other cost recovery provisions, including first-year expensing provisions.<sup>97</sup> For example, any deduction allowed under section 179 or 181 is treated as if it were a deduction allowable for amortization. Similarly, for recapture purposes, an amortizable section 197 intangible is considered section 1245 property and is subject to the section 1245 recapture rules.<sup>98</sup>

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<sup>91</sup> Sec. 1231(a)(1). However, net section 1231 gain is converted into ordinary income to the extent net section 1231 losses in the previous five years were treated as ordinary losses. Sec. 1231(c). In addition, net gains may be denied capital gains treatment (and taxed as ordinary income) if the transaction is between certain related taxpayers. Sec. 1239.

<sup>92</sup> Sec. 1231(a)(2).

<sup>93</sup> For example, assume that, absent the recapture provisions, an individual taxpayer claims \$100,000 of depreciation on business equipment in years 1 and 2 and sells the equipment in year 3 for a \$100,000 gain in connection with his or her sole proprietorship. The \$100,000 of depreciation deductions reduce that individual's taxes by \$37,000 (37 percent top individual marginal tax rate times \$100,000 depreciation). The \$100,000 gain on the sale increases that individual's taxes by only \$20,000 (20 percent long-term capital gains rate times \$100,000 gain). The net result is a tax benefit to the owner of \$17,000 (\$37,000 tax benefit of depreciation deductions less \$20,000 long-term capital gains tax).

<sup>94</sup> See Treas. Reg. sec. 1.1245-6(b) and 1.1250-1(c)(2).

<sup>95</sup> Generally, real property is section 1250 property and not section 1245 property. However, certain real property constitutes 1245 property, including other property used as an integral part of manufacturing, production, or extraction or of furnishing transportation, communications, electrical energy, gas, water, or sewage disposal services; a research facility used in connection with any of these activities; or a facility used in connection with any of these activities for the bulk storage of fungible commodities. Sec. 1245(a)(3)(B). Section 1245 real property also includes certain amortizable real property, single-purpose agricultural or horticultural structures, petroleum-related storage facilities, and railroad grading or tunnel bores. Sec. 1245(a)(3)(C), (D), (E) and (F).

<sup>96</sup> Sec. 1245(a)(3); Treas. Reg. sec. 1.1245-3.

<sup>97</sup> Sec. 1245(a)(2)(C) and (a)(3)(C).

<sup>98</sup> Sec. 197(f)(7) and 1245(b)(8).

When a taxpayer disposes of section 1245 property, the taxpayer must recapture the gain on disposition as ordinary income to the extent of the property's cumulative depreciation or amortization deductions.<sup>99</sup> Any remaining gain is treated as section 1231 gain (*i.e.*, treated as long-term capital gain).

### **Section 1250**

Section 1250 property is depreciable real property, other than that included within the definition of section 1245 property.<sup>100</sup> Gain on the disposition of section 1250 property is treated as ordinary income to the extent of the excess depreciation or amortization taken over what would have been available under the straight-line method.<sup>101</sup> However, if section 1250 property is held for one year or less, all depreciation is recaptured, regardless of whether it exceeds the depreciation that would have been available under the straight-line method.<sup>102</sup> Special rules phase out the recapture for certain types of property held over a specified period of time.<sup>103</sup>

Since section 1250 nonresidential real property and residential rental property placed in service after 1986 must be depreciated using straight-line depreciation under MACRS, such property is generally not subject to recapture under section 1250. However, in the case of qualified real property for which the unadjusted basis is reduced by a section 179 deduction, the amount of such reduction is treated as section 1245 property, and the remaining unadjusted basis is treated as section 1250 property.<sup>104</sup> In addition, bonus depreciation allowed or allowable with respect to qualified improvement property constitutes additional depreciation for purposes of computing section 1250 recapture (*i.e.*, the bonus depreciation deduction is not a straight-line method).<sup>105</sup>

For corporations, the amount treated as ordinary income on the disposition of section 1250 property is increased by 20 percent of the additional amount that would be treated as

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<sup>99</sup> Sec. 1245(a)(1). Generally, all depreciation or amortization adjustments allowed or allowable must be taken into account. However, if a taxpayer can establish by adequate records or other sufficient evidence that the amount allowed for depreciation or amortization for any period was less than the amount allowable for such period, the taxpayer may take into account only the amount allowed. Treas. Reg. sec. 1.1245-2(a)(7).

<sup>100</sup> Sec. 1250(c); Treas. Reg. sec. 1.1250-1(e).

<sup>101</sup> Sec. 1250(a).

<sup>102</sup> Sec. 1250(b)(1).

<sup>103</sup> Sec. 1250(a)(1)(B). The special phase-out rule applies to residential rental property, certain types of subsidized housing, and property for which rapid depreciation of rehabilitation expenditures was claimed under section 167(k) as in effect on the date before the date of the enactment of the Revenue Reconciliation Act of 1990.

<sup>104</sup> See Notice 2013-59, 2013-40 I.R.B. 297, for special rules for determining the portion of the gain that is attributable to section 1245 property upon the sale or other disposition of qualified real property.

<sup>105</sup> See Treas. Reg. sec. 1.168(k)-2(g)(3).

ordinary income if the property were subject to recapture under the rules for section 1245 property.<sup>106</sup>

For individuals, any capital gain that would be treated as ordinary income if the property were subject to recapture under the rules for section 1245 property is generally taxed at a maximum rate of 25 percent.<sup>107</sup> This is referred to as “unrecaptured section 1250 gain.”<sup>108</sup> The amount of unrecaptured section 1250 gain (before the reduction for the net loss) attributable to the disposition of property to which section 1231 applies may not exceed the net section 1231 gain for the year.<sup>109</sup>

### **Additional recapture rules**

Recapture rules also apply to certain business credits. For example, if property eligible for an investment tax credit (such as property eligible for the sections 48C or 48D credit, discussed more below) is disposed of, or otherwise ceases to be investment tax credit property (*e.g.*, casualty loss), before the close of the recapture period, the tax for the year is increased by a recapture percentage.<sup>110</sup> Advance rehabilitation and certain energy credits also are subject to recapture provisions. In addition, in determining the amount of gain that is recaptured as ordinary income under section 1245 or 1250, the amount of an investment credit downward basis adjustment also is treated as a deduction allowed for depreciation.<sup>111</sup>

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<sup>106</sup> Sec. 291(a)(1).

<sup>107</sup> Sec. 1(h)(1)(E).

<sup>108</sup> See section 1(h)(6), which defines “unrecaptured 1250 gain” as any long-term capital gain from the sale or exchange of section 1250 property held more than one year to the extent of the gain that would have been treated as ordinary income if section 1250 applied to all depreciation, reduced by the net loss (if any) attributable to the items taken into account in computing 28-percent rate gain of an individual.

<sup>109</sup> Sec. 1(h)(6)(B).

<sup>110</sup> Sec. 50(a). See also Notice 2013-12, 2013-10 I.R.B. 543 (the recapture and other special rules in section 50 apply to the section 48C qualifying advanced energy project credit).

<sup>111</sup> Sec. 50(c)(4).

## C. Incentives for Research

### 1. Research or experimental expenditures

Taxpayers must generally capitalize business expenses they incur to develop or create an asset having a useful life extending beyond the current year and depreciate that asset over its useful life.<sup>112</sup> This included research or experimental expenditures before the enactment of former section 174, where taxpayers were required to capitalize those expenditures until they could determine whether the research created amortizable property that had a useful life. Former section 174 afforded flexibility to taxpayers regarding the treatment of otherwise capitalizable research or experimental expenditures regardless of whether those expenditures had a useful life.

Public Law 115-97<sup>113</sup> modified the cost recovery rules for research or experimental expenditures paid or incurred in taxable years beginning after December 31, 2021 (with conforming changes made to sections 41 and 280C).<sup>114</sup> Section 174, as applicable to amounts paid or incurred in taxable years beginning before January 1, 2022, is described first below, followed by a description of section 174, as applicable to amounts paid or incurred in taxable years beginning after December 31, 2021.

#### **Amounts paid or incurred in taxable years beginning before January 1, 2022**

For taxable years beginning before January 1, 2022, taxpayers may elect to deduct the amount of reasonable research or experimental expenditures paid or incurred in connection with a trade or business.<sup>115</sup> Alternatively, taxpayers may elect to capitalize research or experimental expenditures and recover them ratably over the useful life of the research, but in no case over a period of less than 60 months,<sup>116</sup> or elect to capitalize and amortize those expenditures over 10 years.<sup>117</sup> Research or experimental expenditures under section 174 are not required to be

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<sup>112</sup> Sec. 167 and 263(a).

<sup>113</sup> December 22, 2017.

<sup>114</sup> Sec. 174.

<sup>115</sup> Former sec. 174(a) and (e).

<sup>116</sup> Former sec. 174(b). Taxpayers that have a taxable loss or that would have a taxable loss after allowance of the deduction for research or experimental expenses, including taxpayers that incur research or experimental expenses before the start of an active trade or business, may elect to capitalize these expenses under this rule.

<sup>117</sup> Former sec. 174(f)(2) and 59(e). This special 10-year election is available to mitigate the effect of the individual alternative minimum taxable income adjustment for research expenditures set forth in section 56(b)(2). The election under section 59(e) to amortize research or experimental expenditures over 10 years does not apply to research or experimental expenditures paid or incurred in taxable years beginning after December 31, 2021. A technical correction may be necessary to reflect this intent.

capitalized under either section 263(a)<sup>118</sup> or section 263A<sup>119</sup> and are generally reduced by the amount of the taxpayer's research credit under section 41.<sup>120</sup>

Research or experimental expenditures generally include all costs incurred in the experimental or laboratory sense incident to the development or improvement of a product.<sup>121</sup> Qualifying costs are incurred for activities intended to discover information that would eliminate uncertainty concerning the development or improvement of a product.<sup>122</sup> Uncertainty exists when information available to the taxpayer is not sufficient to ascertain the capability or method for developing, improving, or appropriately designing the product.<sup>123</sup>

Whether expenditures qualify as deductible research expenses depends on the nature of the activity to which the costs relate, not the nature of the product or improvement being developed or the level of technological advancement the product or improvement represents.<sup>124</sup> The ultimate success, failure, sale, or other use of research or property is irrelevant.<sup>125</sup> Examples of qualifying costs include salaries for those engaged in research or experimentation efforts, overhead incurred to operate and maintain research facilities (*e.g.*, utilities, depreciation, and rent), and materials and supplies used and consumed in the course of research or experimentation (including amounts incurred in conducting trials).<sup>126</sup> The costs to develop computer software have been accorded treatment similar to the cost recovery treatment of research or experimental expenditures.<sup>127</sup>

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<sup>118</sup> Sec. 263(a)(1)(B).

<sup>119</sup> Sec. 263A(c)(2).

<sup>120</sup> Former sec. 280C(c)(1) and (2). Taxpayers may instead elect to claim a reduced research credit amount under section 41 in lieu of reducing deductions otherwise allowed. Sec. 280C(c)(3), as effective for amounts paid or incurred in taxable years beginning before January 1, 2022.

<sup>121</sup> Treas. Reg. sec. 1.174-2(a)(1) and (2). Product is defined to include any pilot model, process, formula, invention, technique, patent, or similar property, and includes products to be used by the taxpayer in its trade or business as well as products to be held for sale, lease, or license. Treas. Reg. sec. 1.174-2(a)(11), Example 10, provides an example of new process development costs for which the cost recovery rules of section 174 apply.

<sup>122</sup> Treas. Reg. sec. 1.174-2(a)(1).

<sup>123</sup> *Ibid.*

<sup>124</sup> *Ibid.*

<sup>125</sup> *Ibid.*

<sup>126</sup> See Treas. Reg. sec. 1.174-4(c). The definition of research or experimental expenditures also includes the costs of obtaining a patent, such as attorneys' fees incurred in making and perfecting a patent application. Treas. Reg. sec. 1.174-2(a)(1).

<sup>127</sup> Rev. Proc. 2000-50, 2000-2 C.B. 601.

Research or experimental expenditures do not include expenditures for quality control testing;<sup>128</sup> efficiency surveys; management studies; consumer surveys; advertising or promotions; the acquisition of another's patent, model, production, or process; or research in connection with literary, historical, or similar projects.<sup>129</sup>

Generally, no deduction under section 174 is allowable for expenditures incurred to acquire or improve land or for depreciable or depletable property used in connection with any research or experimentation.<sup>130</sup> In addition, no deduction is allowed for any expenditure incurred to ascertain the existence, location, extent, or quality of any deposit of ore or other minerals (including oil and gas).<sup>131</sup>

### **Amounts paid or incurred in taxable years beginning after December 31, 2021**

For taxable years beginning after December 31, 2021, taxpayers must capitalize and amortize specified research or experimental expenditures ratably over a five-year period (or, in the case of expenditures that are attributable to research that is conducted outside of the United States, over a 15-year period),<sup>132</sup> beginning with the midpoint of the taxable year in which those costs are paid or incurred (referred to as the half-year convention).<sup>133</sup> Capitalizable specified research or experimental expenditures include expenditures connected with software development.<sup>134</sup> Specified research or experimental expenditures exclude expenditures incurred to acquire or improve land or for depreciable or depletable property used in connection with the research or experimentation.<sup>135</sup> Also excluded are exploration expenditures incurred for ore or other minerals (including oil and gas).<sup>136</sup>

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<sup>128</sup> Quality control testing means testing to determine whether units of materials or products conform to specified parameters but does not include testing to determine if the design of the product is appropriate. Treas. Reg. sec. 1.174-2(a)(7).

<sup>129</sup> Treas. Reg. sec. 1.174-2(a)(6).

<sup>130</sup> Former sec. 174(c). However, depreciation and depletion allowances may be considered section 174 expenditures. *Ibid.*

<sup>131</sup> Former sec. 174(d). Special rules apply with respect to geological and geophysical costs (section 167(h)), qualified tertiary injectant expenses (section 193), intangible drilling costs (sections 263(c) and 291(b)), and mining exploration and development costs (sections 616 and 617).

<sup>132</sup> For this purpose, the term "United States" includes the United States, the Commonwealth of Puerto Rico, and any possession of the United States. Sec. 174(a)(2)(B), by reference to sec. 41(d)(4)(F).

<sup>133</sup> Sec. 174(a)(2)(B).

<sup>134</sup> Sec. 174(c)(3).

<sup>135</sup> Sec. 174(c)(3). However, depreciation and depletion allowances may be considered section 174 expenditures. *Ibid.*

<sup>136</sup> Sec. 174(c)(2).

In the case of retired, abandoned, or disposed property with respect to which specified research or experimental expenditures are paid or incurred, any remaining basis may not be recovered in the year of retirement, abandonment, or disposal, but instead must continue to be amortized over the remaining amortization period.<sup>137</sup>

If a taxpayer's research credit under section 41 for a taxable year beginning after December 31, 2021, exceeds the amount allowed as a deduction under section 174 for that taxable year, the amount chargeable to capital account under section 174 for such taxable year must be reduced by that excess amount.<sup>138</sup> A taxpayer instead may elect to claim a reduced research credit amount under section 41.<sup>139</sup> If this election is made, the research credit is reduced by an amount equal to the amount of the credit multiplied by the highest corporate tax rate.<sup>140</sup>

## **2. Research credit**

### **General rule**

A taxpayer may generally claim a credit equal to 20 percent of the amount by which the taxpayer's qualified research expenses for a taxable year exceed its base amount for that year (the "research credit").<sup>141</sup> Thus, the research credit is generally available with respect to incremental increases in qualified research. An alternative simplified credit (with a 14-percent rate and a different base amount) may be claimed in lieu of this credit.<sup>142</sup>

A 20-percent research credit also is available with respect to the excess of (1) 100 percent of corporate cash expenses (including grants or contributions) paid for basic research conducted by universities (and certain nonprofit scientific research organizations) over (2) the sum of (a) the greater of two minimum basic research floors plus (b) an amount reflecting any decrease in nonresearch giving to universities by the corporation as compared to such giving during a fixed-base period, as adjusted for inflation.<sup>143</sup> This separate credit computation commonly is referred to as the "basic research credit."

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<sup>137</sup> Sec. 174(d).

<sup>138</sup> Sec. 280C(c)(1).

<sup>139</sup> Sec. 280C(c)(2)(A).

<sup>140</sup> Sec. 280C(c)(2)(B).

<sup>141</sup> Sec. 41(a)(1).

<sup>142</sup> Sec. 41(c)(4).

<sup>143</sup> Sec. 41(a)(2) and (e). The base period for the basic research credit generally extends from 1981 through 1983.

Finally, a 20-percent research credit is available for a taxpayer's expenditures on research undertaken by an energy research consortium for energy research.<sup>144</sup> This separate credit computation commonly is referred to as the "energy research credit." Unlike the other research credits, the energy research credit applies to all qualified expenditures, not just those that exceed a base amount.

### **Computation of general research credit**

The general research tax credit applies only to the extent that the taxpayer's qualified research expenses for the current taxable year exceed its base amount. The base amount for the current year generally is computed by multiplying the taxpayer's fixed-base percentage by the average amount of the taxpayer's gross receipts for the four preceding years.<sup>145</sup> If a taxpayer both incurred qualified research expenses and had gross receipts during each of at least three years from 1984 through 1988, then its fixed-base percentage is the ratio that its total qualified research expenses for the 1984 to 1988 period bears to its total gross receipts for that period (subject to a maximum fixed-base percentage of 16 percent).<sup>146</sup> Special rules apply to all other taxpayers (so-called "start-up firms").<sup>147</sup> In computing the research credit, a taxpayer's base amount cannot be less than 50 percent of its current-year qualified research expenses.<sup>148</sup>

### **Alternative simplified credit**

The alternative simplified credit is equal to 14 percent of qualified research expenses that exceed 50 percent of the average qualified research expenses for the three preceding taxable years.<sup>149</sup> The rate is reduced to six percent if a taxpayer has no qualified research expenses in

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<sup>144</sup> Sec. 41(a)(3).

<sup>145</sup> Sec. 41(c)(1).

<sup>146</sup> Sec. 41(c)(3).

<sup>147</sup> The Small Business Job Protection Act of 1996 expanded the definition of start-up firms under section 41(c)(3)(B)(i) to include any firm if the first taxable year in which such firm had both gross receipts and qualified research expenses began after 1983. A special rule (enacted in 1993) is designed to gradually recompute a start-up firm's fixed-base percentage based on its actual research experience. Under this special rule, a start-up firm is assigned a fixed-base percentage of three percent for each of its first five taxable years after 1993 in which it incurs qualified research expenses. A start-up firm's fixed-base percentage for its sixth through tenth taxable years after 1993 in which it incurs qualified research expenses is a phased-in ratio based on the firm's actual research experience. For all subsequent taxable years, the taxpayer's fixed-base percentage is its actual ratio of qualified research expenses to gross receipts for any five years selected by the taxpayer from its fifth through tenth taxable years after 1993. Sec. 41(c)(3)(B).

<sup>148</sup> Sec. 41(c)(2).

<sup>149</sup> Sec. 41(c)(4)(A).



any one of the three preceding taxable years.<sup>150</sup> An election to use the alternative simplified credit applies to all succeeding taxable years unless revoked with the consent of the Secretary.<sup>151</sup>

### **Eligible expenses**

Qualified research expenses eligible for the research credit consist of: (1) in-house expenses of the taxpayer for wages and supplies attributable to qualified research; (2) certain time-sharing costs for computer use in qualified research; and (3) 65 percent of amounts paid or incurred by the taxpayer to certain other persons for qualified research conducted on the taxpayer's behalf (so-called "contract research expenses").<sup>152</sup> Notwithstanding the limitation for contract research expenses, qualified research expenses include 100 percent of amounts paid or incurred by the taxpayer to an eligible small business, university, or Federal laboratory for qualified energy research.<sup>153</sup>

To be eligible for the credit, the research not only has to satisfy the requirements of section 174, but also must be undertaken for the purpose of discovering information that is technological in nature, the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, and substantially all of the activities of which constitute elements of a process of experimentation for functional aspects, performance, reliability, or quality of a business component.<sup>154</sup> Research does not qualify for the credit if substantially all of the activities relate to style, taste, cosmetic, or seasonal design factors.<sup>155</sup>

In addition, research does not qualify for the credit if it is:

1. conducted after the beginning of commercial production of the business component;
2. related to the adaptation of an existing business component to a particular customer's requirements;
3. related to the duplication of an existing business component from a physical examination of the component itself or certain other information;

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<sup>150</sup> Sec. 41(c)(4)(B).

<sup>151</sup> Sec. 41(c)(4)(C).

<sup>152</sup> Sec. 41(b). Under a special rule, 75 percent of amounts paid to a research consortium for qualified research are treated as qualified research expenses eligible for the research credit (rather than 65 percent under the general rule under section 41(b)(3) governing contract research expenses) if (1) such research consortium is a tax-exempt organization that is described in section 501(c)(3) (other than a private foundation) or section 501(c)(6) and is organized and operated primarily to conduct scientific research, and (2) such qualified research is conducted by the consortium on behalf of the taxpayer and one or more persons not related to the taxpayer. Sec. 41(b)(3)(C).

<sup>153</sup> Sec. 41(a)(3).

<sup>154</sup> Sec. 41(d).

<sup>155</sup> Sec. 41(d)(3)(B).

4. related to certain efficiency surveys, management function or technique, market research, market testing, or market development, routine data collection or routine quality control;
5. related to software developed primarily for internal use by the taxpayer;
6. conducted outside the United States, Puerto Rico, or any U.S. possession;
7. in the social sciences, arts, or humanities; or
8. funded by any grant, contract, or otherwise by another person (or government entity).<sup>156</sup>

### **Relation to amortization deduction**

If a taxpayer's research credit under section 41 for a taxable year beginning after 2021 exceeds the amount allowed as an amortization deduction under section 174 for such taxable year, the amount chargeable to capital account under section 174 for such taxable year must be reduced by that excess amount.<sup>157</sup> A taxpayer may alternatively elect to claim a reduced research credit amount under section 41 in lieu of reducing its section 174 expenditures for the taxable year.<sup>158</sup> If such an election is made, the research credit is reduced by an amount equal to that credit multiplied by the highest corporate tax rate.

### **Specified credits allowed against alternative minimum tax for small businesses**

In the case of an eligible small business,<sup>159</sup> the research credit determined under section 41 is a specified credit. Thus, the research credits of an eligible small business may offset both regular tax and alternative minimum tax liabilities. For this purpose, an eligible small business is, with respect to any taxable year, a corporation the stock of which was not publicly traded,<sup>160</sup> a partnership, or a sole proprietor,<sup>161</sup> if the average annual gross receipts does not exceed \$50

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<sup>156</sup> Sec. 41(d)(4).

<sup>157</sup> Sec. 280C(c)(1).

<sup>158</sup> Sec. 280C(c)(2).

<sup>159</sup> Defined in section 38(c)(5)(A), after application of the rules of section 38(c)(5)(B).

<sup>160</sup> Large C corporations meeting certain requirements ("applicable corporations") are subject to an alternative minimum tax that is based on adjusted financial statement income ("AFSI"). Sec. 55(b)(2)(A) and 56A. Generally, an applicable corporation is a corporation that exceeds \$1 billion in average annual AFSI in a taxable year ending after December 31, 2022. Sec. 59(k). Corporations that are not applicable corporations are not subject to the corporate alternative minimum tax. Sec. 55(b)(2)(B).

<sup>161</sup> An alternative minimum tax is imposed on an individual, estate, or trust in an amount by which the tentative minimum tax exceeds the regular income tax for the taxable year. Sec. 55. For a discussion of the alternative minimum tax applicable to noncorporate taxpayers, see Joint Committee on Taxation, *Overview of the Federal Tax System as in Effect for 2023* (JCX-9-23), May 11, 2023. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

million.<sup>162</sup> A research credit determined with respect to a partnership or S corporation is not treated as a specified credit by a partner or shareholder unless the partner or shareholder meets the gross receipts test for the taxable year in which the research credit is treated as a current year business credit.<sup>163</sup>

## **Payroll tax credit for qualified small businesses**

### FICA taxes

The Federal Insurance Contributions Act (“FICA”) imposes tax on employers and employees based on the amount of wages (as defined for FICA purposes) paid to an employee during the year, often referred to as “payroll” taxes.<sup>164</sup> The tax imposed on the employer and on the employee is each composed of two parts: (1) the Social Security or old age, survivors, and disability insurance (“OASDI”) tax equal to 6.2 percent of covered wages up to the taxable wage base (\$168,600 for 2024); and (2) the Medicare or hospital insurance (“HI”) tax equal to 1.45 percent of all covered wages.<sup>165</sup> The employee portion of the FICA tax generally must be withheld and remitted to the Federal government by the employer.

An employer generally files quarterly employment tax returns showing its liability for FICA taxes with respect to its employees’ wages for the quarter, as well as the employee FICA taxes and income taxes withheld from the employees’ wages.

### Payroll tax credit

A qualified small business may elect for any taxable year to claim a certain amount of its research credit as a payroll tax credit against its employer OASDI and HI liability, rather than against its income tax liability (the “payroll tax credit”).<sup>166</sup> If a taxpayer makes an election, the amount so elected is treated as a research credit for purposes of section 280C.<sup>167</sup>

A qualified small business is defined, with respect to any taxable year, as a corporation (including an S corporation) or partnership (1) with gross receipts of less than \$5 million for the

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<sup>162</sup> Sec. 38(c)(5)(A).

<sup>163</sup> Sec. 38(c)(5)(B).

<sup>164</sup> Secs. 3101-3128.

<sup>165</sup> The employee portion of the HI tax under FICA (not the employer portion) is increased by an additional tax of 0.9 percent on wages received in excess of a threshold amount. The threshold amount is \$250,000 in the case of a joint return, \$125,000 in the case of a married individual filing a separate return, and \$200,000 in any other case.

<sup>166</sup> Sec. 41(h).

<sup>167</sup> Taxpayers either reduce their section 174 expenditures by the amount by which the research credit for the taxable year exceeds the section 174 amortization deduction for the taxable year or elect a reduced research credit amount. The election is not taken into account for purposes of determining any amount allowable as a payroll tax deduction.

taxable year<sup>168</sup> and (2) that did not have gross receipts for any taxable year before the five taxable year period ending with the taxable year.<sup>169</sup> An individual carrying on one or more trades or businesses also may be considered a qualified small business if the individual meets the conditions set forth in (1) and (2), taking into account its aggregate gross receipts received with respect to all trades or businesses.<sup>170</sup> A qualified small business does not include tax exempt organizations under section 501.<sup>171</sup>

A taxpayer may make an annual election<sup>172</sup> specifying the amount of its research credit not to exceed \$500,000 that may be used as a payroll tax credit, on or before the due date (including extensions) of its originally filed return.<sup>173</sup> A taxpayer may not make this election if it has made such an election for five or more preceding taxable years.<sup>174</sup> An election to apply the research credit against payroll tax liability may not be revoked without the consent of the Secretary.<sup>175</sup> In the case of a partnership or S corporation, the entity makes the election to apply the credit against its payroll tax liability.<sup>176</sup>

The payroll tax credit is allowed against the taxpayer's OASDI and HI tax liability for the first calendar quarter beginning after the date the taxpayer files the election. The payroll tax credit is first used to reduce the employer share of OASDI tax liability up to \$250,000 per quarter, and any remaining credit reduces the employer share of HI tax for the quarter.<sup>177</sup>

If the payroll tax credit exceeds the qualified small business's employer share of the OASDI and HI tax liabilities for a calendar quarter, the excess is allowed as a credit for the following calendar quarter (*i.e.*, the payroll tax credit is not refundable if it exceeds the taxpayer's employer share of the OASDI and HI tax liabilities for a calendar quarter, but such

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<sup>168</sup> For this purpose, gross receipts are determined under the rules of section 448(c)(3), without regard to subparagraph (A) thereof.

<sup>169</sup> Sec. 41(h)(3)(A)(i).

<sup>170</sup> Sec. 41(h)(3)(A)(ii).

<sup>171</sup> Sec. 41(h)(3)(B).

<sup>172</sup> See IRS Notice 2017-23, 2017-16 I.R.B. 1100, April 17, 2017, and IRS Form 6765, *Credit for Increasing Research Activities*, for guidance on making the election.

<sup>173</sup> In the case of a qualified small business that is a partnership, this is the return required to be filed under section 6031. In the case of a qualified small business that is an S corporation, this is the return required to be filed under section 6037. In the case of any other qualified small business, this is the return of tax for the taxable year.

<sup>174</sup> Sec. 41(h)(4)(B)(ii).

<sup>175</sup> Sec. 41(h)(4)(A)(iii).

<sup>176</sup> Sec. 41(h)(4)(C).

<sup>177</sup> Sec. 3111(f). See also IRS Form 8974, *Qualified Small Business Payroll Tax Credit for Increasing Research Activities*, which must be completed and attached to the employment tax return.

excess may be carried forward and applied against such liabilities in succeeding calendar quarters).<sup>178</sup>

The annual payroll tax portion of the credit is equal to the lesser of:

1. \$250,000 for the portion credited against the OASDI<sup>179</sup> tax plus \$250,000 for the portion credited against the HI tax<sup>180</sup> (for a maximum credit of \$500,000);
2. the research credit determined for the taxable year;<sup>181</sup> or
3. in the case of a qualified small business other than a partnership or S corporation, the amount of the business credit carryforward under section 39 from the taxable year (determined before the application of this rule to the taxable year).<sup>182</sup>

In the case of members of the same controlled group or group under common control treated as a single taxpayer for purposes of section 41(h), each \$250,000 election limitation amount (*i.e.*, the OASDI and HI limits) is allocated among members in proportion to each member's qualified research expenses on which the research credit is based.<sup>183</sup>

### 3. Orphan drug credit

Section 45C provides an elective 25-percent tax credit for qualified clinical testing expenses incurred in testing of certain drugs for rare diseases or conditions, generally referred to as "orphan drugs." Qualified clinical testing expenses are costs paid or incurred to test an orphan drug after the drug has been approved for human testing by the Food and Drug Administration (the "FDA") but before the drug has been approved for sale by the FDA.<sup>184</sup> The testing must occur within the United States, if there is a sufficient testing population.<sup>185</sup> A rare disease or condition is defined as one that (1) affects fewer than 200,000 persons in the United States, or (2) affects more than 200,000 persons, but for which there is no reasonable expectation that

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<sup>178</sup> Sec. 3111(f)(3).

<sup>179</sup> Sec. 41(h)(4)(B)(i)(I) and 3111(f)(1)(A).

<sup>180</sup> Sec. 41(h)(4)(B)(i)(II) and 3111(f)(1)(B).

<sup>181</sup> Sec. 41(h)(2)(A).

<sup>182</sup> Sec. 41(h)(2)(C). For example, assume that a C corporation (1) is a qualified small business, (2) has a research credit of \$120,000, and (3) a general business credit carryforward from the tax year (determined without regard to the section 41(h) election) of \$100,000. The payroll tax credit for the tax year can't exceed \$100,000.

<sup>183</sup> Sec. 41(h)(5)(B)(ii).

<sup>184</sup> Sec. 45C(b).

<sup>185</sup> Sec. 45C(d)(2). If there is an insufficient testing population, testing may occur outside the United States subject to certain restrictions.

businesses could recoup the costs of developing a drug for such disease or condition from sales in the United States of the drug.<sup>186</sup>

Amounts included in computing the credit are excluded from the computation of the research credit.<sup>187</sup>

No deduction is allowed for the portion of otherwise allowable qualified clinical testing expenses equal to the amount of the orphan drug credit allowed for the taxable year.<sup>188</sup>

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<sup>186</sup> Sec. 45C(d)(1).

<sup>187</sup> Sec. 45C(c).

<sup>188</sup> Sec. 280C(b).

## D. Certain Energy-Related Production and Investment Incentives

The Inflation Reduction Act of 2022 (“IRA”)<sup>189</sup> extends, modifies, and introduces several alternative energy credits that include a series of domestic content bonus credits under section 45, 45Y, 48, and 48E; the advanced manufacturing production credit for the sale of certain domestically produced energy components under section 45X; and a credit for investment in certain domestic clean energy and energy efficient manufacturing projects under section 48C. The following discussion describes these credits.

### 1. Domestic content bonus

#### **In general**

Domestic content bonus credits are available to increase credits provided under section 45 (production tax credit), 45Y (clean electricity production tax credit), 48 (investment tax credit), and 48E (clean electricity investment tax credit).

#### Section 45 production tax credit

The section 45 production tax credit increases by ten percent<sup>190</sup> for facilities that meet certain domestic content requirements.<sup>191</sup> To meet these requirements, a taxpayer must certify to the Secretary that any steel, iron, or manufactured product which is a component of a qualified facility (upon completion of construction) is produced in the United States.<sup>192</sup> For purposes of steel and iron, this requirement is applied consistent with the Federal Transit Administration’s Buy America requirements.<sup>193</sup> Manufactured products which are components of a qualified facilities are deemed to have been produced in the United States if not less than 40 percent (20 percent in the case of offshore wind facilities) of the total costs of all manufactured products of such facility are attributable to manufactured products (including components) which are mined, produced, or manufactured in the United States.<sup>194</sup>

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<sup>189</sup> Pub. L. No. 117-169, August 16, 2022.

<sup>190</sup> Calculated without regard to the application of the energy community bonus. Sec. 45(b)(11)(A).

<sup>191</sup> Sec. 45(b)(9)(A). Certain taxpayers may elect to have the credit paid directly to the extent there is insufficient income tax liability to absorb the credit. Sec. 6417. Taxpayers that make this election and do not satisfy the domestic content requirements must reduce the amount of this direct payment by ten percent. This rule applies only to facilities having a maximum net output of at least one megawatt (as measured in alternating current) whose construction begins after December 31, 2023. The Secretary may provide an exception in certain circumstances. Sec. 45(b)(10).

<sup>192</sup> Sec. 45(b)(9)(B)(i).

<sup>193</sup> Sec. 45(b)(9)(B)(ii); 49 U.S.C. sec. 661.5.

<sup>194</sup> Sec. 45(b)(9)(B)(iii) and (C).

### Section 45Y clean electricity production credit

Similar to the production tax credit, the clean electricity production credit increases ten percent for facilities that meet certain domestic content requirements.<sup>195</sup> The domestic content requirements are generally the same as those set forth in section 45(b)(9) for the production tax credit, except that the percentage of content that must be domestically produced with respect to manufactured products is different. For the clean electricity production credit, except with respect to offshore wind facilities, percentage is:

- 40 percent for a facility the construction of which begins before January 1, 2025;
- 45 percent for a facility the construction of which begins in calendar year 2025;
- 50 percent for a facility the construction of which begins in calendar year 2026; and
- 55 percent for a facility the construction of which begins after December 31, 2026.<sup>196</sup>

For offshore wind facilities, the percentage is:

- 20 percent for a facility the construction of which begins before January 1, 2025;
- 27.5 percent for a facility the construction of which begins in calendar year 2025;
- 35 percent for a facility the construction of which begins in calendar year 2026;
- 45 percent for a facility the construction of which begins in calendar year 2027; and
- 55 percent for a facility the construction of which begins after December 31, 2027.<sup>197</sup>

### Section 48 investment tax credit

Where certain domestic content requirements similar to those for the production tax credit in section 45(b)(9)<sup>198</sup> are satisfied, the domestic content bonus increases the investment tax credit rate by two percentage points (ten percentage points contingent on satisfying certain

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<sup>195</sup> Sec. 45Y(g)(11). The provision contains a special rule reducing the amount of a direct payment under Section 6417 by ten percent if the domestic content requirements are not satisfied. This rule is similar to those provided in section 45(b)(10), except that the payment is reduced by ten percent if construction of the facility begins in calendar year 2024, by 15 percent if construction the facility begins in calendar year 2025, and by 100 percent if the construction of the facility begins after December 31, 2025. Sec. 45Y(g)(12).

<sup>196</sup> Sec. 45Y(g)(11)(C)(i).

<sup>197</sup> Sec. 45Y(g)(11)(C)(ii).

<sup>198</sup> Sec. 48(a)(12)(B).



wage and apprenticeship requirements).<sup>199</sup> The two or ten percent increase in investment tax credit rate can increase the overall investment tax credit by as much as 33 percent (unlike the production tax credit and clean electricity production credits whose increase is capped at ten percent).<sup>200</sup>

### Section 48E clean electricity investment tax credit

The domestic content bonus is also available for qualified investment that meets certain domestic content requirements similar to those used in section 48, but applying the adjusted percentage set forth in section 45Y(g)(11)(C).<sup>201</sup> Similar to the investment tax credit, the domestic content bonus for the clean electricity investment tax credit is equal to a two percentage point increase (ten percentage point increase where certain wage and apprenticeship requirements are met) to the credit rate.

### **In general**

The advanced manufacturing production credit provides a credit for eligible components, including certain applicable critical minerals, that a taxpayer produces and sells to an unrelated person during the taxable year.<sup>202</sup> Eligible components include:

1. any solar energy component (*i.e.*, solar modules, photovoltaic cells, photovoltaic wafers, solar grade polysilicon, torque tubes or structural fasteners, and polymeric backsheets);<sup>203</sup>
2. any wind energy component (*i.e.*, blades, nacelles, towers, offshore wind foundations, and related offshore wind vessels);<sup>204</sup>

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<sup>199</sup> Sec. 48(a)(12)(C). The provision contains a special rule reducing the amount of a direct payment under Section 6417 by ten percent if the domestic content requirements are not satisfied. This rule is similar to those provided in section 45(b)(10). Sec. 48(a)(13).

<sup>200</sup> For example, assume that a taxpayer (1) places in service energy property that qualifies for the six percent base energy percentage in section 48(a)(2)(A)(i), (2) satisfies the wage and apprenticeship requirements, and (3) satisfies the domestic content bonus requirements. The taxpayer's energy percentage is increased from 30 percent to 40 percent (a 33 percent increase), after application of the wage and apprenticeship requirements.

<sup>201</sup> Sec. 48(a)(3)(B). A technical correction may be necessary to reflect this intent. In the case of a taxpayer making an election under section 6417 with respect to a credit under this section, rules similar to the rules of section 45Y(g)(12) apply.

<sup>202</sup> Sec. 45X(a)(1).

<sup>203</sup> Sec. 45X(c)(1)(A)(i) and (c)(3).

<sup>204</sup> Sec. 45X(c)(1)(A)(ii) and (c)(4).

3. certain inverters (*i.e.*, central, commercial, distributed wind, microinverter, residential, and utility);<sup>205</sup>
4. any qualifying battery component (electrode active materials, battery cells, and battery modules);<sup>206</sup> and
5. any applicable critical mineral.<sup>207</sup>

The production and sale of eligible components must be in the trade or business of the taxpayer.<sup>208</sup>

An eligible component that is integrated, incorporated, or assembled into another eligible component which is then sold to an unrelated person is treated as having been sold to an unrelated person for purposes of this credit.<sup>209</sup>

A taxpayer can sell components to a related person and still qualify for the credit if the related person sells those components to an unrelated person or the taxpayer makes an election and meets certain requirements the Secretary deems necessary to prevent duplication, fraud, or any improper or excessive amount of credit.<sup>210</sup> Likewise, a vertically integrated manufacturer that produces eligible components and integrates, incorporates, or assembles them as part of a product that is sold to an unrelated person may qualify for the credit.

### **Credit amounts**

The credit amount for certain eligible components is reflected in the table below.

<b>Eligible Component</b>	<b>Credit Amount<sup>211</sup></b>
Thin film photovoltaic cell or crystalline photovoltaic cell	4 cents times the capacity of the cell (per direct current watt basis)

<sup>205</sup> Sec. 45X(c)(1)(A)(iii) and (c)(2).

<sup>206</sup> Sec. 45X(c)(1)(A)(iv) and (c)(5).

<sup>207</sup> Sec. 45X(c)(1)(A)(v) and (c)(6). Any property produced by a facility that has received a credit under section 48C after the date of enactment (August 16, 2022) is not an eligible component. Sec. 45X(c)(1)(B). Any property produced by a facility that is co-located with a facility that has received a credit under section 48C may be an eligible component if such facilities are separable.

<sup>208</sup> Sec. 45X(a)(2).

<sup>209</sup> Sec. 45X(d)(4).

<sup>210</sup> Sec. 45X(a)(3).

<sup>211</sup> Sec. 45X(b)(1).

<b>Eligible Component</b>	<b>Credit Amount<sup>211</sup></b>
Photovoltaic wafer	\$12 per square meter
Solar grade polysilicon	\$3 per kilogram
Polymeric backsheet	40 cents per square meter
Solar module	7 cents times the capacity of the module (per direct current watt basis)
Torque tube	87 cents per kilogram
Structural fastener	\$2.28 per kilogram
Central inverter	0.25 cents times the capacity of the inverter (per alternating current watt basis)
Utility inverter	1.5 cents times the capacity of the inverter (per alternating current watt basis)
Commercial inverter	2 cents times the capacity of the inverter (per alternating current watt basis)
Residential inverter	6.5 cents times the capacity of the inverter (per alternating current watt basis)
Microinverter or distributed wind inverter	11 cents times the capacity of the inverter (per alternating current watt basis)

The credit for a related offshore wind vessel is ten percent of the sales price of the vessel.<sup>212</sup> The table below presents the rates for other wind energy components. For this

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<sup>212</sup> Sec. 45X(b)(1)(F)(i).

purpose, total rated capacity relates to the completed wind turbine for which the component is designed.<sup>213</sup>

<b>Wind Energy Component</b>	<b>Credit Amount<sup>214</sup></b>
Blade	2 cents times the total rated capacity (per watt basis)
Nacelle	5 cents times the total rated capacity (per watt basis)
Tower	3 cents times the total rated capacity (per watt basis)
Offshore wind foundation using a fixed platform	2 cents times the total rated capacity (per watt basis)
Offshore wind foundation using a floating platform	4 cents times the total rated capacity (per watt basis)

The credit for electrode active minerals and applicable critical minerals is ten percent of the costs incurred by the taxpayer with respect to production of the minerals.<sup>215</sup>

The credit for a battery cell is \$35 times the capacity of the cell (kilowatt-hour basis). The credit for a battery module is \$10 (\$45 if the battery module does not use battery cells) times the capacity of the battery module (kilowatt-hour basis).<sup>216</sup> For both battery cells and modules, the capacity considered for the credit cannot exceed a ratio of such capacity to maximum discharge of 100 to 1.<sup>217</sup>

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<sup>213</sup> Sec. 45X(b)(1)(F)(ii)(II).

<sup>214</sup> Sec. 45X(b)(1)(F)(ii) and (b)(2)(A).

<sup>215</sup> Sec. 45X(b)(1)(J) and (M).

<sup>216</sup> Sec. 45X(b)(1)(K) and (L).

<sup>217</sup> Sec. 45X(b)(4).

**Applicable critical minerals**

Generally, applicable critical minerals are certain minerals converted to other forms or purified to a certain minimum purity by mass.<sup>218</sup> These minerals are listed in the table below.

<b>List of Applicable Critical Minerals</b>				
Aluminum	Antimony	Barite	Beryllium	Cerium
Cesium	Chromium	Cobalt	Dysprosium	Europium
Fluorspar	Gadolinium	Germanium	Graphite	Indium
Lithium	Manganese	Neodymium	Nickel	Niobium
Tellurium	Tin	Tungsten	Vanadium	Yttrium
Arsenic	Bismuth	Erbium	Gallium	Hafnium
Holmium	Iridium	Lanthanum	Lutetium	Magnesium
Palladium	Platinum	Praseodymium	Rhodium	Rubidium
Ruthenium	Samarium	Scandium	Tantalum	Terbium
Thulium	Titanium	Ytterbium	Zinc	Zirconium

**Credit phaseout**

The credit begins to phase out in 2030.<sup>219</sup> For eligible components sold during calendar years 2030, 2031, and 2032, the otherwise allowable amount of credit is reduced by 25 percent,

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<sup>218</sup> Sec. 45X(c)(6).

<sup>219</sup> Sec. 45X(b)(3).

50 percent, and 75 percent, respectively. This phasedown does not apply to applicable critical minerals.<sup>220</sup>

The credit is fully phased out for all eligible components after 2032; that is, no credit is allowed for any eligible component after December 31, 2032.<sup>221</sup>

### **Special rules**

The credit only applies to sales where the eligible components are produced within the United States or U.S. territories.<sup>222</sup> This requirement is not intended to apply to subcomponents or materials used to produce eligible components.

Rules for common control and estates and trusts similar to those of sections 52(b) and (d) apply.<sup>223</sup>

## **2. Credit for investment in advanced energy property used in certain manufacturing projects**

### **In general**

A taxpayer is allowed to apply for a base credit amount of six percent or a bonus credit amount of 30 percent of its qualified investment in property that is part of a qualifying advanced energy project certified by the Secretary.<sup>224</sup> The Secretary allocates the credit to applicants whose investment meets certain criteria.<sup>225</sup> The total allocable amount of credits is limited to \$10 billion.<sup>226</sup>

### **Qualified investment**

A qualified investment equals the basis of eligible property placed in service by the taxpayer that is part of a qualifying advanced energy project.<sup>227</sup> Eligible property is depreciable (or amortizable) tangible personal property and certain other tangible property (not including a

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<sup>220</sup> Sec. 45X(b)(3)(C).

<sup>221</sup> A technical correction may be necessary to reflect this intent.

<sup>222</sup> Sec. 45X(d)(2).

<sup>223</sup> Sec. 45X(d)(1) and (3).

<sup>224</sup> Sec. 48C(a) and (e)(4).

<sup>225</sup> Sec. 48C(e)(3).

<sup>226</sup> Sec. 48(e)(2). No more than \$6 billion may be allocated to projects that are not located in certain census tracts.

<sup>227</sup> Sec. 48C(b)(1).

building or its structural components)<sup>228</sup> used in a qualified advanced energy project.<sup>229</sup> Eligible property excludes property used outside the United States, for lodging, by certain tax-exempt organizations, or by governments or foreign persons.<sup>230</sup> The basis of qualified property must be reduced by the amount of credit.<sup>231</sup>

#### Qualified advanced energy project

A qualifying advanced energy project is a project, certified by the Secretary,

1. that re-equips, expands, or establishes an industrial or manufacturing facility for the production or recycling of:
  - a. property designed to be used to produce energy from the sun, water, geothermal deposits, or other renewable resources,
  - b. fuel cells, microturbines, or energy storage systems and components,
  - c. electric grid modernization equipment or components,
  - d. property designed to remove, use, or sequester carbon oxide emissions,
  - e. equipment designed to refine, electrolyze, or blend any fuel, chemical, or product which is renewable or low-carbon and low-emission,
  - f. property designed to produce energy conservation technologies (including for residential, commercial, and industrial applications),
  - g. electric or fuel cell vehicles, technologies, components, or materials for such vehicles, and associated charging or refueling infrastructure,
  - h. hybrid vehicles with a gross vehicle weight rating of not less than 14,000 pounds as well as technologies, components, or materials for such vehicles, or
  - i. other advanced energy property designed to reduce greenhouse gas emissions as may be determined by the Secretary,<sup>232</sup>
2. that re-equips an industrial or manufacturing facility with equipment designed to reduce greenhouse gas emissions by at least 20 percent by installing:

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<sup>228</sup> Only if such other tangible property is used as an integral part of the qualified investment credit facility.

<sup>229</sup> Sec. 48C(c)(2).

<sup>230</sup> Sec. 50(b).

<sup>231</sup> Sec. 50(c)(1).

<sup>232</sup> Sec. 48C(c)(1)(A)(i).

- a. low- or zero-carbon process heat systems,
  - b. carbon capture, transport, utilization, and storage systems,
  - c. energy efficiency and reduction in waste from industrial processes, or
  - d. any other industrial technology designed to reduce greenhouse gas emissions as determined by the Secretary;<sup>233</sup>
3. that re-equips, expands, or establishes an industrial facility for the processing, refining, or recycling of critical materials.<sup>234</sup>

A qualifying advanced energy project excludes any portion of a project that produces property used in refining or blending of transportation fuel (other than renewable fuel).<sup>235</sup>

### **Certification**

Credits are available only for projects certified by the Secretary, who must establish a certification program no later than 180 days after August 14, 2022.<sup>236</sup> The provision provides an allocation of \$10 billion in credits, of which not more than \$6 billion may be allocated to projects that are not in a census tract that is (1) an energy community (as described in section 45(b)(11)(B)(iii)) and (2) had no projects that received a certification or allocation of credits under section 48C(d) prior to August, 16, 2022.<sup>237</sup> No credit is allowed for any qualified investment that is allowed a credit under sections 45Q, 45V, 48, 48A, 48B, or 48E.<sup>238</sup>

Each project application must be submitted according to the timeline established by the Secretary.<sup>239</sup> An applicant for certification has two years from the date the Secretary accepts the

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<sup>233</sup> Sec. 48C(c)(1)(A)(ii).

<sup>234</sup> Sec. 48C(c)(1)(A)(iii) and 30 U.S.C. sec. 1606(a). Critical mineral means any mineral, element, substance, or material designated as critical under 30 U.S.C. sec. 1606(c), but does not include fuel minerals, water, ice, snow, or common varieties of sand, gravel, stone, pumice, cinders, and clay.

<sup>235</sup> Sec. 48C(c)(1)(B).

<sup>236</sup> Sec. 48C(e)(1). The IRS provided initial qualifying advanced energy project program guidance in Notice 2023-18, 2023-10 I.R.B. 508, March 6, 2023, and Notice 2023-44, 2023-25 I.R.B. 924, May 31, 2023. The guidance describes the process to apply for an allocation of the credit, including provisions regarding the certification and allocation of the credit.

<sup>237</sup> Sec. 48C(e)(2).

<sup>238</sup> Sec. 48C(f).

<sup>239</sup> Sec. 48C(e)(3)(A). The IRS anticipates providing at least two allocation rounds under the qualifying advanced energy project credit allocation program, with the first allocation round (Round 1) beginning on May 31, 2023. During the first allocation round (Round 1) of the program, the IRS anticipates allocating \$4 billion of qualifying advanced energy project credits, approximately \$1.6 billion of which will be allocated to projects located



application to provide the Secretary with evidence that the requirements for certification have been met.<sup>240</sup> Upon certification, the applicant has two years from the date of issuance of the certification to place the project in service.<sup>241</sup> An applicant's certification is invalid if the project is not placed in service in the required time period or if the Secretary determines the project has been placed in a location materially different than the location specified in the application for such project.<sup>242</sup> For each certification, the Secretary must publicly disclose the credit amount allocated to and the identity of each applicant.<sup>243</sup>

### **Credit rate and wage and apprenticeship requirements**

The base credit rate is six percent for investment in qualified property used in a qualifying advanced energy project.<sup>244</sup> The credit rate is increased to 30 percent if certain prevailing wage and apprenticeship requirements are met.<sup>245</sup>

The prevailing wage requirements require the taxpayer to ensure that any laborers and mechanics it employs or any contractors or subcontractors it uses to reequip, expand, or establish of a manufacturing facility are paid wages at a rate not less than the prevailing wage rates for construction, alteration, or repair of a similar character in the locality where the project is located.<sup>246</sup> Correction and penalty procedures for failure to satisfy wage requirements apply.<sup>247</sup>

The apprenticeship requirements require that generally not less than a certain percentage of total labor hours of the construction, alteration, or repair work (including work performed by any contractor or subcontractor) on the construction of a project must be performed by qualified apprentices.<sup>248</sup>

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in certain energy communities. For a timeline detailing the program's application, certification, and allocation process, see IRS Fact Sheet FS-2023-16, June 2023.

<sup>240</sup> Sec. 48C(e)(3)(B).

<sup>241</sup> Sec. 48C(e)(3)(C).

<sup>242</sup> Sec. 48C(e)(3)(D).

<sup>243</sup> Sec. 48C(e)(7).

<sup>244</sup> Sec. 48C(e)(4)(A).

<sup>245</sup> Sec. 48C(e)(4)(B).

<sup>246</sup> Sec. 48C(e)(5)(A). As determined by the Secretary of Labor in accordance with 40 U.S.C. secs. 3141 to 3148.

<sup>247</sup> Sec. 48C(e)(5)(B) and 45(b)(7)(B).

<sup>248</sup> Sec. 48C(e)(6) and 45(b)(8).

## E. Advanced Manufacturing Investment Credit

Congress passed the CHIPS Act of 2022<sup>249</sup> to establish the advanced manufacturing investment credit.<sup>250</sup> Eligible taxpayers may claim a 25 percent investment credit for qualified investments in an advanced manufacturing facility<sup>251</sup> for which the primary purpose is the manufacture of semiconductors or semiconductor manufacturing equipment.<sup>252</sup>

A qualified investment is the basis of any qualified property placed in service by the taxpayer which is part of an advanced manufacturing facility.<sup>253</sup> Qualified property is tangible, depreciable (or amortizable) property that is constructed, reconstructed, or erected by the taxpayer, or acquired for original use by the taxpayer, that is integral to the operation of an advanced manufacturing facility.<sup>254</sup> Qualified property includes buildings and their structural components other than those buildings or portions of such used for offices, administrative services, or other functions unrelated to manufacturing.<sup>255</sup>

An eligible taxpayer is any taxpayer that is (1) not a foreign entity of concern<sup>256</sup> and (2) has not made an applicable transaction during the tax year.<sup>257</sup> An applicable transaction is any significant transaction<sup>258</sup> involving the material expansion of semiconductor manufacturing capacity of an applicable taxpayer in the People's Republic of China or a foreign country of

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<sup>249</sup> Pub. L. No. 117-167, August 9, 2022.

<sup>250</sup> Section 48D. The credit generally applies to qualified property placed in service after December 31, 2022. If construction of the property begins before January 1, 2023, the credit is limited to basis that is attributable to the construction, reconstruction, or erection of the property after August 9, 2022 (the date the credit was enacted). Sec. 107(f)(1) of Pub. L. No. 117-167. The credit does not apply to the construction of qualified property that begins after December 31, 2026. Sec. 48D(e).

<sup>251</sup> Section 48D(a).

<sup>252</sup> Section 48D(b)(3).

<sup>253</sup> Section 48D(b)(1).

<sup>254</sup> Section 48D(b)(2)(A).

<sup>255</sup> Section 48D(b)(2)(B).

<sup>256</sup> Section 9901(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283. This includes a foreign entity owned by, controlled by, or subject to the jurisdiction or direction of (1) the government of the People's Republic of China, the Democratic People's Republic of North Korea, the Russian Federation, and the Islamic Republic of Iran; (2) a designated foreign terrorist organization; (3) an entity included on the list of specially designated nationals and blocked persons maintained by Treasury's Office of Foreign Assets Control; or (4) that has been alleged by the U.S. attorney general to have engaged in activities in violation of certain provisions.

<sup>257</sup> Section 48D(c).

<sup>258</sup> As determined by the Secretary in coordination with the Secretary of Commerce and the Secretary of Defense.

concern.<sup>259</sup> An applicable transaction excludes any transaction which primarily involves the expansion of manufacturing capacity for legacy semiconductors (*i.e.*, 28-nanometers or older-generation semiconductors).<sup>260</sup> An applicable taxpayer is any taxpayer who has been allowed a credit under the provision for any prior taxable year.<sup>261</sup> Credits allowed to applicable taxpayers with respect to applicable transactions are subject to recapture during the 10-year period from the date the qualified property has been placed in service.<sup>262</sup> Credits will not be recaptured if the applicable taxpayer demonstrates to the satisfaction of the Secretary that the applicable transaction has been created or abandoned within 45 days of a determination and notice by the Secretary.<sup>263</sup>

The credit is part of the general business credit. The progress expenditure rules and the rules in section 50 apply to the provision.<sup>264</sup> The credit calculation does not include the basis of any property which is attributable to qualified rehabilitation expenditures.<sup>265</sup>

### **Elective payment**

Taxpayers can elect a direct payment in lieu of the advanced manufacturing credit.<sup>266</sup> For taxpayers other than partnerships and S corporations, the direct payment is generally treated as a payment against tax. If the credit amount exceeds the tax liability, the excess amount can be refunded to the taxpayer.

Partnerships and S corporations make the direct pay election and receive payments (as opposed to the partners and shareholders).<sup>267</sup> The payment constitutes tax exempt income under sections 705 (the determination of a partner's basis in the partnership interest) and 1366 (the passthrough of items to an S corporation shareholder).<sup>268</sup> A partner's distributive share of the

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<sup>259</sup> Sec. 50(a)(6)(D)(i); Sec. 9901(7) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283. This includes the Democratic People's Republic of North Korea, the Russian Federation, and the Islamic Republic of Iran.

<sup>260</sup> Sec. 50(a)(6)(D)(ii); Sec. 9902(a)(6) of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Pub. L. No. 116-283.

<sup>261</sup> Sec. 50(a)(6)(E).

<sup>262</sup> Sec. 50(a)(3)(A).

<sup>263</sup> Sec. 50(a)(3)(B).

<sup>264</sup> Sec. 48D(b)(5).

<sup>265</sup> Secs. 48D(b)(4) and 47(c)(2).

<sup>266</sup> Sec. 48D(d)(1).

<sup>267</sup> Sec. 48D(d)(2)(A)(i).

<sup>268</sup> Sec. 48D(d)(2)(A)(i)(III).

payment is based on their distributive share of the credit.<sup>269</sup> The partnership or S corporation directly holding any qualified property must make the election.<sup>270</sup>

A direct payment election is irrevocable and must be made no later than the due date (including extensions of time) for the tax return for the taxable year for which the election is made, but in no event earlier than 270 days after the date of enactment of the provision.<sup>271</sup> A direct payment is treated as made on the later of the due date (determined without regard to extensions) of the tax return for the taxable year or the date on which such return is filed.<sup>272</sup>

As a condition of and prior to any direct payment, the Secretary may require such information or registration as the Secretary deems necessary or appropriate to prevent duplication, fraud, improper payments, or excessive payments under the provision. If the Secretary determines that a payment made to a taxpayer was an excessive payment (*i.e.*, more than the amount otherwise allowable as a credit for the taxable year) that did not result from reasonable cause, the taxpayer's income tax for the taxable year for which such determination is made will be increased by the amount of the excessive payment plus 20 percent of such amount.<sup>273</sup>

Rules similar to the basis reduction and recapture rules of section 50 apply to any amount treated as a direct payment.<sup>274</sup> Direct payments under the provision are exempt from being reduced (sequestered) under the Balanced Budget and Emergency Deficit Control Act of 1985.<sup>275</sup>

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<sup>269</sup> Sec. 48D(d)(2)(A)(i)(IV).

<sup>270</sup> Sec. 48D(d)(2)(A)(ii).

<sup>271</sup> Sec. 48D(d)(2)(B). The direct pay election cannot be made earlier than May 8, 2023.

<sup>272</sup> Sec. 48D(d)(2)(C).

<sup>273</sup> Sec. 48D(d)(2)(F).

<sup>274</sup> Sec. 48D(d)(5),

<sup>275</sup> Sec. 107(f)(2) of Pub. L. No. 117-167.

## F. Deduction for Qualified Business Income

### In general

For taxable years beginning after December 31, 2017, and before January 1, 2026, certain individuals, trusts, and estates may deduct 20 percent of qualified business income from a partnership, S corporation, or sole proprietorship, as well as 20 percent of aggregate qualified real estate investment trust (“REIT”) dividends and qualified publicly traded partnership income.<sup>276</sup> Special rules apply to determine the deduction attributable to domestic production activities of specified agricultural or horticultural cooperatives.<sup>277</sup>

The qualified business income deduction is subject to several limitations. The deduction may not exceed 20 percent of taxable income (reduced by net capital gain).<sup>278</sup> Limitations based on W-2 wages and capital investment phase in over a range of income above threshold amount of taxable income.<sup>279</sup> A disallowance of the deduction for income of specified service trades or businesses<sup>280</sup> also phases in over a range of income above the threshold amount of taxable income. Both the W-2 and capital investment and specified service trade or business limits are subject to the threshold amounts and phase-in ranges below for 2024.<sup>281</sup>

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<sup>276</sup> Sec. 199A(b)(2) and (b)(1)(B). See also Treas. Reg. secs. 1.199A-1 through 1.199A-7.

<sup>277</sup> For taxable years beginning after December 31, 2017, and before January 1, 2026, a specified agricultural or horticultural cooperative generally may deduct nine percent of the lesser of the cooperative’s qualified production activities income or taxable income (determined without regard to the cooperative’s section 199A(g) deduction and reduced by certain payments or allocations to patrons) for the taxable year. The deduction is limited to 50 percent of W-2 wages that are paid by the cooperative during the calendar year that ends in such taxable year and are properly allocable to domestic production gross receipts. Sec. 199A(g). See also Treas. Reg. secs. 1.199A-8 through 1.199A-12.

<sup>278</sup> Sec. 199A(a)(2). For this purpose, taxable income is computed without regard to the deduction allowable under the provision. Sec. 199A(e)(1).

<sup>279</sup> For a taxpayer with taxable income above the threshold, the taxpayer is allowed a deductible amount for each qualified trade or business equal to the lesser of (1) 20 percent of the qualified business income with respect to such trade or business, or (2) the greater of (a) 50 percent of the W-2 wages paid with respect to the qualified trade or business, or (b) the sum of 25 percent of the W-2 wages paid with respect to the qualified trade or business plus 2.5 percent of the unadjusted basis immediately after acquisition of all qualified property of the qualified trade or business. Sec. 199A(b)(2).

<sup>280</sup> A specified service trade or business means any trade or business involving the performance of services in the fields of health, law, accounting, actuarial science, performing arts, consulting, athletics, financial services, brokerage services, or any trade or business where the principal asset of such trade or business is the reputation or skill of one or more of its employees or owners, or which involves the performance of services that consist of investing and investment management, trading, or dealing in securities, partnership interests, or commodities. Sec. 199A(d)(2).

<sup>281</sup> Sec. 199A(b)(3) and (d)(3).

<b>Filing Status</b>	<b>2024 Threshold Amount<sup>282</sup></b>	<b>2024 Phase-in Range Amount</b>
Married filing jointly	\$383,900	\$483,900
Married filing separately	\$191,950	\$241,950
Other returns	\$191,950	\$241,950

The taxpayer’s deduction for qualified business income is not allowed in computing adjusted gross income; instead, the deduction is allowed in computing taxable income.<sup>283</sup> The deduction is available to individuals regardless of whether they itemize their deductions.<sup>284</sup>

**Qualified business income**

In general

Qualified business income is determined for each qualified trade or business of the taxpayer. For any taxable year, qualified business income is the net amount of qualified items of income, gain, deduction, and loss attributable to the qualified trade or business of the taxpayer.<sup>285</sup> A taxpayer includes qualified items of income, gain, deduction, and loss only to the extent those items are included or allowed to determine taxable income for the taxable year.<sup>286</sup> Items are treated as qualified items of income, gain, deduction, and loss only to the extent they are effectively connected with the conduct of a trade or business within the United States.<sup>287</sup>

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<sup>282</sup> Sec. 3.27 of Rev. Proc. 2023-34, 2023-48 I.R.B. 1287, November 27, 2023. The threshold amount is adjusted for inflation in taxable years beginning after 2018. Sec. 199A(e)(2).

<sup>283</sup> Sec. 62(a).

<sup>284</sup> Sec. 63(b) and (d).

<sup>285</sup> Qualified business income excludes qualified REIT dividends and qualified publicly traded partnership income. Sec. 199A(c)(1).

<sup>286</sup> Sec. 199A(c)(3)(A)(ii).

<sup>287</sup> For this purpose, section 864(c) is applied by substituting “qualified trade or business (within the meaning of section 199A)” for “nonresident alien individual or a foreign corporation” or for “a foreign corporation,” each place they appear. Sec. 199A(c)(3)(A). In the case of an individual with qualified business income from sources within the Commonwealth of Puerto Rico, if all such income for the taxable year is taxable under section 1 (income tax rates for individuals), then the term “United States” is considered to include Puerto Rico for purposes of determining the individual’s qualified business income. Sec. 199A(f)(1)(C).

Qualified items of income, gain, deduction, and loss exclude:

1. any item taken into account in determining net capital gain or net capital loss,
2. dividends, income equivalent to a dividend, or payments in lieu of dividends,
3. interest income other than that which is properly allocable to a trade or business,
4. the excess of gain over loss from certain commodities transactions,<sup>288</sup>
5. the excess of foreign currency gains over foreign currency losses from section 988 transactions other than transactions directly related to the business needs of the business activity,
6. net income from notional principal contracts other than clearly identified hedging transactions that are treated as ordinary (i.e., not treated as capital assets),
7. any amount received from an annuity that is not received in connection with the trade or business, and
8. any item of deduction or loss properly allocable to any of the preceding items.<sup>289</sup>

Qualified business income also does not include any amount paid by an S corporation that is treated as reasonable compensation of the taxpayer.<sup>290</sup> Similarly, qualified business income does not include any guaranteed payment for services rendered with respect to the trade or business,<sup>291</sup> and, to the extent provided in regulations, does not include any amount paid or incurred by a partnership to a partner, acting other than in his or her capacity as a partner, for services.<sup>292</sup>

If the net amount of qualified business income from all qualified trades or businesses during the taxable year is a loss, then such loss is carried forward and in the next taxable year is treated as a loss from a qualified trade or business.<sup>293</sup> Any deduction that would otherwise be

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<sup>288</sup> The exclusion does not apply to commodities transactions entered into in the normal course of the trade or business or with respect to stock in trade or property held primarily for sale to customers in the ordinary course of the trade or business, property used in the trade or business, or supplies regularly used or consumed in the trade or business.

<sup>289</sup> Sec. 199A(c)(3)(B).

<sup>290</sup> Sec. 199A(c)(4).

<sup>291</sup> Described in sec. 707(c).

<sup>292</sup> Described in sec. 707(a).

<sup>293</sup> Sec. 199A(c)(2).

allowed in a subsequent taxable year with respect to the taxpayer's qualified trades or businesses is reduced by 20 percent of any carryover qualified business loss.

#### Qualified trade or business

A qualified trade or business means any trade or business other than a specified service trade or business and other than the trade or business of performing services as an employee.<sup>294</sup>

#### Partnerships and S corporations

In the case of a partnership or S corporation, the section 199A deduction is determined at the partner or shareholder level.<sup>295</sup> Each partner in a partnership takes into account the partner's allocable share of each qualified item of income, gain, deduction, and loss, and for purposes of the limitation described above, is treated as having W-2 wages and unadjusted basis of qualified property for the taxable year equal to the partner's allocable share of W-2 wages and unadjusted basis of qualified property of the partnership. The partner's allocable share of W-2 wages and unadjusted basis of qualified property are determined in the same manner as the partner's allocable share of wage expenses and depreciation, respectively. Similarly, each shareholder of an S corporation takes into account the shareholder's pro rata share of each qualified item of income, gain, deduction, and loss of the S corporation, and is treated as having W-2 wages and unadjusted basis of qualified property for the taxable year equal to the shareholder's pro rata share of W-2 wages and unadjusted basis of qualified property of the S corporation.

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<sup>294</sup> Sec. 199A(d)(1).

<sup>295</sup> Sec. 199A(f)(1).



## II. ECONOMIC ANALYSIS

### A. User Cost of Capital and Effective Marginal Tax Rates

#### In general

A tax system is considered efficient if it does not distort the choices that would be made in the absence of the tax system. Generally, no tax system will be fully efficient as individuals and business entities alter their behavior in response to taxation. Thus, a tax system puts a “wedge” between the full economic return from an activity and the return that is available to the individual or entity after tax is imposed. Such a tax wedge generally leads to a reduction in the amount of the taxed activity. One goal of a tax system is to minimize these inefficiencies, which must be balanced against satisfying other goals for a tax system, such as raising a desired level of revenue, achieving an equitable distribution of taxes, and creating a tax system that is reasonably administrable.

Economists focus on the effective marginal tax rate to determine the effect of taxes at the margin of behavior. By “marginal,” economists mean an incremental unit of a given activity. In the capital income context, that margin of behavior is the decision whether to invest in an incremental unit of capital of the business, and the effective marginal tax rate on that investment is the lifetime tax owed on that investment expressed as a share of the economic (before-tax) returns to that investment. While the statutory corporate tax rate is an important element in determining effective marginal tax rates on capital invested in the corporate sector, many other factors come in to play as well, including discrepancies between true economic depreciation of the asset and depreciation deductions that are allowed by statute for that class of asset, tax credits or other special rules that may apply to the investment, and whether the asset is financed by debt or equity.

The corporate income tax is a separate entity-level tax on income earned from capital invested in the corporate sector. As such, it is but one component of taxes on capital income, as capital may be deployed in other organizational forms, such as partnerships, S corporations, or sole proprietorships, which do not face a separate entity level tax. The existence of a separate tax on asset income earned in corporate form is itself a distortion in the efficient allocation of capital, as it creates a disincentive to organize as a corporation.

The individual income tax also affects the returns to capital income. In addition to the marginal tax rate on capital income at the corporate level, the effective marginal tax rate on an incremental unit of investment must reflect the marginal tax rate on returns at the individual level. In the case of an individual supplying savings, the marginal unit of supply is an additional dollar of capital above what the individual is currently saving. While such an individual may face an average tax rate on income that is low, due to the standard deduction, special rates on dividend or capital gain income, low initial rates on taxable income, and other factors, his or her marginal rate of tax on investment—the tax on the marginal unit of savings supplied—could be substantially higher due to the progressive structure of the statutory individual tax rate schedule. Furthermore, the individual’s effective marginal tax rate on an additional unit of capital supplied

could be different from the statutory marginal rate due to opportunities to shelter some of the income from tax through, for example, retirement plan arrangements.

Economists emphasize the effective marginal tax rates because it is these rates that determine the incentives (or disincentives) for taxpayers to work, to save and invest, or to take advantage of various tax preferences. These incentives could distort taxpayer choices away from those made in the absence of government intervention. A less efficient allocation of labor and capital resources leaves society with lower output of goods and services than it would otherwise have. For this reason, economists believe that increasing efficiency in an economy grows the economy.

The distorted choices that may result from increased effective marginal tax rates may change saving and investment. For example, taxation of income from capital may distort incentives to save by reducing the after-tax return to saving. Substantial disagreement exists among economists as to the effect on saving of changes in the after-tax return to saving. Empirical investigation of the responsiveness of personal saving to after-tax returns provides no conclusive results. If saving is reduced, capital available for investment is reduced. Investment in technology, equipment, and structures drives future productivity increases and growth in an economy. Increases in productivity increase wage rates, which provide incentives for increased labor supply and further saving. For this reason, tax policy affecting marginal tax rates on asset income can also have a significant effect on the economy's capacity for future growth.

### **User cost of capital**

A fundamental concept for analyzing the effects of capital taxation and for calculating effective marginal tax rates is the user cost of capital.<sup>296</sup> The user cost of capital is the opportunity cost that the firm (user) incurs because of owning a capital asset.<sup>297</sup> A firm will purchase an asset only if the value of the goods produced by the asset meets or exceeds the user cost. If the marginal return exceeds the user cost of capital, a firm can increase its profits by undertaking the investment. If the marginal return is less than the user cost, the firm decreases profits by undertaking the investment. Firms invest up to the point where the marginal return to capital assets just equals the user cost of capital. Thus, the user cost of capital is the return that equates the discounted present value of the investment's expected cash flow with the investment's cost, *i.e.*, it is the real before-tax internal rate of return on a marginally profitable investment.<sup>298</sup> If a firm can choose between production technologies, for example between one that is labor-intensive and another that is capital-intensive, then a key variable for the firm to consider in its choice of production technology is the user cost of capital. If the user cost of capital is relatively high, the firm may choose a less capital-intensive technology and vice versa.

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<sup>296</sup> The classic exposition of this concept is found in Robert Hall and Dale W. Jorgenson, "Tax Policy and Investment Behavior," *American Economic Review*, 57, June 1967, pp. 391-414.

<sup>297</sup> Harvey Rosen, *Public Finance*. Homewood, Illinois: Richard D. Irwin, Inc., 1985, p. 436.

<sup>298</sup> James B. Mackie, III, "Unfinished Business of the 1986 Tax Reform Act: An Effective Tax Rate Analysis of Current Issues in the Taxation of Capital Income," *National Tax Journal*, 55, June 2002, pp. 293-337.

The user cost of capital may be represented by the following equation:

$$user\ cost = \frac{(1-\theta-\tau^*(x))}{(1-\tau)} * [(i - \pi) + \delta - (\alpha - \pi)],$$

where  $\theta$  is any investment tax credit,

$\tau$  is the statutory corporate tax rate,

$x$  is the present value of the tax depreciation deductions,

$i$  is the nominal corporate discount rate, reflecting the mix of debt and equity financing,

$\pi$  is the inflation rate,

$\delta$  is the present value of the economic depreciation, and

$\alpha$  is the appreciation or revaluation in the asset.

The equation illustrates how various factors affect the user cost of capital. Higher financing costs, represented by the nominal corporate discount rate, increase the cost of capital. The faster an asset wears out with age – that is, the higher the rate of economic depreciation--the higher is the user cost of capital. Higher inflation-adjusted appreciation or revaluation in the asset reduces the user cost of capital. Higher investment tax credits and more generous tax depreciation deductions also reduce the cost of capital. A higher tax rate increases the user cost of capital as the firm must give a greater portion of its return to the government. This demonstrates that there are tradeoffs in tax policy that affect the user cost of capital. For example, if to achieve a revenue neutral tax change, the corporate tax rate were reduced at the same time that tax depreciation were made less generous, these two changes would have offsetting effects on the user cost of capital. The net impact could increase, decrease, or have no net effect on the user cost of capital.

### Financing costs

The user cost of capital is the financial cost of capital—that is, the opportunity cost of funds—adjusted for expected inflation. Therefore, the user cost of capital depends on how the investment is financed, *i.e.*, with debt, equity, retained earnings, or some combination thereof. In other words, the financing cost, denoted by  $i$  in the equation, is the real before-tax rate of interest the firm must pay to acquire the asset if debt-financed, the real before-tax rate of return required by shareholders if the asset is equity-financed, the real before-tax cost of internal equity if the asset is financed with retained earnings, or some weighted average of the three.<sup>299</sup> Investment

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<sup>299</sup> Robert S. Chirinko, “Corporate Taxation, Capital Formation, and the Substitution Elasticity between Labor and Capital,” *National Tax Journal*, 55, June 2002, pp. 339-355. A more complete treatment would also include the tax treatment of the financiers. See Mackie, “Unfinished Business,” June 2002.

tax credits lower the user cost of capital by reducing the effective acquisition cost of a capital asset.

### Economic depreciation and tax depreciation

The user cost of capital also incorporates the rate of economic depreciation of the asset.<sup>300</sup> Economic depreciation reflects the rate at which a capital asset falls in value as it ages.<sup>301</sup> Firms must earn enough from capital investments to recover this economic depreciation; otherwise they would be better off investing in some other asset.

Greater tax depreciation allowances tend to lower the user cost of capital. Tax depreciation often differs from economic depreciation,<sup>302</sup> and since 1981 tax depreciation has generally been accelerated relative to economic depreciation.<sup>303</sup> To the extent that tax depreciation has a larger (smaller) present value than does economic depreciation—accelerated depreciation or in the extreme case, expensing—the user cost of capital may be lower (higher) than in the absence of the tax allowances. The tax law can promote an inefficient distribution of investment if it specifies tax depreciation rates that deviate from economic depreciation rates. Some have argued, for instance, that depreciation provisions are more favorable to investment in equipment than investment in structures, which could result in a bias in favor of investment in equipment.<sup>304</sup> In addition, tax rules can encourage more aggregate investment if tax depreciation rates, as a whole, are faster than economic depreciation rates.

### Measuring economic depreciation

While tax depreciation rates are defined by tax rules and are relatively straightforward to calculate, measuring economic depreciation rates, the change in market value of income-producing property, is more difficult. Although economists have attempted to estimate economic depreciation rates for particular investments, no consensus has emerged regarding a general representation of a depreciation method applicable across broad classes of assets.<sup>305</sup> One method based on early estimates of economic depreciation is the ADS.<sup>306</sup> ADS assigns each investment a recovery period reflecting its useful life and assumes that the investment depreciates in a straight-line pattern. The dollar amount of economic depreciation is assumed to be the same

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<sup>300</sup> The rate of economic depreciation is denoted by  $\delta$  in the user cost of capital equation.

<sup>301</sup> The definition of depreciation relevant to measurement of true economic income is economic depreciation, the true loss of economic value. Paul A. Samuelson, “Tax Deductibility of Economic Depreciation to Insure Invariant Valuations,” *Journal of Political Economy*, vol. 72, December 1964, pp. 604-606.

<sup>302</sup> Tax depreciation deductions are denoted by  $x$  in the user cost of capital equation.

<sup>303</sup> The legislative background of the tax depreciation rules is described in section II.A. of this document.

<sup>304</sup> Jane G. Gravelle, Congressional Research Service, *Depreciation and the Taxation of Real Estate* (Report RL3063), 2000.

<sup>305</sup> Jane G. Gravelle, “Whither Tax Depreciation,” *National Tax Journal*, September 2001, pp. 513-526.

<sup>306</sup> See sec. 168(g).

each year. For example, agricultural machinery is generally assumed to have a useful life, and recovery period, of 10 years under ADS.<sup>307</sup> However, some economists argue that assets do not depreciate by a constant dollar amount each year, but rather depreciate at a constant rate, that is, in a geometric pattern. Assets depreciate the most in the first year of their useful life and by declining amounts in subsequent years. Some economists have found that data suggest that a geometric pattern more closely matches the actual pattern of price declines for most asset types.

For example, one of the earliest and most prominent studies estimated that agricultural machinery depreciates at a 9.71-percent rate with a useful life of 17 years, which is longer than the ADS life.<sup>308</sup> The Bureau of Economic Analysis of the Department of Commerce (“BEA”) currently estimates an 11.79-percent rate of economic depreciation for agricultural machinery with a useful life of 14 years. In the case of agricultural machinery, the useful life under ADS may understate the economic useful life and therefore provide tax depreciation that is more generous than economic depreciation. A full comparison would need to adjust for the method of depreciation (straight line in ADS, geometric in BEA) as well as the useful life.

BEA introduced a new methodology for calculating economic depreciation for purposes of the National Income and Product Accounts (“NIPA”) in 1997 that relies on a constant rate of decay over estimated useful lives to compute rates of economic depreciation.<sup>309</sup> The purpose of these estimates is to measure the consumption of fixed capital for purposes of accurately measuring components of GDP. Instead of a small number of recovery periods for asset classes, as under the present income tax depreciation rules, several hundred types of assets are identified. Each of these types is assigned a depreciation rate equal to the appropriate declining balance rates divided by the service life. BEA bases its economic depreciation patterns on empirical evidence of used asset prices in resale markets for each asset type wherever possible. The BEA describes its methodology for estimating economic depreciation as follows:

BEA assumes most assets have depreciation patterns that decline geometrically over time. For any given year, the constant-dollar depreciation charge on an existing asset is obtained by multiplying the depreciation charge in the preceding year by one minus the annual depreciation rate.<sup>310</sup> BEA’s geometric depreciation rates are derived by dividing declining balance rates by service lives . . . Declining-balance rates are multiples of the comparable rate of depreciation that would be obtained for the first period of an asset’s life using the straight-line method. Thus, when the declining balance rate is equal to 2 (referred to as a “double-declining balance”), the rate of depreciation in the first period of

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<sup>307</sup> Sec. 168(g)(3)(B).

<sup>308</sup> Frank C. Wykoff and Charles R. Hulten, “The Measurement of Economic Depreciation,” *Depreciation, Inflation, and the Taxation of Capital* (ed. Charles R. Hulten), 1981, pp. 81-125.

<sup>309</sup> For a detailed discussion of the BEA methodology, see Barbara M. Fraumeni, “The Measurement of Depreciation in the U.S. National Income and Product Accounts,” *Survey of Current Business*, 77, July 1997, pp. 7–23.

<sup>310</sup> New assets are assumed, on average, to be placed in service at midyear, so that depreciation on them in the first year is equal to one-half the new investment times the depreciation rate.

an asset's life is equal to twice the rate that would have been obtained using the straight-line method.<sup>311</sup>

On average the declining balance rate is 1.65 for equipment and 0.91 for private nonresidential structures. These serve as the default declining balance rates for assets for which no data are available. Table 1 provides the rate of economic depreciation, service life, and declining balance rate for selected types of assets, as estimated by the BEA.<sup>312</sup>

**Table 1.—BEA Economic Depreciation Rates and Service Lives for Selected Asset Types**

Type of Asset	Depreciation rates	Service life (years)	Declining-balance rates
<b>Private nonresidential equipment</b>			
Ships and boats	0.0611	27	1.65
Railroad equipment	0.0589	28	1.65
Farm tractors	0.1452	9	1.3064
Construction tractors	0.1633	8	1.3064
Agricultural machinery, except tractors	0.1179	14	1.65
Construction machinery, except tractors	0.155	10	1.55
<b>Private nonresidential structures</b>			
Office buildings	0.0247	36	0.8892
Educational buildings	0.0188	48	0.9024
Hospitals	0.0188	48	0.9024
<b>Residential capital</b>			
1-to-4 unit structures-new	0.0114	80	0.91
1-to-4 unit structures-additions and alterations	0.0227	40	0.91
1-to-4 unit structures-major replacements	0.0364	25	0.91

Source: Bureau of Economic Analysis, Depreciation Estimates.

<sup>311</sup> U.S. Department of Commerce, Bureau of Economic Analysis, *Fixed Assets and Consumer Durable Goods in the United States, 1925-97*, Washington, DC: U.S. Government Printing Office, September, 2003, p. M-6, M-7.

<sup>312</sup> U.S. Department of Commerce, Bureau of Economic Analysis, "BEA Depreciation Estimates," available at bottom of <https://www.bea.gov/help/faq/1031>.

### Statutory corporate rate

The corporate tax system also influences the user cost of capital through the statutory corporate income tax rate. The corporate income tax raises the user cost of capital by increasing the required before-tax return to generate the same after-tax revenue. This requires more productive assets than would be needed without this additional cost. If asset prices reflect their productivity, these new assets may be more expensive, taking account of corporate income tax. A greater total cost for assets may increase the value of economic depreciation. To the extent that financing costs are not deductible, they also increase the opportunity cost of funds.

### User cost of capital and investment

While the tax system directly affects the user cost of capital, the impact of the tax system on investment depends on how sensitive investment is to changes in the user cost of capital. If investment is relatively responsive to the user cost of capital, then policymakers can influence the level of investment by enacting changes in the corporate tax rate, depreciation allowances, investment tax credits, and/or taxation of returns to investment at the individual level.

### **Effective marginal tax rates**

One way to measure the potential inefficiency in the allocation of capital is to calculate the effective marginal tax rate on investment. The effective marginal tax rate is the rate that offers the same incentives implied by various features of the Code, as applied directly to economic income.<sup>313</sup> The effective marginal tax rate is calculated from the user cost of capital<sup>314</sup> and leaves an after-tax real rate of return sufficient to cover the real financing costs of the investment and economic depreciation. Effective marginal tax rates are often used as a measure of investment incentives in lieu of the user cost of capital upon which it is based. Tax changes that increase the user cost of capital also increase the effective marginal tax rate. Similarly, tax changes that reduce the user cost of capital also reduce the effective marginal tax rate. Increases (decreases) in the effective marginal tax rate tend to decrease (increase) investment in the long run, and thus decrease (increase) the size of the aggregate capital stock.

Economic output, however, depends not only on the size of the capital stock but also on its composition. In the absence of taxes, the operation of a competitive economy causes capital to flow to sectors where it is expected to earn the highest rate of return. This results in an allocation of investment that produces the largest amount of national income. However, if effective marginal tax rates differ across sectors of the economy, more capital may accumulate in lightly taxed sectors, and less capital may be invested in highly taxed sectors. This may result in

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<sup>313</sup> While useful for measuring marginal incentive effects, effective marginal tax rates are not relevant for purposes of comparing tax burdens on investors in particular activities or industries. The calculation of effective marginal tax rates depends on a concept of long-run equilibrium in which all investors earn the same risk-adjusted after-tax rate of return; therefore, differences in effective marginal tax rates do not reflect differences in investor returns. Mackie, "Unfinished Business," June 2002.

<sup>314</sup> For a detailed description of the methodology and calculations involved, see Congressional Budget Office, *Computing Effective Tax Rates on Capital Income*, December 2006, available at <http://www.cbo.gov/ftpdocs/76xx/doc7698/12-18-TaxRates.pdf>

an inefficient allocation of capital to sectors in which it earns a lower pre-tax rate of return, reducing total productivity and potential output across all sectors. Thus, the effect of a reduction in the economy-wide effective marginal tax rate on investment could be partially offset if the disparity in effective marginal tax rates across sectors increases.

Table 2 reports a 2024 estimate of effective marginal tax rates on capital income.<sup>315</sup> The overall effective marginal tax rate on capital income is 14.2 percent. However, the rate varies significantly depending on the type of investment, the form of business organization, and the source of financing. The effective marginal tax rate on all business investment is 18.2 percent, with different effective rates within the corporate and noncorporate sector, as well different effective rates depending on the source of financing. Investment for equity-financed owner-occupied housing is tax-favored relative to overall business investment, with an effective marginal tax rate of 6.9 percent.

**Table 2.—Effective Marginal Tax Rates on Capital Income, 2024**

Overall	14.2
Business	18.2
<i>By Legal Form</i>	
Corporate	17.0
Passthrough	21.0
<i>By Source of Financing</i>	
Equity-financed	20.9
Debt-financed	6.1
Owner-occupied housing	
Equity-financed	6.9
Debt-financed	22.9

Source: Congressional Budget Office.

<sup>315</sup> See Congressional Budget Office, *The Budget and Economic Outlook: 2024-2034*, February 2024. Data available under “Tax Parameters and Effective Marginal Tax Rates” section at <https://www.cbo.gov/data/budget-economic-data#10>.



## B. Data and Analysis of Specific Tax Provisions

### 1. Cost recovery

#### Use of expensing and bonus depreciation in 2017 by industrial sector

The discussion below includes several tables that show the distribution of the section 179 deduction and bonus depreciation.<sup>316</sup> These tables are broken down by the industry of the taxpayer, by size of the taxpayer's gross receipts, and by the form of the reporting entity. Included in the tables are several usage measures that provide an estimate of the intensity of section 179 and bonus depreciation usage.

Table 3 shows the distribution of section 179 deductions by industry. The aggregate deductions across all industries totaled \$64.5 billion in 2021. Agriculture and related industries, construction, wholesale and retail trade, manufacturing and professional, scientific and technical services reported the largest share of section 179 deductions.

**Table 3.—Section 179 Expense Deduction by Industrial Sector, 2021  
(Billions of Dollars)**

Sector	Total Sec. 179 Deduction Reported	Percentage Distribution of Sec. 179 Reported	Approximation of Sec. 179 Eligible Base	Sec. 179 Usage Index
Agriculture, Forestry, Fishing and Hunting.....	5.7	8.8%	38.7	14.7%
Mining.....	0.4	0.6%	39.8	1.0%
Utilities.....	0.2	0.2%	147.1	0.1%
Construction.....	10.8	16.8%	66.2	16.3%
Manufacturing.....	5.1	7.9%	244.5	2.1%
Wholesale and Retail Trade.....	7.5	11.7%	210.6	3.6%
Transportation and Warehousing.....	4.1	6.4%	107.2	3.8%
Information.....	0.6	0.9%	126.3	0.5%
Finance and Insurance.....	1.3	2.0%	65.0	2.0%
Real Estate and Rental and Leasing.....	2.9	4.5%	214.6	1.4%
Professional, Scientific, and Technical Services.....	3.8	5.9%	39.0	9.7%
Management of Companies.....	0.3	0.5%	31.3	1.1%
Administrative and Waste Management Services.....	3.5	5.4%	26.0	13.4%
Education Services.....	0.3	0.4%	2.1	12.1%
Health Care and Social Assistance.....	2.9	4.5%	29.3	9.8%
Arts, Entertainment, and Recreation.....	1.3	2.0%	15.0	8.5%
Accommodation and Food Services.....	2.4	3.7%	38.7	6.2%
Other Services.....	2.3	3.6%	18.7	12.4%
Unclassified.....	9.2	14.2%	74.1	12.4%
<b>TOTAL.....</b>	<b>64.5</b>	<b>100.0%</b>	<b>1534.3</b>	<b>4.2%</b>

Note: Totals may not equal sum of components due to rounding.

<sup>316</sup> Data on section 179 deductions and bonus depreciation are from Form 4562, *Depreciation and Amortization*, attached to returns filed by C corporations, S corporations, partnerships and individuals. In the case of individuals, section 179 deductions reported on page 2 of Schedule E, *Supplemental Income and Loss*, are not included as those deductions are attributed to S corporations and partnerships.

Table 3 also shows a section 179 usage index. The reported “usage index” is the percentage of section 179 deductions divided by the staff of the Joint Committee on Taxation’s estimate of the eligible base.<sup>317</sup> The eligible base for 2021 was approximately \$1.53 trillion. Taxpayers that make substantial annual purchases of eligible assets are not eligible to expense those acquisitions under section 179 because of the phase-out threshold (\$2,620,000 in 2021). Consequently, the section 179 usage index is generally low for sectors with concentrations of larger or more capital-intensive businesses such as utilities.

Table 4 shows the distribution of bonus depreciation by business sector. Across all sectors, \$980.2 billion of bonus depreciation was reported in 2021. Bonus depreciation was concentrated in the manufacturing, wholesale and retail trade, information, and real estate and rental and leasing sectors.

A bonus depreciation usage index is also shown that is calculated as the amount of bonus depreciation taken divided by the maximum potential bonus deduction (up to 100 percent of the eligible base<sup>318</sup>). Measurement limitations make this usage index a somewhat imprecise measure.<sup>319</sup>

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<sup>317</sup> This eligible base is approximated by the sum of section 179 expense deductions reported, bonus depreciation reported, and the remaining three- through 20-year MACRS investment basis excluding listed property placed in service during the 2021 tax year using the general depreciation system.

<sup>318</sup> The eligible base is approximated as the sum of bonus depreciation taken plus the basis of three through 20-year MACRS property placed in service in 2021 computed after being reduced by section 179 deductions.

<sup>319</sup> Expenditures for certain property eligible for bonus depreciation in 2021 are not reported separately on the depreciation form.

**Table 4.—Bonus Depreciation by Industrial Sector, 2021  
(Billions of Dollars)**

Sector	Total Bonus Depreciation Reported	Percentage Distribution Bonus Depreciation	Approximation of Bonus Eligible Base	Bonus Usage Index
Agriculture, Forestry, Fishing and Hunting.....	16.9	1.7%	32.7	51.7%
Mining.....	29.4	3.0%	39.2	75.0%
Utilities.....	23.8	2.4%	147.0	16.2%
Construction.....	38.2	3.9%	54.9	69.6%
Manufacturing.....	184.2	18.8%	239.3	77.0%
Wholesale and Retail Trade.....	146.8	15.0%	201.8	72.8%
Transportation and Warehousing.....	66.9	6.8%	102.4	65.3%
Information.....	111.6	11.4%	125.7	88.8%
Finance and Insurance.....	52.3	5.3%	63.5	82.5%
Real Estate and Rental and Leasing.....	157.6	16.1%	210.9	74.7%
Professional, Scientific, and Technical Services.....	23.7	2.4%	34.3	69.2%
Management of Companies.....	27.3	2.8%	31.0	88.1%
Administrative and Waste Management Services.....	14.4	1.5%	21.8	66.2%
Education Services.....	1.3	0.1%	1.7	73.9%
Health Care and Social Assistance.....	20.0	2.0%	26.0	77.2%
Arts, Entertainment, and Recreation.....	9.7	1.0%	13.4	72.3%
Accommodation and Food Services.....	27.4	2.8%	36.1	75.8%
Other Services.....	9.3	0.9%	15.8	58.8%
Unclassified.....	19.3	2.0%	41.2	46.9%
<b>TOTAL.....</b>	<b>980.2</b>	<b>100.0%</b>	<b>1,438.6</b>	<b>68.1%</b>

Note: Totals may not equal sum of components due to rounding.

As shown, the bonus depreciation usage index across all taxpayers in 2021 is 68.1 percent, that is, taxpayers did not benefit from bonus depreciation for approximately 31.9 percent of potentially eligible property. Bonus depreciation accelerates deductions which otherwise would be taken in later years and thus provides a potential timing benefit to taxpayers. The Bonus Usage Index above has increased substantially since 2017, which may possibly reflect an incentive to utilize any potential tax benefits before possible expiration as well as recent legislation expanding bonus allowance.

**Use of expensing and bonus depreciation in the 2021 tax year by entity size**

Table 5 shows the distribution of section 179 deductions by size of the reporting entity’s gross business receipts. Due to the phase-out threshold, section 179 is limited to taxpayers with qualified investment below specified levels. As a result, larger businesses have a clear drop off in section 179 deductions. As shown, \$53.6 billion of the total \$64.5 billion section 179 deductions, or approximately 83 percent of these deductions, are reported by businesses with less than \$10 million in total business receipts.

The overall measure of section 179 usage is 10.8 percent for businesses with less than \$10 million in gross business receipts. The section 179 usage index falls off to 4.7 percent for businesses with gross business receipts between \$10 million and \$250 million. Usage is negligible for business with gross business receipts in excess of \$250 million.

**Table 5.—Section 179 Expense Deduction by Size of Business Receipts, 2021  
(Billions of Dollars)**

Sector	Less than \$10 million			\$10 million to \$250 million			Over \$250 million		
	Total Sec. 179 Deduction Reported	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index	Total Sec. 179 Deduction Reported	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index	Total Sec. 179 Deduction Reported	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index
Agriculture, Forestry, Fishing and Hunting.....	5.5	10.3%	16.7%	0.2	2.0%	6.3%	0.0	0.0%	0.0%
Mining.....	0.4	0.7%	8.5%	0.0	0.1%	0.0%	0.0	0.0%	0.0%
Utilities.....	0.1	0.3%	0.4%	0.0	0.2%	n/a	0.0	0.2%	0.0%
Construction.....	8.4	15.7%	24.0%	2.4	22.5%	10.9%	0.0	13.1%	0.0%
Manufacturing.....	2.7	5.1%	17.2%	2.3	21.6%	5.5%	0.0	10.5%	0.0%
Wholesale and Retail Trade.....	4.3	7.9%	19.1%	3.1	29.4%	11.2%	0.1	52.6%	0.1%
Transportation and Warehousing.....	3.7	7.0%	11.0%	0.4	3.5%	1.8%	0.0	1.5%	0.0%
Information.....	0.5	0.9%	11.1%	0.1	0.9%	1.0%	0.0	1.1%	0.0%
Finance and Insurance.....	1.1	2.1%	8.6%	0.2	1.5%	2.4%	0.0	8.3%	0.0%
Real Estate and Rental and Leasing.....	2.8	5.2%	2.0%	0.1	1.1%	0.4%	0.0	0.9%	0.0%
Professional, Scientific, and Technical Services.....	3.1	5.9%	16.2%	0.6	5.7%	6.0%	0.0	6.8%	0.0%
Management of Companies.....	0.3	0.5%	9.7%	0.0	0.4%	0.0%	0.0	0.0%	0.0%
Administrative and Waste Management.....	3.1	5.9%	21.2%	0.3	3.1%	5.2%	0.0	3.0%	0.0%
Education Services.....	0.2	0.4%	16.7%	0.0	0.2%	0.0%	0.0	0.0%	0.0%
Health Care and Social Assistance.....	2.6	4.9%	18.4%	0.3	2.5%	5.1%	0.0	1.5%	0.0%
Arts, Entertainment, and Recreation.....	1.2	2.2%	15.8%	0.1	0.8%	2.8%	0.0	0.0%	0.0%
Accommodation and Food Services.....	2.0	3.8%	9.0%	0.3	3.3%	3.7%	0.0	0.0%	0.0%
Other Services.....	2.2	4.1%	14.3%	0.1	1.3%	5.0%	0.0	0.4%	0.0%
Unclassified.....	9.2	17.2%	12.4%	0.0	0.0%	n/a	0.0	0.0%	n/a
<b>TOTAL.....</b>	<b>53.6</b>	<b>100.0%</b>	<b>10.8%</b>	<b>10.7</b>	<b>100.0%</b>	<b>4.7%</b>	<b>0.3</b>	<b>100.0%</b>	<b>0.0%</b>

Note: Totals may not equal sum of components due to rounding.

Table 6 presents the distribution of bonus depreciation by size of the reporting entities' gross business receipts. Roughly 60 percent of the deductions for bonus depreciation were taken by businesses with total business receipts greater than \$250 million. As shown, small, medium, and large businesses reported bonus depreciation of \$245.2 billion, \$148 billion, and \$587 billion, respectively. The bonus usage index increases with the size class of the business as well, 59.8 percent, 68.1 percent, and 72.4 percent, respectively.

**Table 6.—Bonus Depreciation by Size of Business Receipts, 2021  
(Billions of Dollars)**

Sector	Less than \$10 million			\$10 million to \$250 million			Over \$250 million		
	Total Bonus Deduction Reported	Percentage Distribution Bonus Depreciation	Bonus Usage Index	Total Bonus Deduction Reported	Percentage Distribution Bonus Depreciation	Bonus Usage Index	Total Bonus Deduction Reported	Percentage Distribution Bonus Depreciation	Bonus Usage Index
Agriculture, Forestry, Fishing and Hunting.....	12.7	5.2%	46.9%	1.9	1.3%	63.3%	2.3	0.4%	87.1%
Mining.....	2.4	1.0%	58.5%	7.5	5.1%	80.6%	19.5	3.3%	75.7%
Utilities.....	8.1	3.3%	36.5%	5.4	3.6%	0.0%	10.3	1.8%	0.0%
Construction.....	14.6	6.0%	55.7%	16.6	11.2%	84.7%	7.1	1.2%	77.2%
Manufacturing.....	8.0	3.3%	62.5%	27.5	18.6%	70.0%	148.7	25.3%	79.4%
Wholesale and Retail Trade.....	10.5	4.3%	61.8%	19.3	13.0%	78.8%	117.1	20.0%	73.1%
Transportation and Warehousing.....	12.4	5.0%	42.3%	14.7	9.9%	67.7%	39.8	6.8%	77.5%
Information.....	2.5	1.0%	64.1%	6.2	4.2%	60.8%	102.8	17.5%	92.2%
Finance and Insurance.....	7.2	3.0%	63.2%	5.7	3.9%	70.4%	39.4	6.7%	89.4%
Real Estate and Rental and Leasing.....	99.2	40.5%	73.2%	12.8	8.7%	49.6%	45.6	7.8%	92.3%
Professional, Scientific, and Technical Services.....	9.3	3.8%	61.6%	7.1	4.8%	75.5%	7.4	1.3%	75.0%
Management of Companies.....	1.6	0.7%	57.1%	2.8	1.9%	82.4%	22.9	3.9%	92.6%
Administrative and Waste Management.....	5.6	2.3%	51.9%	4.2	2.8%	77.8%	4.7	0.8%	84.7%
Education Services.....	0.5	0.2%	62.5%	0.4	0.3%	0.0%	0.4	0.1%	97.3%
Health Care and Social Assistance.....	7.4	3.0%	67.3%	4.6	3.1%	80.7%	8.1	1.4%	87.3%
Arts, Entertainment, and Recreation.....	3.8	1.6%	63.3%	2.9	2.0%	82.9%	2.9	0.5%	74.9%
Accommodation and Food Services.....	13.5	5.5%	67.2%	6.8	4.6%	86.1%	7.0	1.2%	85.9%
Other Services.....	6.6	2.7%	52.4%	1.5	1.0%	78.9%	1.2	0.2%	0.0%
Unclassified.....	19.3	7.9%	46.8%	0.0	0.0%	n/a	0.0	0.0%	n/a
<b>TOTAL.....</b>	<b>245.2</b>	<b>100.0%</b>	<b>59.8%</b>	<b>148.0</b>	<b>100.0%</b>	<b>68.1%</b>	<b>587.0</b>	<b>100.0%</b>	<b>72.4%</b>

Note: Totals may not equal sum of components due to rounding.

## **Use of expensing and bonus depreciation in the 2021 tax year by entity type**

Tables 7 and 8 present the section 179 deduction and bonus depreciation aggregates and usage index measures broken down by the underlying reporting entity: sole proprietor and farm (grouped together), partnership,<sup>320</sup> S corporation, and C corporation. As shown in Table 7, sole proprietorships and farms account for \$24.5 billion of section 179 deductions, followed by S corporations with \$24.3 billion of section 179 deductions, followed by C corporations with \$7.8 billion, and partnerships with \$7.9 billion. In percentage terms, S corporations and sole proprietorships and farms each account for 38 percent of total section 179 deductions, followed by C corporations and partnerships each accounting for 12 percent of total section 179 deductions.

The section 179 deduction usage index for sole proprietorships and farms and S corporations are higher than that of other entities due to the generally smaller scale of these businesses. The section 179 deduction usage index for sole proprietorships and farms is 24.5 percent. S corporations have the next highest usage index, 24.3 percent, followed by partnerships with two percent and by C corporations with one percent.

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<sup>320</sup> A limited liability company (“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.



**Table 7.—Section 179 Expense Deduction by Reporting Entity, 2021  
(Billions of Dollars)**

Sector	Sole Prop & Farm			Partnerships			Subchapter S Corporations			C Corporations		
	Total Sec. 179 Deduction	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index	Total Sec. 179 Deduction	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index	Total Sec. 179 Deduction	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index	Total Sec. 179 Deduction	Percentage Distribution of Sec. 179 Reported	Sec. 179 Usage Index
	Reported	Reported	Reported	Reported	Reported	Reported	Reported	Reported	Reported	Reported	Reported	Reported
Agriculture, Forestry, Fishing and Hunting.....	0.8	3.2%	17.5%	1.9	23.7%	10.9%	1.9	8.0%	17.4%	1.1	14.4%	18.4%
Mining.....	0.1	0.4%	6.2%	0.1	0.8%	0.4%	0.2	0.8%	6.6%	0.0	0.5%	0.2%
Utilities.....	0.0	0.0%	2.5%	0.0	0.5%	0.1%	0.1	0.4%	45.5%	0.0	0.2%	0.0%
Construction.....	2.9	11.8%	24.8%	0.9	11.3%	8.6%	5.7	23.4%	18.2%	1.4	17.3%	10.5%
Manufacturing.....	0.4	1.5%	14.4%	0.5	6.3%	1.7%	3.0	12.5%	12.7%	1.2	15.1%	0.6%
Wholesale and Retail Trade.....	1.5	6.3%	18.7%	0.7	8.9%	4.0%	3.8	15.7%	11.8%	1.5	18.8%	1.0%
Transportation and Warehousing.....	1.9	7.7%	14.7%	0.3	3.7%	0.9%	1.4	5.9%	7.8%	0.5	6.4%	1.2%
Information.....	0.2	1.0%	23.9%	0.1	0.6%	0.2%	0.1	0.6%	8.4%	0.1	1.9%	0.1%
Finance and Insurance.....	0.5	2.0%	18.3%	0.4	4.8%	2.4%	0.2	1.0%	10.1%	0.2	2.2%	0.4%
Real Estate and Rental and Leasing.....	0.9	3.7%	10.4%	0.9	11.1%	0.6%	0.9	3.6%	6.1%	0.2	3.0%	0.4%
Professional, Scientific, and Technical Services..	1.8	7.2%	22.8%	0.4	5.2%	4.8%	1.2	4.9%	15.9%	0.4	5.5%	2.8%
Management of Companies.....	0.0	0.0%	5.8%	0.1	1.0%	2.2%	0.1	0.3%	12.4%	0.2	2.2%	0.6%
Administrative and Waste Management.....	1.5	5.9%	24.6%	0.2	3.0%	4.1%	1.5	6.2%	18.8%	0.3	4.0%	4.8%
Education Services.....	0.1	0.4%	17.5%	0.0	0.1%	2.4%	0.1	0.4%	25.2%	0.0	0.3%	4.6%
Health Care and Social Assistance.....	0.8	3.1%	20.8%	0.3	3.8%	3.7%	1.6	6.6%	20.0%	0.2	2.8%	2.3%
Arts, Entertainment, and Recreation.....	0.4	1.8%	11.7%	0.2	2.3%	3.5%	0.5	2.1%	20.8%	0.2	1.9%	4.1%
Accommodation and Food Services.....	0.5	1.9%	13.7%	0.8	10.6%	4.5%	1.0	4.1%	12.1%	0.1	1.2%	1.1%
Other Services.....	1.1	4.5%	17.4%	0.2	2.2%	3.6%	0.9	3.6%	17.4%	0.2	2.2%	6.8%
Unclassified.....	9.2	37.5%	12.4%	0.0	0.0%	n/a	0.0	0.0%	n/a	0.0	0.0%	n/a
<b>TOTAL.....</b>	<b>24.5</b>	<b>100.0%</b>	<b>15.3%</b>	<b>7.9</b>	<b>100.0%</b>	<b>2.0%</b>	<b>24.3</b>	<b>100.0%</b>	<b>13.6%</b>	<b>7.8</b>	<b>100.0%</b>	<b>1.0%</b>

Note: Totals may not equal sum of components due to rounding.

Table 8 presents bonus depreciation by type of entity. C corporations claimed \$544.6 billion of the bonus depreciation deductions or 55.6 percent of the total. This follows from the relatively high capital intensity of many C corporations. Partnerships reported \$272.7 billion or 27.8 percent of the total, S corporations reported \$111.1 billion or 11.3 percent of the total, and sole proprietorships and farms reported \$51.8 billion or 5.3 percent of total bonus depreciation deductions. S corporations, partnerships, and C corporations each have similarly high aggregate bonus index values at 70 percent, 70 percent, and 68.9 percent respectively. Sole proprietorships and farms have a 49.9 percent aggregate bonus usage.

**Table 8.—Bonus Depreciation by Reporting Entity, 2021  
(Billions of Dollars)**

Sector	Sole Prop & Farm			Partnerships			Subchapter S Corporations			C Corporations		
	Total	Percentage	Bonus	Total	Percentage	Bonus	Total	Percentage	Bonus	Total	Percentage	Bonus
	Bonus Deduction Reported	Distribution Bonus Depreciation	Usage Index	Bonus Deduction Reported	Distribution Bonus Depreciation	Usage Index	Bonus Deduction Reported	Distribution Bonus Depreciation	Usage Index	Bonus Deduction Reported	Distribution Bonus Depreciation	Usage Index
Agriculture, Forestry, Fishing and Hunting.....	1.5	2.8%	43.3%	7.9	2.9%	52.1%	4.7	4.2%	51.3%	2.8	0.5%	56.7%
Mining.....	0.8	1.5%	55.8%	12.9	4.7%	81.2%	2.1	1.9%	77.3%	13.6	2.5%	71.0%
Utilities.....	0.1	0.2%	66.2%	15.1	5.5%	35.4%	0.1	0.1%	75.0%	8.5	1.6%	8.2%
Construction.....	3.9	7.6%	47.1%	7.7	2.8%	82.0%	18.3	16.5%	71.7%	8.2	1.5%	71.3%
Manufacturing.....	1.0	1.9%	47.3%	19.8	7.3%	69.9%	17.3	15.6%	83.4%	146.0	26.8%	77.7%
Wholesale and Retail Trade.....	3.0	5.7%	54.7%	13.2	4.8%	78.6%	23.2	20.9%	80.8%	107.5	19.7%	71.2%
Transportation and Warehousing.....	4.1	8.0%	40.3%	20.1	7.4%	59.5%	9.7	8.7%	57.2%	33.0	6.1%	79.5%
Information.....	0.5	0.9%	63.4%	21.9	8.0%	91.7%	1.2	1.1%	78.4%	87.9	16.1%	88.4%
Finance and Insurance.....	1.2	2.3%	61.4%	9.0	3.3%	58.4%	1.8	1.6%	80.7%	40.4	7.4%	91.9%
Real Estate and Rental and Leasing.....	4.5	8.7%	63.9%	104.6	38.4%	77.3%	9.6	8.6%	71.3%	38.9	7.1%	70.6%
Professional, Scientific, and Technical Services..	2.9	5.7%	58.6%	6.4	2.3%	79.1%	5.1	4.6%	80.7%	9.3	1.7%	62.6%
Management of Companies.....	0.1	0.1%	96.1%	2.2	0.8%	60.0%	0.5	0.4%	84.6%	24.5	4.5%	92.0%
Administrative and Waste Management...	2.0	3.8%	51.6%	3.7	1.4%	68.2%	4.1	3.7%	62.7%	4.7	0.9%	77.3%
Education Services.....	0.2	0.5%	55.2%	0.3	0.1%	74.9%	0.3	0.2%	84.5%	0.5	0.1%	81.6%
Health Care and Social Assistance.....	1.5	2.9%	61.7%	6.6	2.4%	83.9%	4.4	4.0%	69.2%	7.5	1.4%	81.0%
Arts, Entertainment, and Recreation.....	1.5	3.0%	52.9%	4.1	1.5%	83.1%	1.5	1.3%	78.1%	2.5	0.5%	69.8%
Accommodation and Food Services.....	1.6	3.1%	60.1%	14.1	5.2%	79.8%	4.6	4.1%	63.1%	7.1	1.3%	83.1%
Other Services.....	2.1	4.1%	45.7%	2.9	1.1%	62.7%	2.6	2.4%	63.3%	1.6	0.3%	68.7%
Unclassified.....	19.3	37.3%	46.9%	0.0	0.0%	n/a	0.0	0.0%	n/a	0.0	0.0%	n/a
<b>TOTAL.....</b>	<b>51.8</b>	<b>100.0%</b>	<b>49.9%</b>	<b>272.7</b>	<b>100.0%</b>	<b>70.0%</b>	<b>111.1</b>	<b>100.0%</b>	<b>71.8%</b>	<b>544.6</b>	<b>100.0%</b>	<b>68.9%</b>

Note: Totals may not equal sum of components due to rounding.

## **Economic analysis of expensing and bonus depreciation**

Changes in tax depreciation schedules may affect the overall level of investment in the economy. However, the magnitude of the effect is an empirical question. Bonus depreciation provisions enacted in recent years have generally had the effect of substantially raising the first-year depreciation a taxpayer could take, thereby increasing an investment's rate of tax depreciation. Although these provisions lower the user cost of capital, the overall effect depends on the degree to which taxpayers respond to the lower cost of capital by making investments they otherwise would not make. If the drop in the user cost of capital mainly benefits taxpayers who make a level of investment similar to the level that they would have made without bonus depreciation, then the effect on investment from the change in tax law is muted.

The literature on the effects of more generous cost recovery methods and on the sensitivity of capital investment to its user cost more generally, on balance, supports the theory that investment is responsive to taxes. A recent study showed that firms with immediate section 179 deduction benefits (*i.e.*, firms with positive net income) increased investment relative to firms with large losses that did not benefit as proximately from the provision.<sup>321</sup>

Studies analyzing the effects of bonus depreciation have found a wider range of investment responses. One study of the bonus depreciation provisions enacted in 2002 and 2003 concluded that the provisions had little impact on investment spending.<sup>322</sup> These smaller effects may result from firms that face high fixed costs of adjusting their capital stock,<sup>323</sup> or from a lack of taxpayer awareness or sophistication when deducting capital costs. Research on the bonus depreciation provisions enacted in 2002 and 2003 found a noticeable effect of tax incentives on investment in capital goods.<sup>324</sup> The authors argue that the demand for long-lived investment goods is extremely responsive to temporary changes in tax treatment because the value of these investments is not particularly sensitive to the date of purchase, while the cost could be if temporary tax incentives are in place. A more recent study on bonus depreciation found even stronger investment effects in response to the reinstatement of bonus depreciation between 2008

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<sup>321</sup> Eric Zwick and James Mahon, "Tax Policy and Heterogeneous Investment Behavior," *American Economic Review*, vol. 107, no. 1, 2017, pp. 217-248.

<sup>322</sup> Darrel Cohen and Jason Cummins, "A Retrospective Evaluation of the Effects of Temporary Partial Expensing," *Board of Governors of the Federal Reserve System Finance and Economics Discussion Series: 2006-19*, Divisions of Research of Statistics and Monetary Affairs, Federal Reserve Board, Washington, DC, April 2006. However, a subsequent study criticizes the authors' use of five-year property and seven-year property as a treatment and control group, neither of which gets much benefit from bonus depreciation. Christopher House and Matthew Shapiro, "Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation," *American Economic Review*, vol. 98, June 2008, pp. 737-768.

<sup>323</sup> Ricardo J. Caballero and Eduardo M.R.A. Engel, "Explaining Investment Dynamics in U.S. Manufacturing: A Generalized (*S, s*) Approach," *Econometrica* 67(4), 1999, pp. 783-826.

<sup>324</sup> Christopher House and Matthew Shapiro, "Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation," *American Economic Review*, vol. 98, June 2008, pp. 737-768.

and 2010.<sup>325</sup> The authors show that small-sized firms' investment decisions are substantially more responsive to these bonus incentives, possibly because these incentives eased liquidity constraints or sufficiently encouraged firms to incur the costly adjustment of their capital stock.<sup>326</sup> Also, the authors find that firms only respond to bonus depreciation incentives that generate immediate cash flows, implying that firms with substantial tax losses do not take advantage of future tax benefits resulting from bonus depreciation.

## **2. Incentives for research**

### **Scope of tax expenditures and government subsidies for research activities**

The most recent tax expenditure estimate for the research credit was estimated at \$19.8 billion in 2023, with \$18 billion from corporations and \$1.8 billion from individuals. This tax expenditure is projected to grow to \$22 billion by 2024 (\$20 billion for corporations and \$2 billion for individuals).<sup>327</sup>

The Federal government also directly subsidizes research activities. Direct government outlays for research have substantially exceeded the annual estimated value of the tax expenditure provided by either the research and experimentation tax credit or the expensing of research and development expenditures. For example, in fiscal year 2022, the National Science Foundation's gross outlays for research and related activities were \$6.6 billion, the Department of Defense's gross outlays for research, development, and test and evaluation was \$157.8 billion,<sup>328</sup> the Department of Energy's science gross outlays were \$7.7 billion, and the Department of Health and Human Services' budget for the National Institutes of Health was \$46.1 billion.<sup>329</sup> However, such direct government outlays are generally for directed research on projects selected by the government. By contrast, the research credit provides a tax subsidy to any qualified project of an eligible taxpayer with no application to a grant-making agency required. Projects are chosen based on the taxpayer's assessment of future profit potential.

Tables 9 and 10 present data for 2021 on those corporations that claimed the research tax credit by industry and asset size, respectively. Table 9 shows 2021 data on those corporations that claimed the research tax credit by industry. Corporations whose primary activity is manufacturing comprise 27.6 percent of taxpayers claiming the research credit. However, these

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<sup>325</sup> Eric Zwick and James Mahon, "Tax Policy and Heterogeneous Investment Behavior," *American Economic Review*, vol. 107, no. 1, 2017, pp. 217-248.

<sup>326</sup> Thomas Winberry, "Lumpy Investment, Business Cycles, and Stimulus Policy," *American Economic Review*, vol. 111, no. 1, 2021, pp. 394-396.

<sup>327</sup> Joint Committee on Taxation, *Estimates of Federal Tax Expenditures for Fiscal Years 2023-2027* (JCX-59-23), December 7, 2023, p. 29s.

<sup>328</sup> The staff of the Joint Committee on Taxation calculated the Department of Defense's total gross outlays for research, development, test and evaluation by summing the individual gross outlays by the Army, Navy, Air Force, Space Force, and other defense-wide agencies (*i.e.*, other than the military departments).

<sup>329</sup> Office of Management and Budget, *Appendix, Budget of the United States Government, Fiscal Year 2024*, pp. 1141, 278-282, 367, and 431.

manufacturing corporations claimed nearly 40 percent of the total dollar value of research credits in 2021. Table 10 shows the distribution of 2021 research credits by asset size. Firms with \$50 million or more account for 14.6 percent of all corporations claiming a credit but represent more than 90.4 percent of the credits claimed. Nevertheless, Table 10 documents that many small firms claim the research credit.

**Table 9.—Percentage Distribution of Corporations Claiming Research Tax Credit and Percentage of Credit Claimed by Sector, 2021**

<b>Industry</b>	<b>Percent of Corporations Claiming Credit</b>	<b>Percent of Total R&amp;E Credit</b>
Manufacturing	27.6	39.9
Information	11.6	29.5
Professional, Scientific, and Technical Services	33.4	11.4
Retail Trade	3.5	4.8
Wholesale Trade	7.4	4.5
Finance and Insurance	2.0	3.7
Holding Companies	0.3	1.3
Construction	3.9	1.0
Transportation and Warehousing	0.4	0.8
Health Care and Social Services	3.9	0.8
Utilities	0.2	0.5
Real Estate and Rental and Leasing	0.5	0.3
Mining	0.2	0.3
Agriculture, Forestry, Fishing and Hunting	0.1	0.2
Educational Services	0.9	0.1
Accommodation and Food Services	0.2	0.1
Arts, Entertainment, and Recreation	0.3	0.1
Other Services	0.4	(1)

(1) Less than 0.1 percent.

Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Statistics of Income data.

**Table 10.—Percentage Distribution of Taxpayers Claiming Research Tax Credit and of Credit Claimed by Taxpayer Size, 2021**

Asset Size (\$)	Percent of Firms Claiming Credit	Percent of Credit Claimed
0	1.3	0.3
1 thru 99,999	8.0	0.1
100,000 thru 249,999	4.9	0.1
250,000 thru 499,999	6.6	0.2
500,000 thru 999,999	8.8	0.4
1,000,000 thru 9,999,999	36.7	4.0
10,000,000 thru 49,999,999	19.0	4.5
50,000,000 +	14.6	90.4

Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Statistics of Income data.

### **Economic analysis of research tax incentives**

Technological development is an important component of economic growth. However, although an individual business may find it profitable to undertake some research, it may not find it profitable to invest in research as much as it otherwise might because it is difficult to capture the full benefits from the research and prevent such benefits from being used by competitors. In general, businesses acting in their own self-interest will not necessarily invest in research to the extent that would be consistent with the best interests of the overall economy. This is because costly scientific and technological advances made by one firm may be cheaply copied by its competitors. Research is one of the areas where there is a consensus among economists that government intervention in the marketplace may improve overall economic efficiency.<sup>330</sup> However, this does not mean that increased tax benefits or more government spending for research will improve economic efficiency. It is possible to decrease economic efficiency by spending too much on research. However, previous findings have suggested that there is

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<sup>330</sup> This conclusion does not depend upon whether the basic tax regime is an income tax or a consumption tax.

inefficient underinvestment in research worldwide.<sup>331</sup> Nevertheless, even if there were agreement that additional subsidies for research are warranted, misallocation of research dollars across competing sectors of the economy could diminish economic efficiency. It is difficult to determine whether, at the present levels and allocation of government subsidies for research, further government spending on research or additional tax benefits for research would increase or decrease overall economic efficiency.

If society underinvests in research, a tax subsidy may offset the private-market bias against research so that an optimal level of research projects are undertaken. Among the other policies employed by the Federal government to increase the aggregate level of research activities are direct spending and grants, favorable anti-trust rules, and patent protection.

### **Empirical results on the responsiveness of research expenditures to tax incentives**

The effect of tax policy on research activity is largely uncertain because there is relatively little consensus regarding the magnitude of the responsiveness of research to changes in taxes and other factors affecting its price. To the extent that research activities are responsive to the price of research activities, the section 174 deduction, research credit, and orphan drug credit should increase research activities.

As with any other commodity, economists expect the amount of research expenditures a firm incurs to respond positively to a reduction in the price paid by the firm. Economists often refer to this responsiveness in terms of price elasticity, which is measured as the ratio of the percentage change in quantity to a percentage change in price. For example, if demand for a product increases by five percent as a result of a ten-percent decline in price paid by the purchaser, that commodity is said to have a price elasticity of demand of 0.5.<sup>332</sup> One way of reducing the price paid by a buyer for a commodity is to provide a tax credit for the cost of research. A tax credit of ten percent is equivalent to a ten-percent price reduction. If the commodity for which a ten-percent tax credit is allowed has an elasticity of 0.5, the amount consumed will increase by five percent. Thus, if a flat research tax credit were provided at a ten-

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<sup>331</sup> See Zvi Griliches, "The Search for R&D Spillovers," *Scandinavian Journal of Economics*, vol. XCIV, 1992; M. Ishaq Nadiri, "Innovations and Technological Spillovers," National Bureau of Economic Research, Working Paper No. 4423, 1993; and Bronwyn Hall, "The Private and Social Returns to Research and Development," in Bruce Smith and Claude Barfield (eds.), *Technology, R&D and the Economy*: Brookings Institution Press 1996, pp. 1-14. These papers suggest that the rate of return to privately funded research expenditures is high compared to that in physical capital and the social rate of return exceeds the private rate of return. Griliches concludes, "in spite of [many] difficulties, there has been a significant number of reasonably well-done studies all pointing in the same direction: R&D spillovers are present, their magnitude may be quite large, and social rates of return remain significantly above private rates." Griliches, p. S43. Charles I. Jones and John C. Williams, "Measuring the Social Return to R&D," *Quarterly Journal of Economics*, vol. 113, November 1998, also conclude that "advanced economies like the United States substantially under invest in R&D" p. 1120.

<sup>332</sup> For simplicity, this analysis assumes that the product in question can be supplied at the same cost despite any increase in demand (*i.e.*, the supply is perfectly elastic). This assumption may not be valid, particularly over short periods of time, and particularly when the commodity—such as research scientists and engineers—is in short supply.



percent rate, and research expenditures had a price elasticity of 0.5, the credit could increase aggregate research spending by five percent.<sup>333</sup>

Most studies do not disentangle the effects of the section 174 deduction and the research credit; instead, they analyze the joint effects of these policies as research tax incentives. A recent survey concludes that research tax incentives have significant effects overall, concluding that the literature supports an estimated elasticity of R&D spending with respect to its tax-adjusted user cost of one or greater.<sup>334</sup> A seminal study using U.S. corporate tax returns found that reductions in the user cost of R&D generated substantially increases in research spending both immediately and over a longer time horizon.<sup>335</sup> The author found that research tax incentives particularly aid liquidity-constrained firms' ability to finance R&D in the short run. Additional studies have furthered this argument that research tax incentives have heterogeneous impacts based on firm productivity rather than financial constraints. Economists debate the reasons for these firm productivity differences, claiming that they may result from better management practices;<sup>336</sup> participation in industries with more competitive exporters;<sup>337</sup> or from positive feedback from internal increased R&D spending itself.<sup>338</sup> While the reasons for productivity differences are uncertain, they confirm the theory that research tax incentives substantially boost R&D spending.

### 3. Domestic content bonus

The domestic content bonus credits are designed to incentivize greater production and investment in the United States in relevant energy components. The production-related credits lower the prices of eligible energy products manufactured in the United States relative to foreign products. The investment-related credits reduce the user cost of capital, thereby encouraging greater investment in qualified energy property. However, as the domestic content bonus credits are relatively new, the staff of the Joint Committee on Taxation has not yet found any peer-reviewed economics literature on their overall effects.

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<sup>333</sup> It is important to note that not all research expenditures need be subject to a price reduction to have this effect. Only the expenditures that would not have been undertaken otherwise—so called marginal research expenditures—need be subject to the credit to have a positive incentive effect.

<sup>334</sup> Nicholas Bloom, John Van Reenen, and Heidi Williams, "A Toolkit of Policies to Promote Innovation," *Journal of Economic Perspectives*, vol. 33, no. 3, 2019, pp. 163-184.

<sup>335</sup> Nirupama Rao, "Do tax credits stimulate R&D spending? The effect of the R&D tax credit in its first decade," *Journal of Public Economics*, vol. 140, 2016, pp. 1-12.

<sup>336</sup> Nicholas Bloom and John Van Reenen, Measuring and Explaining Management Practices Across Firms and Countries, *The Quarterly Journal of Economics*, vol. 122, no. 4, November 2007, pp. 1351-1408, available at <https://doi.org/10.1162/qjec.2007.122.4.1351>.

<sup>337</sup> Bee Yan Aw, Mark J. Roberts, and Daniel Yi Xu, "R&D investment, exporting, and productivity dynamics," *American Economic Review*, vol. 101, no. 4, 2011, pp. 1312-1344.

<sup>338</sup> Ulrich Doraszelski, and Jordi Jaumandreu. "R&D and Productivity: Estimating Endogenous Productivity," *Review of Economic Studies*, vol. 80, no. 4, 2013, pp. 1338-1383.

#### **4. Credit for investment in advanced manufacturing production and sale of certain energy components (sec. 45X)**

The section 45X tax credit has the effect of incentivizing greater production of eligible components within the United States. Certain eligible components include certain solar energy components, wind energy components, inverters, qualifying battery components, and applicable critical minerals. The section 45X credit intends to lower the prices of products manufactured in the U.S. relative to foreign products. However, as the section 45X credit is relatively new, the staff of the Joint Committee on Taxation has not yet found any peer-reviewed economics literature on its overall effects.

#### **5. Credit for investment in advanced energy property (sec. 48C)**

The section 48C tax credit has the effect of lowering the user cost of capital, thereby incentivizing greater investment in qualified property. In addition to directly stimulating investment in qualified advanced energy projects, a section 48C credit indirectly influences companies to invest in technologies that complement these advanced energy projects and substitute away from investment projects that do not receive any tax credit benefits. Thus, a company that is initially indifferent between investing in advanced energy or a different investment would have a financial incentive to increase investment in qualified advanced energy projects and even substitute capital away from forms of nonqualified investments upon receipt of a section 48C credit.

The IRS initially announced the section 48C Phase I program in 2010, awarding \$2.3 billion worth of section 48C credits to 183 domestic clean energy manufacturing facilities in 2010.<sup>339</sup> The median credit amount was \$3.45 million, although the amounts varied widely. The 183 projects were awarded to 153 distinct applicants. The smallest total credit amount awarded to an applicant was \$112,500, while the largest total credit amount was \$154.8 million.

The projects span a wide range of energy technology areas that are consistent with Department of Energy rankings and recommendations.<sup>340</sup> Table 11 presents data on the distribution of 48C credits awarded by technology category.<sup>341</sup> The IRS awarded roughly half the total 48C credit value to Solar Photovoltaic projects.<sup>342</sup> Of the remaining credit totals, the

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<sup>339</sup> The full list of Section 48C recipients and credit amounts is available at <https://obamawhitehouse.archives.gov/the-press-office/fact-sheet-23-billion-new-clean-energy-manufacturing-tax-credits>.

<sup>340</sup> Treasury Inspector General for Tax Administration, *Assessment of the Internal Revenue Service's Interpretation of Section 1302 of the Recovery Act: Qualifying Advanced Energy Project Credit*, Reference Number: 2013-40-029, March 21, 2013. Available at <https://www.treasury.gov/tigta/auditreports/2013reports/201340029fr.html#advanced>.

<sup>341</sup> The staff of the Joint Committee on Taxation organized the 18 technology areas listed by the IRS into seven broader categories to calculate these credit distributions. The IRS publicly listed technology areas for 137 out of the 183 projects.

<sup>342</sup> Solar PV areas include the technology areas designated as “Solar PV,” “Solar CSI” (*i.e.*, materials used to make solar PV cells), and “Solar Components and Materials.”

IRS awarded 17.4 percent to Wind projects,<sup>343</sup> 10.1 percent to Industrial projects, and 9.4 percent to Building Efficiency projects.<sup>344</sup>

In 2013, the IRS announced the section 48C Phase II program, in which it reallocated \$150 million worth of credits that were never fully monetized by the 2010 recipients to twelve new projects.<sup>345</sup> The smallest Phase II award was \$700,000 for a wind power project, while three companies each received the largest award total of \$30 million to expand various manufacturing capacities.

The Inflation Reduction Act renewed and expanded the credit for investment in advanced energy property.<sup>346</sup> As a result, in 2023, the IRS established a program to allocate \$10 billion of credits for qualified investments in eligible qualifying advanced energy projects. The IRS specifically outlined that \$4 billion of the total \$10 billion allocation may be allocated only to projects located in certain energy communities.<sup>347</sup>

The economics literature has found general evidence that firms substitute away from fossil fuels and toward clean energy sources with sufficient incentives in other contexts.<sup>348</sup> One study has argued that the American Recovery and Reinvestment Act's clean energy package, which includes the section 48C credits, directly boosted clean energy investments as well as overall economic activity.<sup>349</sup> However, the academic literature has not reached a consensus on the magnitude of stimulus and substitution attributable to section 48C credits.

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<sup>343</sup> Wind-related technology areas include wind blades, wind towers, and wind turbines.

<sup>344</sup> The main technology areas comprising the "other" category include battery, biomass, and smart grid projects.

<sup>345</sup> The Department of Energy provides a list of the 2013 projects that received a section 48C Phase II allocation at <https://www.energy.gov/sites/prod/files/2013/12/f5/48C%20Phase%20II%20Selections%20Project%20Descriptions.pdf>.

<sup>346</sup> Public Law 117-169.

<sup>347</sup> Notice 2023-18.

<sup>348</sup> Chris Papageorgiou, Marianne Saam, and Patrick Schulte, "Substitution between Clean and Dirty Energy Inputs: A Macroeconomic Perspective," *Review of Economics and Statistics*, vol. 99, no. 2, 2017, pp. 281-290.

<sup>349</sup> Joseph E. Aldy, "Policy Monitor: A Preliminary Assessment of the American Recovery and Reinvestment Act's Clean Energy Package," *Review of Environmental Economics and Policy*, 2020.

**Table 11.—Percentage Distribution of Applicants Awarded  
Section 48C Credit by Technology Category, 2010**

<b>Category</b>	<b>Percent of Applicants Claiming Credit</b>	<b>Percent of Total 48C Credit Awarded</b>
Solar Photovoltaics	24.1	48.0
Wind	26.3	17.4
Industrial	5.8	10.1
Building Efficiency	16.1	9.4
Nuclear	1.5	4.5
Solar Thermal	8.0	3.0
Other	18.2	7.5

Source: Internal Revenue Service, staff of the Joint Committee on Taxation calculations.

Note: These percentage distributions are calculated using only the 137 Phase I projects that designated a specific technology area. The staff of the Joint Committee on Taxation categorized the 18 technology areas provided by the IRS into the seven technology categories listed in the preceding table.

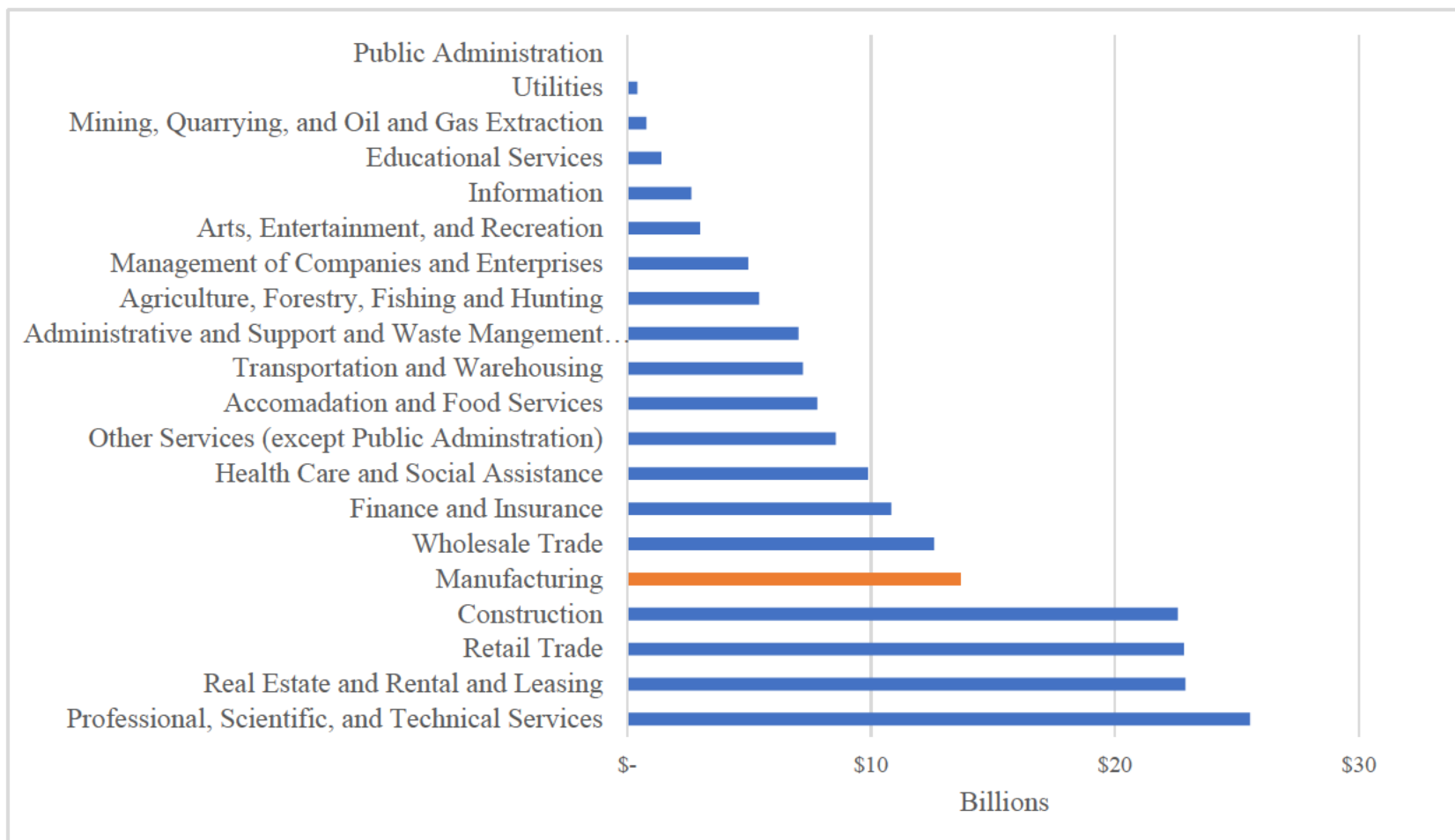
**6. Credit for investment in advanced semiconductor manufacturing facilities (sec. 48D)**

Similar to the descriptions in the preceding two sections, the section 48D tax credit has the effect of lowering the user cost of capital, thereby incentivizing greater investment in domestic semiconductor manufacturing. As the section 48D credit is relatively new, the staff of the Joint Committee on Taxation has not yet found any peer-reviewed economics literature on its overall effects.

**7. Deduction for qualified business income (sec. 199A)**

Figure 1 displays total section 199A deductions by industry based on the NAICS code reported by taxpayers on entity level tax returns. The staff of the Joint Committee on Taxation were able to match entities reported by individuals on Form 8995(a) to entity level returns, allowing analysis of the filing type, industry, and employment status of entities generating section 199A deductions. Figure 1 suggests that the manufacturing industry, which generated almost \$13.6 billion in section 199A deductions in 2021, has the fifth largest share of total section 199A deductions. The manufacturing industry accounts for seven percent of all section 199A deductions. One important caveat to note is that manufacturing classified based on the NAICS code may not always correspond to other perceptions of manufacturing companies.

**Figure 1.—Section 199A Deductions by Industry Classification in 2021**

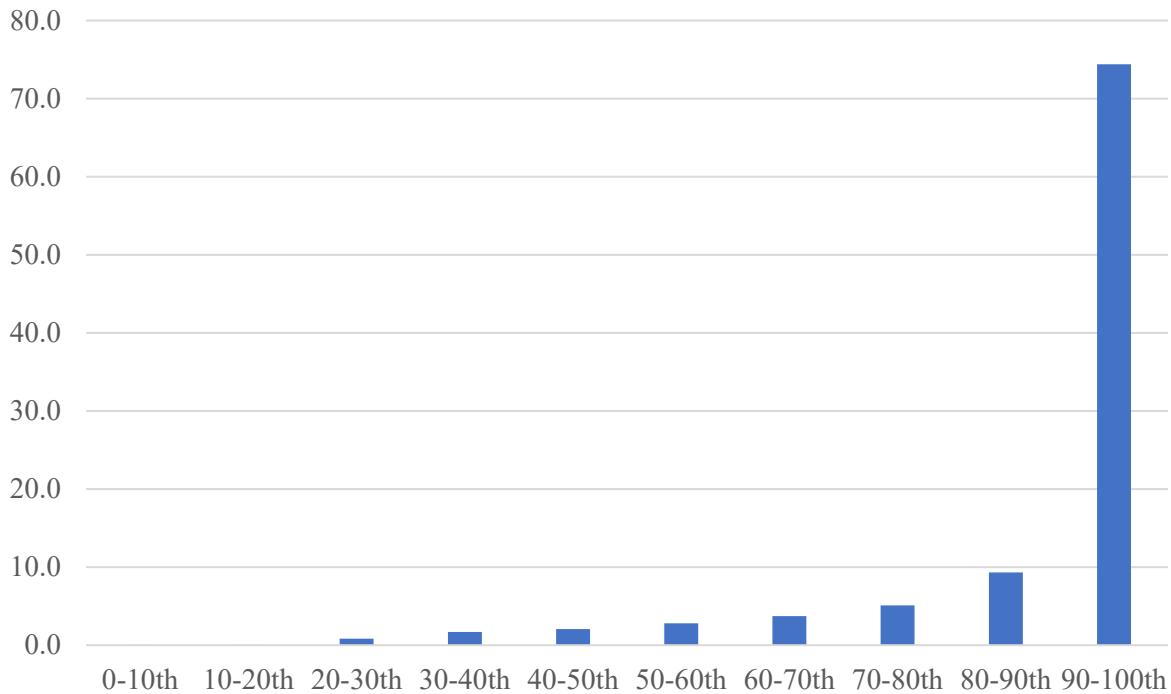


Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Totals calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data. Industry is determined using two-digit North American Industrial Classification System (“NAICS”) codes.

Figure 2 displays the distribution of all section 199A deductions claimed by each taxable income decile in 2021. Those in the top decile account for approximately 74 percent of all dollars deducted under section 199A. In dollar terms, this tenth of the tax filing population accounted for \$153.1 billion of the \$205.8 billion dollars deducted in 2021. Because of the progressive marginal tax rate structure in the United States, where tax units with higher taxable incomes generally have higher marginal tax rates, the benefit of the deduction was skewed towards those with high incomes.<sup>350</sup>

**Figure 2.—Share of Total Section 199A Deductions by Owner Taxable Income Decile, 2021: All Industries**



Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Fractions calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data. The first two deciles comprise taxpayers with \$0 of taxable income. The remaining cut-off values for each decile are approximately \$7,000 for the fourth decile, \$16,000 for the fifth decile, \$26,000 for the sixth decile, \$39,000 for the seventh decile; \$57,000 for the eighth decile; \$84,000 for the ninth decile; \$138,000 for the top decile.

<sup>350</sup> The staff of the Joint Committee on Taxation estimates that taxpayers whose income exceeds \$200,000 incur approximately 61 percent of the combined income, employment, and excise taxes under present law. See Table A-6 of the Joint Committee on Taxation, *Overview of the Federal Tax System as in Effect for 2023* (JCX-9-23), May 11, 2023, p. 39. This document can be found on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

While those tax units in the top taxable income decile account for the highest dollar value of section 199A deductions, Table 12 shows that most tax units claiming the section 199A deduction report taxable income below the section 199A phase-in range (in 2021, \$429,800 for joint filers, \$214,925 for married taxpayers filing separate returns, and \$214,900 for all other returns).<sup>351</sup>

**Table 12.—Section 199A Deductions by Taxable Income in 2021**

<b>Taxable Income</b>	<b>Tax Units Claiming</b>	<b>Deduction Amounts</b>
Above the Phaseout Threshold	2,292,234	\$ 115,103,942,880
Below the Phaseout Threshold	23,632,434	\$ 90,675,785,714
<b>TOTAL</b>	<b>25,924,668</b>	<b>\$ 205,779,728,594</b>

Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Statistics of Income data.

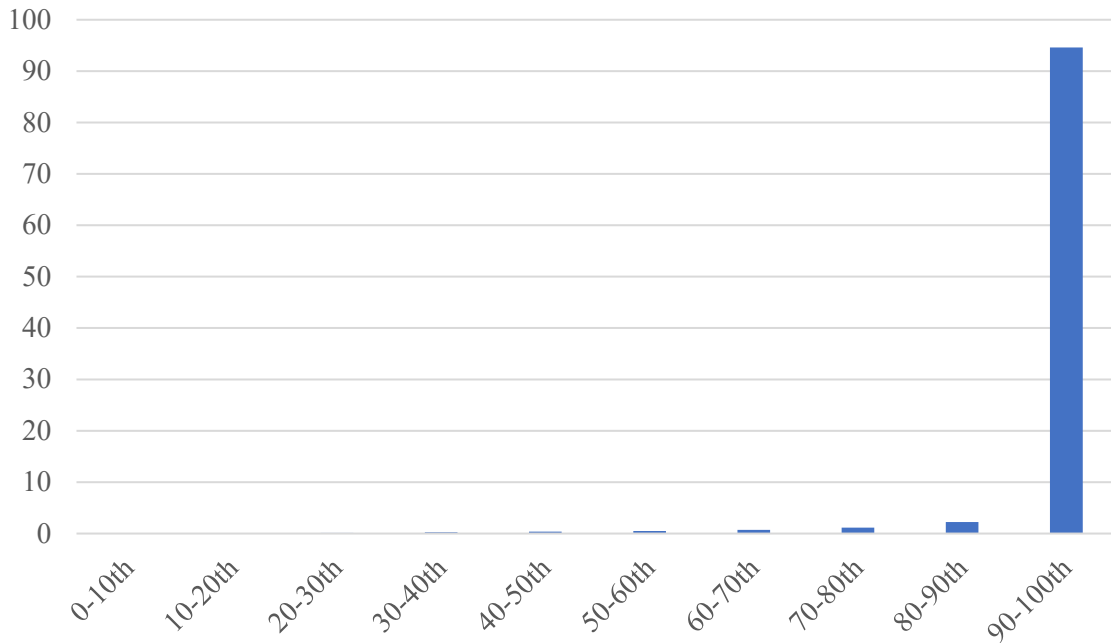
Note: Totals calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data.

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<sup>351</sup> For taxable years beginning in 2021, the threshold amount is \$329,800 for joint filers (\$429,800 for the top of the phase-in range), \$164,925 for married taxpayers filing separate returns (\$214,925 for the top of the phase-in range), and \$164,900 for all other returns (\$214,900 for the top of the phase-in range). Rev. Proc. 2020-45, 2020-46 I.R.B. 1016.

Figure 3 displays the distribution of section 199A deductions claimed by the manufacturing industry by taxable income decile in 2021. Owners of manufacturing entities in the top taxable income decile account for approximately 95 percent of all dollars deducted by the manufacturing industry under section 199A. In dollar terms, this tenth of the tax filing population accounted for \$12.9 billion of the \$13.6 billion dollars deducted by the manufacturing industry under section 199A.

**Figure 3.—Share of Total Section 199A Deductions by Owner Taxable Income Decile, 2021: Manufacturing Industry**



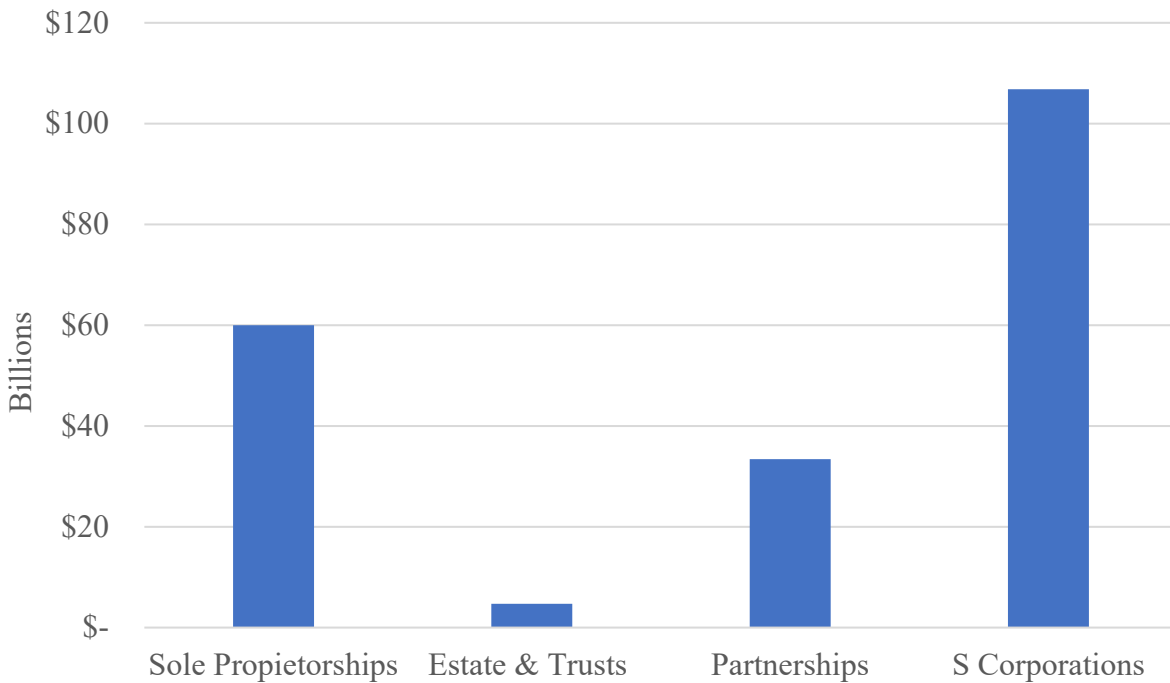
Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Fractions calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data. The first two deciles comprise taxpayers with \$0 of taxable income. The remaining cut-off values for each decile are approximately \$7,000 for the fourth decile, \$16,000 for the fifth decile, \$26,000 for the sixth decile, \$39,000 for the seventh decile; \$57,000 for the eighth decile; \$84,000 for the ninth decile; \$138,000 for the top decile.



Figure 4 presents the total section 199A deduction generated in 2021 broken down by underlying passthrough entity. S corporations generate \$106.8 billion, or 52 percent of all section 199A deductions. Partnerships generate \$33.4 billion, or 16 percent, sole proprietorships generate \$59.9 billion, or 29 percent, and estates and trusts generate \$4.7 billion, or 2 percent of all section 199A deductions. Although S corporations accounted for the highest dollar value of deductions, sole proprietorships had the highest frequency of entity types generating qualified business income in 2021 (16.5 million sole proprietorships, or 75 percent of all passthrough entities).

**Figure 4.—Total Section 199A Deductions by Reporting Entity, 2021:  
All Industries**

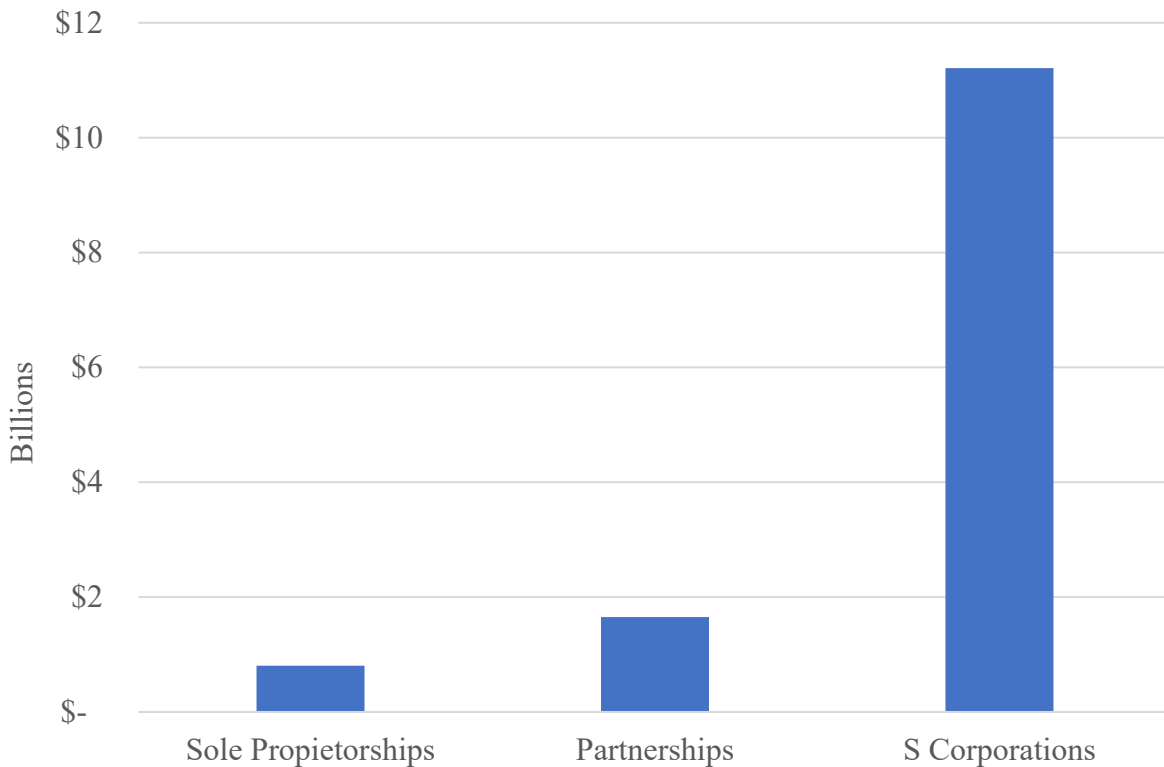


Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Totals calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data.

Figure 5 presents the total section 199A deduction in the manufacturing industry in 2021 broken down by underlying passthrough entity. S corporations generate \$11.2 billion, or 82 percent of all section 199A deductions generated by the manufacturing industry. Partnerships generate \$1.7 billion, or 12 percent, and sole proprietorships generate \$0.8 billion, or almost six percent of all section 199A deductions generated by the manufacturing industry. Although S corporations accounted for the highest dollar value of deductions, sole proprietorships had the highest frequency of entity types generating qualified business income in the manufacturing industry in 2021 (144 thousand, or 53 percent of all passthrough manufacturing entities).

**Figure 5.—Total Section 199A Deductions by Reporting Entity, 2021:  
Manufacturing Industry<sup>352</sup>**



Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Totals calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data.

<sup>352</sup> Estates and trusts are excluded from Figure 5 as they comprise a de minimis share of section 199A deductions in the manufacturing industry.

Figure 6 illustrates the distribution of total section 199A deductions across all industries by entity employee count. The number of employees is not reported on tax returns. Information on employer size was applied to tax returns if the EINs from the tax return of the employer or another EIN belonging to the parent company could be matched to a Form W-2 issued by the employer. If no such match was available, the number of employees was imputed based on wages deducted by the employer.<sup>353</sup>

Figure 6 shows that 55 percent of section 199A deductions were attributable to owners of businesses with one or more employees. These employing entities were mostly S corporations. The remaining 45 percent of section 199A deductions, comprising \$92 billion, were generated by entities without any employees. These entities were largely comprised of sole proprietorships and partnerships. Over 90 percent of sole proprietorships generating section 199A deductions for their owner had no employees.<sup>354</sup> Over 80 percent of partnerships generating section 199A deductions for their owners had no employees. The prevalence of entities with no reported employees may be attributable to several factors, including contract and gig workers that are not counted as employees and sole proprietors that do not pay themselves W-2 wages.<sup>355</sup> In addition, unlike S corporations which are required to pay their shareholder-employees reasonable compensation (generally by means of a Form W-2), partners are not treated as employees, don't receive a Form W-2, and may be characterized as self-employed.<sup>356</sup>

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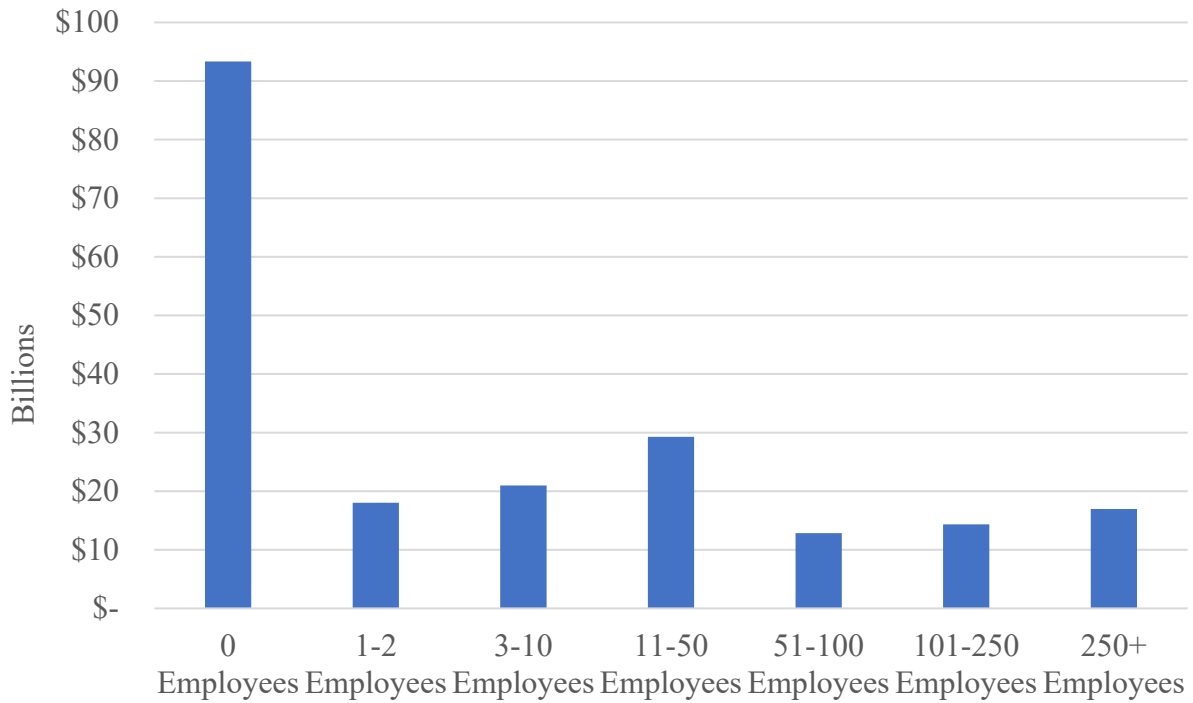
<sup>353</sup> For more information on the process by which the staff of the Joint Committee on Taxation links Form W-2 to entity tax returns, see Joint Committee on Taxation, *Linking Entity Tax Returns and Wage Filings* (JCX-5-22), April 5, 2022. This document is available on the Joint Committee on Taxation website at [www.jct.gov](http://www.jct.gov).

<sup>354</sup> While sole proprietors may not have employees or pay themselves wages on Form W-2, they are subject to OASDI and HI self-employment tax on their net earnings from self-employment. See sec. 1401 and 1402.

<sup>355</sup> *Ibid.*

<sup>356</sup> Similar to sole proprietors, partners pay self-employment tax on their share of partnership trade or business income and certain guaranteed payments.

**Figure 6.—Total Section 199A Deductions by Number of Employees per Entity, 2021: All Industries**

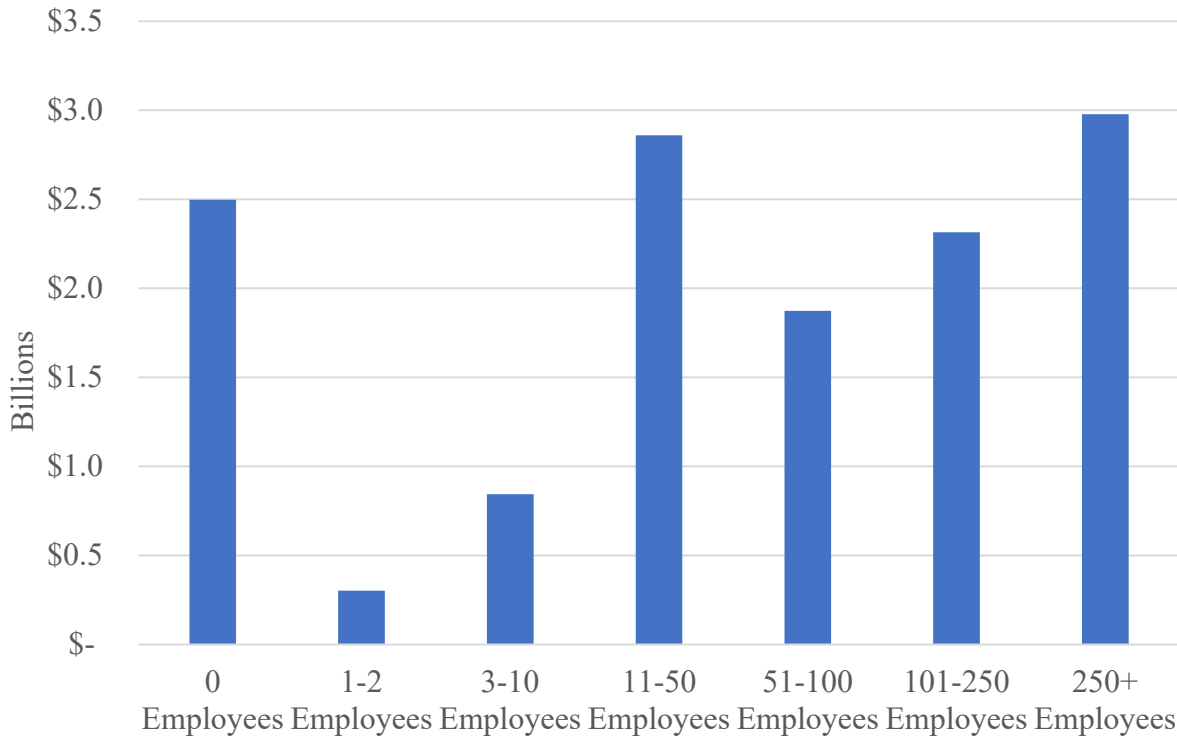


Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Note: Number of employees per entity calculating using the staff of the Joint Committee on Taxation’s bridge connecting employees to employers.

Figure 7 illustrates the distribution of section 199A deductions specifically for the manufacturing industry by entity employee count. Figure 7 shows that 82 percent of total section 199A deductions claimed by the manufacturing industry were attributable to owners with one or more employees. The remaining 18 percent of section 199A deductions claimed by the manufacturing industry, comprising \$2.4 billion, were generated by entities without any employees.

**Figure 7.—Total Section 199A Deductions by Number of Employees per Entity, 2021: Manufacturing Industry**



Source: Staff of the Joint Committee on Taxation calculations from Internal Revenue Service, Compliance Data Warehouse.

Notes: Totals calculated by the staff of the Joint Committee on Taxation using Internal Revenue Service data. Number of employees per entity calculating using the staff of the Joint Committee on Taxation’s bridge connecting employees to employers.

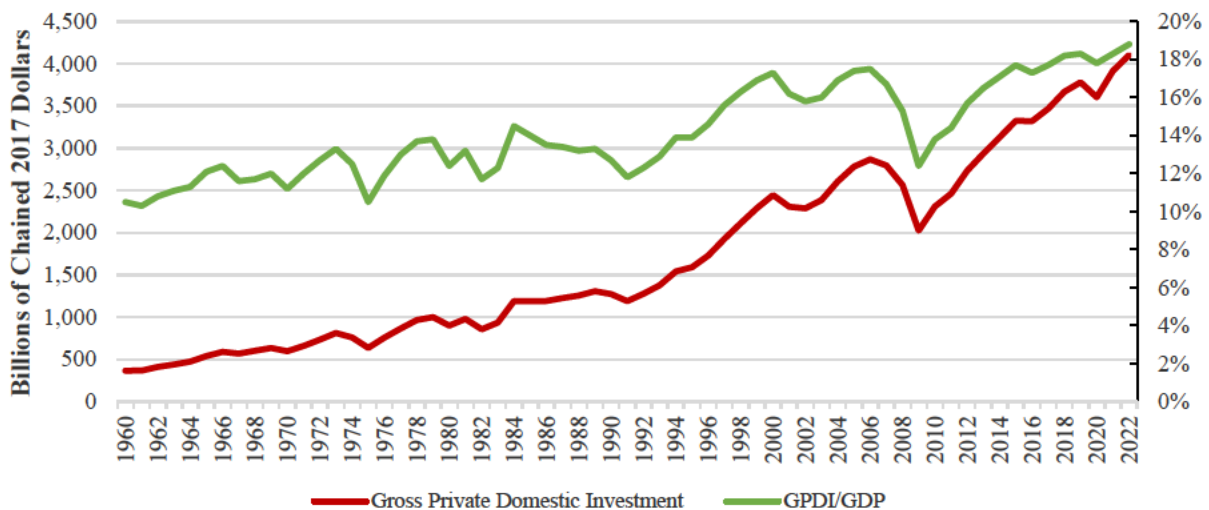
As discussed in Section IIA, the individual income tax structure also affects the returns to capital income. In consequence, passthrough businesses also have a user cost of capital analogous to that of C corporations, based on individual income tax parameters instead of corporate income tax parameters. In particular, the value of an income tax deduction is proportional to an individual’s marginal income tax rate. Therefore, section 199A deductions reduce the user cost of capital for passthrough businesses, which may affect the overall level of investment. Currently the staff of the Joint Committee on Taxation has not found any peer-reviewed economics literature on the overall effects of the section 199A deduction on investment.

## C. Macroeconomic Data

### Investment and GDP

Investment, along with consumption, government expenditures, and net exports, is one of the primary components of gross domestic product (“GDP”). On the left axis, Figure 8 shows the annual amount of real gross private domestic investment in billions of chained 2017 dollars since 1960. On the right axis, Figure 8 shows the share of real GDP attributable to investment. In general, the level of investment rose steadily from the 1960s through the late 1980s. From the trough after the 1990-1991 recession, real investment more than doubled over the next decade, rising from \$1,190 billion in 1991 to \$2,444.9 billion in 2000. In the following decade, the level of investment peaked at \$2,867.9 billion in 2006 before falling over the next three years by almost 30 percent to \$2,025.3 billion in 2009. Most of that decline is attributable to a drop in residential fixed investment (housing). Following that decline, real investment increased by 31 percent over the decade to \$3,780.3 billion in 2019. After a slight dip in 2020 during the year the COVID-19 pandemic was declared, real investment subsequently grew to peak at \$4,102.8 billion in 2022. As a share of GDP, investment fluctuated within a range of 11 to 15 percent from 1960-1996. In subsequent years, the investment share has fluctuated between 16 to 19 percent, except during the Great Recession, in which it dropped as low as 12 percent in 2009.

**Figure 8.—Gross Private Domestic Investment, Levels and Share of GDP, 1960-2022**



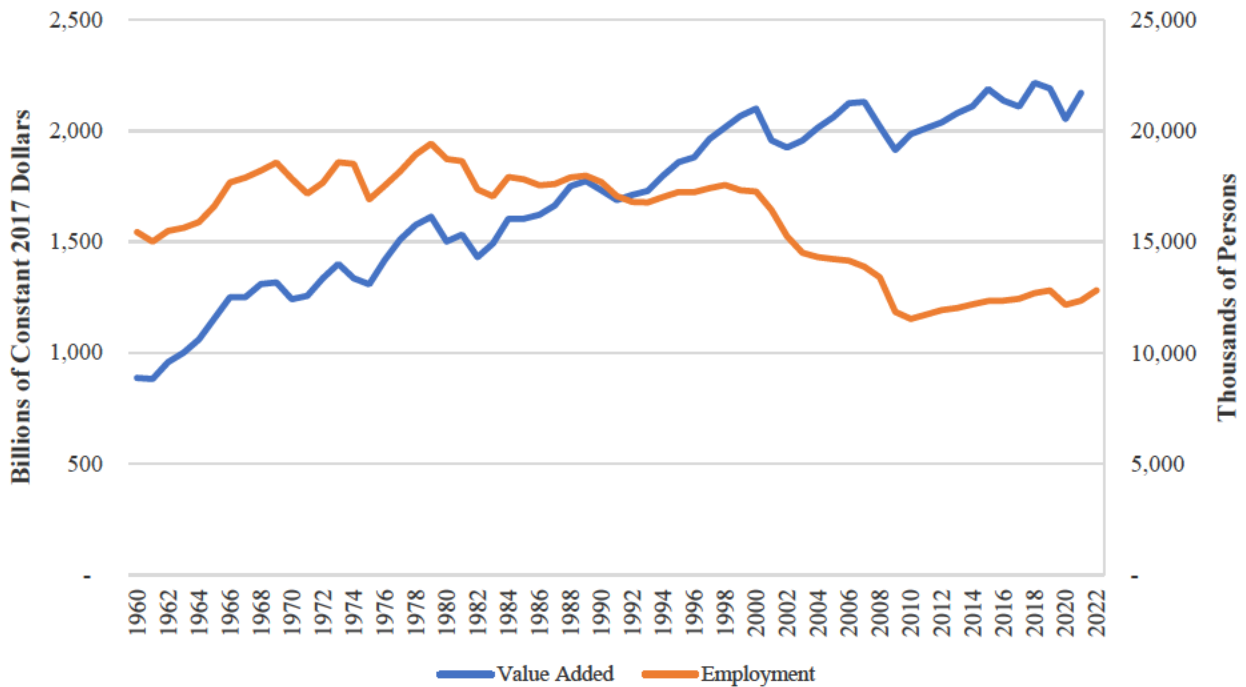
Source: Bureau of Economic Analysis, staff of the Joint Committee on Taxation calculations.

### Manufacturing output and employment

Investment is often associated with the manufacturing sector of the economy. On the left axis, Figure 9 illustrates the amount of real gross value added attributable to manufacturing output in billions of constant 2017 dollars since 1960. On the right axis, Figure 9 shows total manufacturing employment in thousands of persons. Figure 9 illustrates a divergence between a large output growth and a substantial employment decline during the period 1960-2019. From 1960-1980, real value added increased by 69 percent while employment increased by 21 percent

during the same period. Following this period of simultaneous growth, value added increased by 34 percent while total employment slightly decreased by six percent during 1980-1998. Since 1998, value added has fluctuated, yet increased overall by 13 percent after a decline during and following the Great Recession. In contrast, total manufacturing employment has decreased by 27 percent between 1998-2012. The divergence between the output growth and the employment decrease suggests that manufacturing labor productivity has substantially increased in the last two decades.

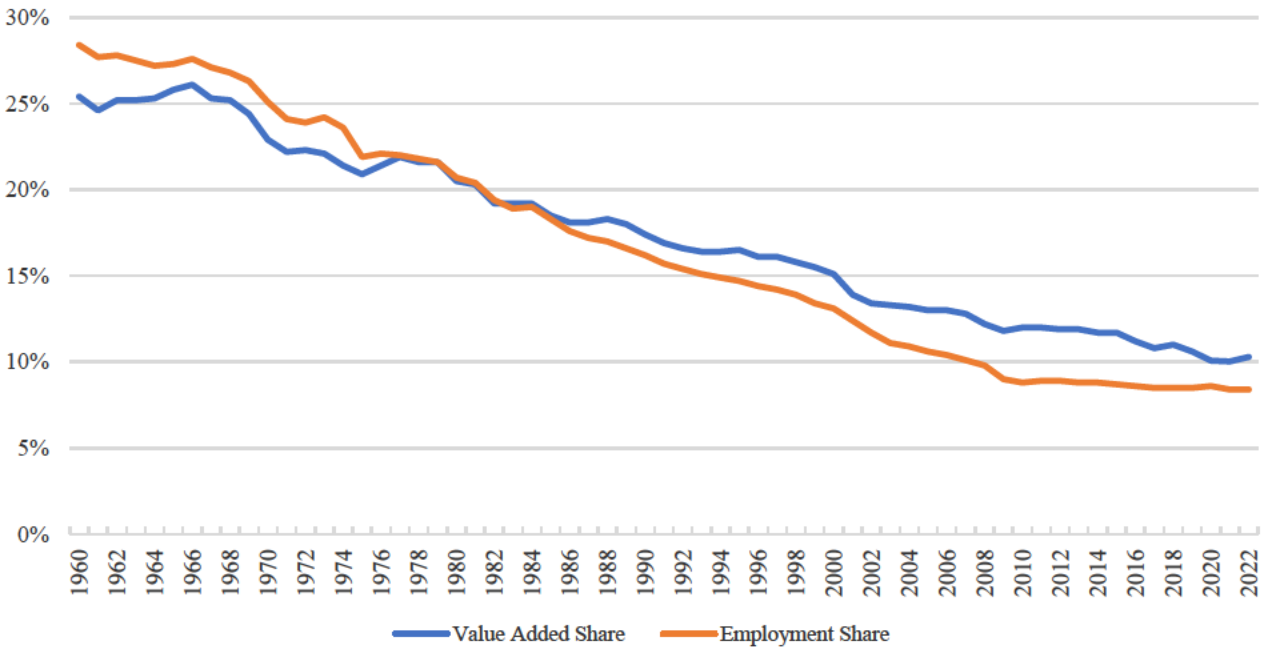
**Figure 9.—Manufacturing Value Added and Employment, Levels, 1960-2022**



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, staff of the Joint Committee on Taxation calculations.

Figure 10 shows the shares of GDP and total employment attributable to the manufacturing sector since 1960. Manufacturing has steadily declined as a share of GDP throughout the period. However, as shown in Figure 8, the share of GDP attributable to investment has remained more stable. This suggests that investment in other sectors has offset any decline in investment in manufacturing as a share of GDP. Furthermore, relative to the change in output, the greater decline in the employment share throughout the period suggests that service-sector jobs have largely replaced manufacturing jobs in the United States.

**Figure 10.-Manufacturing Value Added and Employment, Share of Total U.S. Economy, 1960-2022**



Source: Bureau of Economic Analysis, Bureau of Labor Statistics, staff of the Joint Committee on Taxation calculations.