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2021 Effective Tax Rates on New Investment for  
OECD Countries

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## 2021 Effective Tax Rates on New Investment for OECD Countries

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This paper presents a series of tables and figures describing the effective marginal tax rates (EMTRs) and effective average tax rates (EATRs) for new investment for 37 OECD countries in 2021. These effective tax rates include only corporate-level taxes. The paper also presents a summary of the variables and equations used to calculate 2021 the EMTRs and EATRs. All effective rates are calculated using the methodology described in Devereux and Griffith (2003), Klemm (2006), Evers, et al. (2013), and Spengel, et al. (2019). EATRs are considered to be indicators of the impact of taxation on the discrete choice of where to locate an investment. In contrast, EMTRs are considered to be indicators of the size or scale of an investment in a given location.

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## Introduction

This paper presents a series of tables and figures describing the effective marginal tax rates (EMTRs) and effective average tax rates (EATRs) for new investment for 37 OECD countries for 2021. These effective tax rates include only corporate-level taxes. The paper also presents a summary of the variables and equations used to calculate the 2021 EMTRs and EATRs.

## 2021 OECD Effective Tax Rates for New Investment

Table 1 through Table 4 show 2021 effective marginal tax rates (EMTRs) and effective average tax rates (EATRs) for thirty-seven OECD countries. Table 1 and Table 4 show overall EMTRs and EATRs for each country. The overall EMTRs and EATRs are calculated as the difference between an average cost of capital (across type of asset and type of finance) and an after-tax real rate of return. There are five asset types—machinery, industrial buildings, inventories, acquired patents, and financial assets—and three types of finance—retained earnings, new equity, and debt. Table 2 and Table 3 show EMTRs and EATRs by type of finance for each of the five asset types.

These effective tax rates include only corporate-level taxes and are calculated using the methodology described in Devereux and Griffith (2003), Klemm (2006), Evers, et al. (2013), and Spengel, et al. (2019).<sup>1</sup> EATRs are considered to be indicators of the impact of taxation on the discrete choice of where to locate an investment. In contrast, EMTRs are considered to be indicators of the size or scale of an investment in a given location.

**Effective Marginal Tax Rates.** EMTRs summarize tax incentives for marginal investments, or investments that just break even. They are the hypothetical tax rates showing the total fraction of capital costs, excluding economic depreciation, needed to pay taxes over the lifetime of a marginal investment. If applied to economic income, they summarize the impact of major tax provisions on the investment incentives of businesses and investors. Here those major tax provisions include taxes on corporate income and net wealth (including real estate taxes), differences between tax depreciation and economic depreciation, and deductions for business interest expenses. In general, a lower effective marginal tax rate implies a greater incentive to invest.

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<sup>1</sup> Devereux, Michael P. and Rachel Griffith, 2003, “Evaluating Tax policy for Location Decisions,” *International Tax and Public Finance*, 10, pp. 107-126, available at <https://pages.stern.nyu.edu/~dbackus/Taxes/DevereuxGriffith%20ITPF%2003.pdf> (accessed December 16, 2021). See also Klemm, Alexander, 2006, “Allowances for Corporate Equity in Practice,” IMF Working Paper, WP/06/259, available at <https://www.imf.org/external/pubs/ft/wp/2006/wp06259.pdf> (accessed December 14, 2021); Evers, Lisa, Helen Miller, and Christoph Spengel, 2013, “Intellectual Property Box Regimes: Effective Tax Rates and Tax Policy Considerations,” ZEW Discussion Paper No. 13-070, available at [https://www.ifs.org.uk/docs/EversMillerSpengel2013\\_WP1.pdf](https://www.ifs.org.uk/docs/EversMillerSpengel2013_WP1.pdf) (accessed December 14, 2021); and Spengel, Christoph, Frank Schmidt, Jost Heckemeyer, and Katharina Nicolay, 2019, “Project for the EU Commission, Effective Tax Levels Using the Devereux/Griffith Methodology,” TAXUD/2019/DE/312, Final Report 2019, available at [https://ec.europa.eu/taxation\\_customs/system/files/2020-01/final\\_report\\_2019\\_effective\\_tax\\_levels\\_revised\\_en.pdf](https://ec.europa.eu/taxation_customs/system/files/2020-01/final_report_2019_effective_tax_levels_revised_en.pdf) (accessed December 14, 2021). Klemm incorporates an allowance for corporate equity into the Devereux and Griffith framework (see Appendix I); Evers, et al. (2013) incorporate the expensing of costs associated with an investment in research and development into the Devereux and Griffith framework. Spengel, et al. (2019) use the Devereux and Griffith framework to calculate EMTRs and EATRs through 2019 for European Union member states, North Macedonia, Turkey, Norway, Switzerland, Canada, Japan and the United States.

EMTRs are calculated as

$$(1) \quad EMTR = (\tilde{p} - r)/\tilde{p},$$

where  $\tilde{p}$  is the user cost of capital<sup>2</sup> and  $r$  is the real interest rate. The user cost of capital net of economic depreciation  $\tilde{p}$  is given by

$$(2) \quad \tilde{p} = \frac{(1-A-k)}{(1+\pi)(1-\tau)} \{\rho + \delta(1 + \pi) - \pi\} - \frac{F(1+\rho)}{\gamma(1+\pi)(1-\tau)} - \delta.$$

In equation (2),  $\pi$  is the inflation rate,  $\tau$  is the corporate income tax rate,  $\delta$  is the economic depreciation rate,  $k$  is an investment tax credit, and  $A$  is the present value of the tax benefit from depreciation allowances per unit of investment, discounted at a nominal discount rate  $\rho$ .  $\gamma$  is a tax discrimination variable measuring tax discrimination between new equity and distributions.<sup>3</sup> For effective tax rates calculated using only corporate-level taxes,  $\gamma = 1$  and  $\rho = i = (1 + r)(1 + \pi) - 1 = 0.071$ ,<sup>4</sup> implying that equation (2) simplifies to

$$(2a) \quad \tilde{p} = \frac{(1-A-k)}{(1-\tau)} \{r + \delta\} - \frac{F(1+r)}{(1-\tau)} - \delta.$$

The variable  $F$  in equations (2) and (2a) captures the additional cost of raising external finance. For an investment financed with retained earnings,  $F^{RE} = 0$ ; for an investment financed with new equity,

$$(3a) \quad F^{NE} = -(1 - \gamma)\rho/(1 + \rho);$$

for an investment financed with debt,

$$(3b) \quad F^D = \gamma \{\rho - i(1 - L^c \tau)\}/(1 + \rho).$$

In equation (3a),  $F^{NE} = 0$  if  $\gamma = 1$ . This means that with only corporate-level taxes  $\tilde{p}$  and the EMTR are same for new investments financed with retained earnings and new investments financed new equity. In equation (3b), the variable  $L^c$  summarizes any limits on the deductibility of business interest expenses at the corporate level. If there are no limits,  $L^c = 1$ ; otherwise,  $L^c$  equals the share of business interest expenses that is deductible.

If real estate or net wealth taxes are included in the effective tax rate calculations, equations (2), (3a), and (3b) are modified to include an effective real estate or net wealth tax rate  $w$ . Thus,

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<sup>2</sup> The user cost of capital is the real before-tax rate of return that a marginal investment must earn to recover the cost of the investment, pay taxes, and pay an expected after-tax rate of return on marginal savings.

<sup>3</sup> The tax discrimination variable  $\gamma = (1 - m^d)/(1 - z)$ , where  $m^d$  is the personal income tax rate on dividends and  $z$  is an accruals-equivalent capital gains rate. In the absence of shareholder-level taxes,  $m^d = z = 0$  and  $\gamma = 1$ .

<sup>4</sup> Consistent with Spengel, et al. (2019), we assume a real interest rate  $r = 0.05$  and an inflation rate  $\pi = 0.02$ , giving a nominal interest rate  $i = 0.071$ . If the effective tax rate calculations include shareholder-level taxes,  $\rho = i \left( \frac{1-m^i}{1-z} \right)$ , where  $m^i$  is the personal income tax rate on interest income and  $z$  is an accruals-equivalent capital gains rate.

$$(4a) \quad \tilde{p} = \frac{(1-A-k)}{(1+\pi)(1-\tau)} \{\rho + \delta(1 + \pi) - \pi\} + \frac{w(1+\rho)}{(1+\pi)(1-\tau)} - \frac{F(1+\rho)}{\gamma(1+\pi)(1-\tau)} - \delta,$$

while

$$(4b) \quad F^{NE} = -(1 - \gamma)(1 + w) \rho / (1 + \rho)$$

and

$$(4c) \quad F^D = \gamma (1 + w) \{\rho - i(1 - L^c \tau)\} / (1 + \rho)$$

If expensing of an investment in machinery is allowed,  $F^{NE}$  and  $F^D$  in equations (4b) and (4c) are further modified to include a variable representing the percent  $x^m$  of the basis of the qualifying asset that can be immediately expensed. Thus,

$$(5c) \quad F^{NE} = (1 - x^m \tau) \{-(1 - \gamma)(1 + w) \rho / (1 + \rho)\}$$

and

$$(5b) \quad F^D = (1 - x^m \tau) \{\gamma (1 + w) \{\rho - i(1 - \tau)\} / (1 + \rho)\}.$$

Finally, to calculate the user cost of capital for a new investment in inventories and financial assets, equation (4a) is expanded to include the term  $v\tau\pi$ .

$$(6) \quad \tilde{p} = \frac{(1-A-k)}{(1+\pi)(1-\tau)} \{\rho + \delta(1 + \pi) - \pi\} + \frac{w(1+\rho)}{(1+\pi)(1-\tau)} + \frac{v\tau\pi}{(1+\pi)(1-\tau)} - \frac{F(1+\rho)}{\gamma(1+\pi)(1-\tau)} - \delta$$

The term  $v\tau\pi$  captures the taxation of inventories valued using the first-in-first-out (FIFO) method. It also captures the taxation of financial assets. In general,  $v = 1$  for all financial assets and for all inventories for which the FIFO method is assumed;  $v = 0$  if the last-in-first-out (LIFO) method is assumed for inventories.

*Special Cases.* Additional modifications to  $\tilde{p}$ ,  $F^{NE}$ , and  $F^D$  are needed to accommodate split rate tax systems and Allowance for Corporate Equity (ACE) tax systems.

Estonia and Latvia have split rate tax systems. Under a split-rate tax system, corporate profits are only taxed if they are distributed while retained earnings are not subject to corporate income tax. Thus, the corporate income tax rate on distributed profits  $\tau^d$  equals the combined statutory corporate tax rate shown in column 4 of Table 5 ( $\tau^d = 0.20$  for both Estonia and Latvia), while the corporate income tax rate on retained earnings is zero ( $\tau = 0$ ). Spengel, et al. (2019) use a modified tax discrimination variable

$$(7) \quad \gamma^s = \frac{(1-\tau^d)}{(1-\tau)} \gamma,$$

in equations (4a) through (4c) for split-rate tax systems.

Belgium, Italy, Turkey, Portugal, and Poland have ACE tax systems. Under an ACE tax system, firms can deduct from taxable income an amount equal to “notional” interest on share capital and retained earnings. The notional interest rate is set by the government.

- For Belgium, the notional interest rate for 2021 was 0.000 percent.<sup>5</sup> Before 2018, this notional interest rate applied to a company’s total stock of qualifying equity; from 2018, it applies to a company’s incremental equity, where incremental equity is based on the difference between equity at the end of the current tax year and equity at the end of the fifth preceding year.
- For Italy, the notional interest rate for 2021 is 1.3 percent. Because Italy’s ACE tax system does not apply for the purpose of the Italian regional tax on productive activities (IRAP),  $\tau_{NID}$  in equation (8c) below equals not the combined statutory corporate income tax rate of 27.81 percent shown Table 5 but instead the central government corporate income tax rate of 24 percent.
- For Turkey, the notional interest rate is based on an annual weighted average interest rate applied to Turkish commercial loans provided by banks. This notional interest rate was 13.57 percent for 2016, 17.06 percent for 2017, and 27.04 percent in 2018, although Turkish companies can deduct only 50 percent of the notional interest amount calculated over the cash increases of the paid-in capital of existing capital companies and the cash capital contributions of newly established capital companies.<sup>6</sup> For 2021, a notional interest rate of 10.45 percent is assumed.<sup>7</sup>
- For Portugal, the notional interest rate is 7 percent; it applies to the capital contributed by shareholders in cash upon incorporation or in a subsequent capital increase in cash.<sup>8</sup>
- For Poland, a notional interest rate of 1.1 percent is assumed; it applies to capital contributions and profits retained for reserve capital, provided the capital contributions are retained and the profits not distributed for a minimum of 3 years.<sup>9</sup>

These notional interest deductions are intended to reduce the bias in favor of debt-financed new investment. They are introduced into  $F^{RE}$  and  $F^{NE}$  as follows:

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<sup>5</sup> The International Bureau of Fiscal Documentation (IBFD) *Global Corporate Tax Handbook 2021* gives a notional interest rate for Belgium of 0 percent for 2021. Page 4 of the Explanatory Annex to the OECD Tax Database gives a notional interest rate for Belgium of -0.16 percent for 2021. See OECD Tax Database (2021), Explanatory Annex, Part II. Taxation of Corporate and Capital Income, May, available at <https://www.oecd.org/tax/tax-policy/tax-database/corporate-and-capital-income-tax-explanatory-annex.pdf> (accessed December 14, 2021).

<sup>6</sup> See p. B-33 of Section B of ZEW (2019).

<sup>7</sup> For 2019, ZEW (2019) assumes a notional interest rate of 24.26 percent. For 2019, 2020, and 2021, average interest rates calculated using data downloaded from the Turkish Central Bank—specifically, Weighted Average Interest Rates for Banks' Loans, Commercial (TRY) (<https://evds2.tcmb.gov.tr/index.php?evds/serieMarket> (accessed October 18, 2021, select interest rates, weighted average interest rates for bank loans, commercial (TRY)) suggest a notional interest rate for 2019 of 21.5 percent, for 2020 of 12.8 percent, and for 2021 of 20.9 percent. The notional interest rate for 2019 and 2021 would imply a bias toward equity if assuming a nominal interest rate  $i$  of 7.1 percent.

<sup>8</sup> See IBFD, *Global Corporate Tax Handbook 2021*.

<sup>9</sup> ZEW (2019) indicates that the notional interest rate equals the reference rate from Poland’s National Bank (applicable on the last day of the preceding calendar year) plus 1 percentage point. The reference rate for Poland’s National Bank can be found at <https://www.nbp.pl/homen.aspx?f=/en/statystyka/instrumenty/instrumenty.html> (accessed December 14, 2021). In setting a notional interest rate of 1.5 percent, ZEW (2019) seem to be using the interest rate on reserve requirements, which equaled 0.5 percent in December 2018, not what is labeled the reference rate and equaled 1.5 percent in December 2018. The interest rate on reserve requirements equaled 0.1 percent in December 2020. Thus, for the 2021 OECD effective tax rates, I am using a notional interest rate of 1.1 percent.

$$(8a) \quad F^{RE} = F^{ACE}$$

and

$$(8b) \quad F^{NE} = -(1 - \gamma)(1 + w)\rho/(1 + \rho) + F^{ACE},$$

where

$$(8c) \quad F^{ACE} = \frac{\gamma\tau_{NID}\hat{i}(1+w)}{(1+\rho)}$$

and where  $\hat{i}$  is the notional interest rate and  $\tau_{NID}$  is the difference between the tax rate on profit above the notional interest rate and the tax rate on notional interest. For all but Italy, the tax rate on notional interest is 0 percent; in the case of Italy, it equals the local profit tax rate in Table 5.

In equations (8a), (8b), and (8c),  $\tau_{NID}\hat{i}$  increases the post-tax economic rent of new investments financed with retained earnings and new equity. If  $\hat{i} = i$  (and  $L^c = 1$ ), it fully offsets the tax savings attributable to the deductibility of interest expenses so that  $F^D$  in equation (4c) simplifies to  $F^{ACE}$  and the additional cost of raising external finance is the same for each type of finance.<sup>10</sup> In the case of Portugal (see Table 2) for which  $\hat{i} = 0.07$ , this means that the EMTRs on machinery are nearly identical for new investments financed with new equity (and retained earnings) and new investments financed with debt. If  $\hat{i} > i$ , the notional interest deduction more than offsets the tax savings attributable to the deductibility of interest expenses and the EMTRs for new investments financed with new equity (and retained earnings) are less than the EMTRs for new investments financed with debt.

**Effective Average Tax Rates.** EATRs summarize tax incentives for investments that earn an economic profit, or a pre-tax rate of return  $p$  that is greater than the normal return required on a marginal investment.<sup>11</sup> EATRs begin with a calculation of the tax wedge as the difference between the net present value of an investment's cash flow in the *absence* of tax ( $R^*$ ) and the net present value of an investment's cash flow in the *presence* of tax ( $R$ ), assuming that  $p > \tilde{p}$ . To calculate EATRs, this difference—the net present value of taxes paid—is expressed as a proportion of the net present value of the pre-tax total income stream (net of economic depreciation). Thus, the EATR is calculated as

$$(9) \quad EATR = \frac{R^* - R}{p/(1+r)},$$

where

$$(10) \quad R^* = \frac{p-r}{1+r}$$

and

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<sup>10</sup> This assumes that effective tax rates are calculated using only corporate-level taxes.

<sup>11</sup> Spengel, et al. (2019) assume a pre-tax rate of return of 20 percent. The same is assumed when calculating the EATRs shown in Table 1 through Table 4. See p. B-1 of Section B of Spengel, et al. (2019).

$$(11) \quad R = -\gamma(1 - A - k) - \frac{\gamma}{1+\rho} v\tau\pi - \gamma w \\ + \frac{\gamma}{1+\rho} (p + \delta)(1 + \pi)(1 - \tau) + \frac{\gamma}{1+\rho} (1 - A - k)(1 - \delta)(1 + \pi) + F.$$

Equation (11) is the economic rent of a new investment. Setting  $R = 0$  and solving for  $p$  gives the cost of capital  $\tilde{p}$  in equation (6). Simplifying equation (11) so that  $R$  is expressed as a function of  $\tilde{p}$  in equation (6) in turn gives

$$(12) \quad R = (p - \tilde{p}) \frac{\gamma(1-\tau)(1+\pi)}{(1+\rho)}.$$

Substituting equation (12) into equation (9) allows the EATR to be rewritten as

$$(9a) \quad EATR = \left(\frac{\tilde{p}}{p}\right) EMTR + \left(1 - \frac{\tilde{p}}{p}\right) T,$$

$$\text{where } T = 1 - \frac{\gamma(1+r)(1+\pi)(1-\tau)}{(1+\rho)}.$$

For EATRs calculated using only corporate-level taxes,  $\gamma = 1$ ,  $\rho = i = (1 + r)(1 + \pi) - 1$ , and  $T = \tau$ .

For a marginal investment ( $p = \tilde{p}$ ), equation (9a) implies that the EATR equals the EMTR.<sup>12</sup> For  $p > \tilde{p}$ , equation (9a) implies that the EATR is a weighted average of the corporate income tax rate and the EMTR, with the weight being determined by the degree to which the investment earns a pure profit. Finally, as the pre-tax rate of return  $p$  becomes very large, equation (9a) implies that the EATR converges to  $\tau$  and that the corporate income tax rate, rather than deductions and credits, determines the tax burden on economic profit.

**Tax Parameters.** EMTRs and EATRs are calculated for five types of assets (machinery, industrial buildings, acquired patents, inventories, and financial assets) and for three types of finance (retained earnings, new equity, and debt). In Table 1 through Table 4, they show the burden imposed by corporate-level taxes only. Taxes paid by shareholders and by lenders are not included.

Calculation of the EMTRs and the EATRs includes the combined statutory corporate income tax rate (see Table 5), an effective real estate tax on corporations (see Table 6), and an effective net wealth tax on corporations (see Table 6).<sup>13</sup> The combined statutory corporate income tax rate includes the top central government corporate income tax rate, any surcharges, and a local (sub-central) profit tax rate; it reflects interactions between central taxation and local taxation and

<sup>12</sup> This result can also be obtained from equation (9). Specifically, setting  $p = \tilde{p}$  and  $R = 0$  gives  $EATR = (\tilde{p} - r)/\tilde{p}$ , which is the definition of an EMTR in equation (1).

<sup>13</sup> EMTRs and EATRs in Table 1 through Table 3 include real estate taxes and net wealth taxes on corporations. EMTRs and EATRs in Table 4 exclude these taxes.



allows for the deductibility of local profit taxes for corporate income tax purposes.<sup>14</sup> The same real rate of return, inflation rate, and economic depreciation rates are used for all countries (see Table 9). The country-specific assumptions made about the tax treatment of inventories (Table 7) and the tax depreciation of machinery, industrial buildings, and acquired patents (see Table 8A, Table 8B, and Table 8C) are obtained from several sources, including the Oxford University Centre for Business Taxation (2017),<sup>15</sup> Spengel, et al. (2019),<sup>16</sup> the International Bureau of Fiscal Documentation (IBFD) *Global Corporate Tax Handbook 2021*, the PwC Worldwide Tax Summaries,<sup>17</sup> the Ernst & Young Worldwide Corporate Tax Guide,<sup>18</sup> the Deloitte Taxation and Investment Guides,<sup>19</sup> and various country-specific sources.

**2021 Comparison to OECD and G-7 Countries.** For each OECD country, the overall effective tax rate is a weighted average across different types of assets and different types of finance.<sup>20</sup> Given the relatively small size of some OECD countries, the more appropriate comparison is arguably between the United States and other G-7 countries. The United States is excluded from OECD and G-7 averages when comparing the United States to other OECD and G-7 countries because the United States has such a large impact. The EMTRs and EATRs for the United States are generally higher than effective tax rates for other OECD and G-7 countries if real estate and net wealth taxes on corporations are included (see Table 1 through Table 3).

The comparison of effective tax rates for the United States and other OECD and G-7 countries is more favorable if real estate and net wealth taxes on corporations are excluded (see Table 4). This is because the United States has one of the highest real estate taxes among OECD countries (see Table 6). The United States is also one of only a few OECD countries to impose net wealth taxes (personal property taxes) on machinery and inventories.

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<sup>14</sup> Statutory corporate income tax rates are primarily taken from the OECD Tax Database. See ‘Corporate and capital income taxes’ and then ‘statutory corporate income tax rates’ at <https://www.oecd.org/tax/tax-policy/tax-database/> (accessed December 14, 2021).

<sup>15</sup> Oxford University Centre for Business Taxation, 2017, CBT Tax Database, available at <https://ora.ox.ac.uk/objects/uuid:81f28d9a-fe6e-445b-8d34-a641b573d986> (accessed December 14, 2021).

<sup>16</sup> See Section A of Spengel, et al. (2019).

<sup>17</sup> See <https://www.pwc.com/gx/en/services/tax/worldwide-tax-summaries.html> (accessed December 14, 2021).

<sup>18</sup> See [https://www.ey.com/en\\_gl/tax-guides/worldwide-corporate-tax-guide](https://www.ey.com/en_gl/tax-guides/worldwide-corporate-tax-guide) (accessed May 16, 2022).

<sup>19</sup> See <https://dits.deloitte.com/#TaxGuides> (accessed December 14, 2021).

<sup>20</sup> The overall EMTRs are calculated by taking the difference between an average cost of capital (across type of asset and type of finance) and an after-tax real rate of return. Devereux, et al. (2008) use weights of 55 percent for retained earnings, 10 percent for new equity, and 35 percent for debt. See p. 5 of Devereux, Michael P., Christina Elschner, Dieter Endres, Jost H. Heckemeyer, Michael Overesch, Ulrich Schreiber, and Christoph Spengel, 2008, “Project for the EU Commission,” TAXUD/2005/DE/3 10, Final Report, available at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.353.2752&rep=rep1&type=pdf> (accessed December 14, 2021).

**Table 1. 2021 OECD Overall Effective Tax Rates (in Percent)**

	Combined Statutory Corporate Tax Rate	PDV of Depreciation			Overall Effective Tax Rates (Corporate Level)	
		Machinery	Industrial Buildings	Acquired Patents	EMTRs	EATRs
Australia	30.0	81.5	46.2	52.6	25.4	28.5
Austria	25.0	76.7	39.3	69.9	18.3	23.0
Belgium	25.0	81.8	52.6	94.4	16.9	22.6
Canada	26.2	95.4	60.4	80.5	19.9	24.2
Chile	10.0	60.3	32.9	79.2	15.6	11.7
Colombia	31.7	69.9	32.9	81.8	25.8	29.7
Czech Republic	19.0	75.4	52.3	69.9	14.1	17.6
Denmark	22.0	77.9	46.2	93.4	14.6	19.8
Estonia	20.0	0.0	0.0	0.0	3.4	15.7
Finland	20.0	87.6	49.6	69.9	17.3	19.2
France	28.4	82.8	52.6	81.8	21.3	26.1
Germany	29.9	80.2	38.0	81.8	21.0	27.1
Greece	24.0	69.9	46.2	69.9	21.3	23.2
Hungary	11.1	73.2	22.1	73.2	10.5	10.6
Iceland	20.0	80.9	57.6	81.8	17.7	19.3
Ireland	12.5	74.4	46.2	69.9	14.7	15.1
Israel	23.0	69.9	52.6	74.4	21.8	22.6
Italy	27.8	71.9	44.7	90.3	14.9	23.4
Japan	29.7	75.7	34.3	74.4	37.7	32.9
Korea	27.5	86.4	52.6	76.7	15.3	23.9
Latvia	20.0	0.0	0.0	0.0	7.9	16.7
Lithuania	15.0	84.9	77.9	90.4	10.0	13.6
Luxembourg	24.9	82.0	46.2	81.8	14.7	22.3
Mexico	30.0	69.9	52.6	77.5	23.6	27.9
Netherlands	25.0	76.7	32.9	69.9	19.0	23.1
New Zealand	28.0	69.3	22.0	52.6	27.7	27.9
Norway	22.0	73.8	36.0	69.9	18.0	20.8
Poland	19.0	69.9	32.9	81.8	12.2	17.1
Portugal	31.5	83.4	52.6	69.9	-12.8	21.7
Slovak Republic	21.0	82.1	52.6	81.8	13.7	18.9
Slovenia	19.0	81.8	38.0	69.9	13.7	17.5
Spain	25.0	73.5	38.0	52.6	23.5	24.5
Sweden <sup>a</sup>	20.1	80.9	46.2	80.9	13.7	17.9
Switzerland	19.7	80.9	53.0	84.9	11.6	17.4
Turkey	20.0	81.5	46.2	67.4	-18.5	11.9
United Kingdom	19.0	97.5	38.2	69.9	19.2	19.1
United States	25.8	93.6	33.5	60.3	26.3	25.9
OECD Average	25.7	84.2	40.0	70.2	21.5	24.6
OECD Average Excl. U.S.	25.7	79.4	43.3	75.3	19.1	24.0
G-7 Average	26.6	88.1	37.8	69.5	25.3	26.2
G-7 Average Excl. U.S.	27.4	82.4	42.2	79.0	24.2	26.5

Source: U.S. Department of the Treasury, Office of Tax Analysis

Notes: PDV = present discounted value; EMTRs = effective marginal tax rates; EATRs = effective average tax rates. The EMTRs and EATRs shown **include** real estate taxes and net wealth taxes on corporations.

a. The corporate income tax rate for Sweden takes account of the profit periodization reserve (tax allocation reserve), which allows companies to allocate to a reserve up to 25percent of net profits.

**Table 2. 2021 OECD Effective Marginal Tax Rates (in Percent) at the Corporate Level**

	Machinery			Industrial Buildings		
	New Equity and Retained Earnings	Debt	Overall Average	New Equity and Retained Earnings	Debt	Overall Average
Australia	26.3	-31.6	12.9	27.2	-28.7	14.1
Austria	25.9	-13.0	15.7	27.6	-9.2	17.9
Belgium	21.5	-23.6	10.0	40.7	17.8	34.3
Canada	6.8	-49.1	-7.3	42.3	18.8	35.8
Chile	22.2	11.5	18.8	25.0	15.1	21.8
Colombia	38.6	-1.8	28.7	37.8	-4.1	27.6
Czech Republic	20.6	-7.2	12.7	16.3	-15.2	7.4
Denmark	21.9	-12.6	12.5	31.3	5.7	24.1
Estonia <sup>a</sup>	25.8	0.0	3.4	25.8	0.0	3.4
Finland	12.3	-26.3	1.8	33.8	13.8	28.0
France	23.5	-32.4	10.2	38.0	5.2	29.4
Germany	27.6	-16.7	16.5	34.6	0.3	25.6
Greece	30.0	-1.2	21.5	30.2	-0.9	21.8
Hungary	13.1	0.9	9.2	19.0	8.5	15.6
Iceland	17.7	-15.3	8.5	37.2	19.2	31.9
Ireland	14.2	-3.5	8.7	23.2	9.2	18.8
Israel	28.8	-1.2	20.6	36.5	13.3	29.9
Italy	28.7	2.4	21.3	28.7	2.1	21.2
Japan	43.1	14.0	35.5	44.7	17.4	37.4
Korea	18.8	-42.0	4.5	24.7	-25.1	12.5
Latvia <sup>a</sup>	25.8	0.0	3.4	37.7	20.1	22.3
Lithuania	10.7	-14.4	3.3	27.4	11.5	22.5
Luxembourg	15.3	-39.1	1.9	30.9	-1.8	22.1
Mexico	36.7	-1.7	27.1	29.7	-21.3	17.6
Netherlands	25.9	-13.0	15.7	29.9	-4.0	20.9
New Zealand	35.0	-0.4	25.8	33.0	-5.2	23.2
Norway	25.0	-6.4	16.3	24.5	-7.3	15.8
Poland	21.1	-0.9	14.6	24.5	4.6	18.6
Portugal	-40.5	-42.3	-41.1	-26.9	-28.4	-27.4
Slovak Republic	17.6	-18.5	7.8	22.6	-8.6	14.0
Slovenia	16.1	-15.5	7.2	19.1	-10.0	10.8
Spain	28.4	-7.2	19.0	27.4	-9.6	17.7
Sweden	17.8	-15.4	8.6	22.9	-5.7	14.9
Switzerland	19.8	-15.0	10.3	18.2	-18.3	8.3
Turkey	-43.8	-16.3	-32.8	-33.9	-9.7	-24.3
United Kingdom	2.6	-32.1	-7.3	43.6	30.5	39.6
United States	22.2	-8.2	13.7	44.1	25.6	38.8
OECD Average	21.2	-12.1	12.6	34.3	9.5	27.7
OECD Average Excl. U.S.	20.7	-14.2	12.0	29.2	1.2	22.1
G-7 Average	23.8	-11.1	14.5	41.6	18.9	35.3
G-7 Average Excl. U.S.	25.5	-14.1	15.3	39.1	11.9	31.8

Source: U.S. Department of the Treasury, Office of Tax Analysis

**Table 2. 2021 OECD Effective Marginal Tax Rates (in Percent) at the Corporate Level, Cont'd.**

	Acquired Patents			Inventories		
	New Equity and Retained Earnings	Debt	Overall Average	New Equity and Retained Earnings	Debt	Overall Average
Australia	45.3	18.8	38.2	37.4	0.0	27.9
Austria	29.0	-5.9	19.7	25.0	-15.0	14.6
Belgium	7.1	-63.4	-9.4	25.0	-15.0	14.6
Canada	22.0	-26.8	9.8	33.0	0.0	24.3
Chile	15.4	2.6	11.3	19.5	8.0	15.8
Colombia	25.6	-43.2	10.5	39.2	0.0	29.6
Czech Republic	22.3	-4.1	14.7	24.6	0.0	17.5
Denmark	7.1	-46.3	-6.5	28.2	0.0	20.3
Estonia <sup>a</sup>	25.8	0.0	3.4	25.8	0.0	3.4
Finland	23.4	-4.4	15.6	25.8	0.0	18.4
France	22.7	-34.8	9.2	35.6	0.0	26.4
Germany	24.1	-26.3	11.7	29.9	-10.8	19.6
Greece	27.9	-5.6	18.9	30.5	0.0	22.2
Hungary	12.0	-0.5	8.0	14.8	3.2	11.1
Iceland	15.6	-19.4	6.0	25.8	0.0	18.4
Ireland	14.9	-2.5	9.5	16.6	0.0	11.4
Israel	23.8	-11.6	14.3	29.4	0.0	21.3
Italy	6.3	-45.0	-6.9	23.1	-8.4	14.4
Japan	42.4	12.3	34.5	46.9	22.4	40.3
Korea	26.4	-20.3	14.9	27.5	-17.5	16.3
Latvia <sup>a</sup>	25.8	0.0	3.4	25.8	0.0	3.4
Lithuania	6.5	-21.4	-1.7	15.0	-7.4	8.3
Luxembourg	19.8	-27.6	7.8	24.9	-15.0	14.6
Mexico	28.2	-25.6	15.6	37.4	0.0	27.9
Netherlands	29.0	-5.9	19.7	25.0	-15.0	14.6
New Zealand	42.9	17.3	36.0	35.1	0.0	26.0
Norway	25.7	-5.0	17.2	28.2	0.0	20.3
Poland	11.0	-18.0	2.6	15.5	-10.1	8.0
Portugal	-7.3	-8.4	-7.7	0.9	0.0	0.6
Slovak Republic	16.5	-20.9	6.3	27.0	0.0	19.4
Slovenia	22.3	-4.1	14.7	24.6	0.0	17.5
Spain	39.2	15.2	32.5	31.7	0.0	23.2
Sweden	16.4	-18.3	6.8	25.2	-1.1	17.7
Switzerland	15.7	-23.6	5.2	22.0	-10.6	13.0
Turkey	-22.0	-1.6	-14.0	-19.7	0.0	-12.0
United Kingdom	22.3	-4.1	14.7	24.6	0.0	17.5
United States	35.9	10.8	28.9	28.9	-3.4	20.2
OECD Average	27.2	-5.4	18.8	28.4	-1.8	20.4
OECD Average Excl. U.S.	22.7	-13.8	13.6	28.1	-1.0	20.5
G-7 Average	31.0	-2.7	22.2	31.3	-0.5	22.8
G-7 Average Excl. U.S.	26.0	-16.6	15.2	33.8	2.3	25.5

Source: U.S. Department of the Treasury, Office of Tax Analysis

**Table 2. 2021 OECD Effective Marginal Tax Rates (in Percent) at the Corporate Level, Cont'd.**

	Financial Assets		
	New Equity and Retained Earnings	Debt	Overall Average
Australia	37.4	0.0	27.9
Austria	31.7	0.0	23.2
Belgium	31.7	0.0	23.2
Canada	33.0	0.0	24.3
Chile	13.4	0.0	9.1
Colombia	39.2	0.0	29.6
Czech Republic	24.6	0.0	17.5
Denmark	25.2	-5.9	16.7
Estonia <sup>a</sup>	25.8	0.0	3.4
Finland	25.8	0.0	18.4
France	35.6	0.0	26.4
Germany	37.3	6.5	29.1
Greece	30.5	0.0	22.2
Hungary	12.1	0.0	8.2
Iceland	25.8	0.0	18.4
Ireland	31.7	0.0	23.2
Israel	29.4	0.0	21.3
Italy	26.4	0.0	18.9
Japan	46.9	22.4	40.3
Korea	34.6	0.0	25.6
Latvia <sup>a</sup>	25.8	0.0	3.4
Lithuania	19.7	0.0	13.8
Luxembourg	31.6	0.0	23.1
Mexico	37.4	0.0	27.9
Netherlands	31.7	0.0	23.2
New Zealand	35.1	0.0	26.0
Norway	28.2	0.0	20.3
Poland	21.6	0.0	15.2
Portugal	0.9	0.0	0.6
Slovak Republic	27.0	0.0	19.4
Slovenia	24.6	0.0	17.5
Spain	31.7	0.0	23.2
Sweden	26.5	0.0	19.0
Switzerland	27.4	0.0	19.7
Turkey	-19.7	0.0	-12.0
United Kingdom	24.6	0.0	17.5
United States	32.6	4.3	24.8
OECD Average	31.0	3.8	23.7
OECD Average Excl. U.S.	30.2	3.6	23.2
G-7 Average	34.2	5.7	26.4
G-7 Average Excl. U.S.	35.9	7.2	28.1

Source: U.S. Department of the Treasury, Office of Tax Analysis

Notes: EMTRs = effective marginal tax rates. The EMTRs shown **include** real estate taxes and net wealth taxes on corporations.

a. Estonia (since 2000) and Latvia (since 2018) have split-rate tax systems. In Estonia and Latvia, retained earnings are not taxed while profits distributed as dividends are taxed at the statutory corporate income tax rate of 20 percent (see Table 1). In the absence of real estate and net wealth taxes, this means that the EMTR on retained earnings is 0 percent while the EMTR on new equity is 25.8 percent. For all other OECD countries, the EMTR on retained earnings equals the EMTR on new equity.

**Table 3. 2021 OECD Effective Average Tax Rates (in Percent) at the Corporate Level**

	Machinery			Industrial Buildings		
	New Equity and Retained Earnings	Debt	Overall Average	New Equity and Retained Earnings	Debt	Overall Average
Australia	28.7	18.3	25.1	29.0	18.6	25.4
Austria	25.3	16.6	22.3	25.9	17.2	22.8
Belgium	23.9	15.2	20.8	31.6	22.8	28.5
Canada	21.0	13.5	18.4	33.1	23.9	29.9
Chile	13.9	10.4	12.7	15.0	11.5	13.8
Colombia	34.5	23.5	30.6	34.2	23.1	30.3
Czech Republic	19.5	12.9	17.2	18.2	11.6	15.9
Denmark	22.0	14.3	19.3	25.4	17.7	22.7
Estonia <sup>a</sup>	22.0	15.0	15.7	22.0	15.0	15.7
Finland	17.8	10.8	15.4	25.2	18.2	22.8
France	26.8	16.9	23.3	32.3	22.3	28.8
Germany	29.1	19.9	25.9	31.7	22.5	28.5
Greece	26.1	17.8	23.2	26.2	17.8	23.3
Hungary	11.7	8.5	10.6	13.5	10.4	12.4
Iceland	19.3	12.3	16.9	26.8	19.8	24.4
Ireland	13.0	8.6	11.5	16.0	11.6	14.4
Israel	25.0	17.0	22.2	28.3	20.2	25.5
Italy	27.9	21.3	25.6	27.9	21.3	25.5
Japan	35.6	25.2	32.0	36.5	26.0	32.8
Korea	24.8	15.3	21.5	26.6	17.0	23.2
Latvia <sup>a</sup>	22.0	15.0	15.7	27.1	20.0	20.7
Lithuania	13.8	8.6	12.0	19.3	14.0	17.4
Luxembourg	23.7	15.1	20.7	27.1	18.4	24.0
Mexico	32.7	22.2	29.0	29.9	19.4	26.2
Netherlands	25.3	16.6	22.3	26.8	18.0	23.7
New Zealand	30.7	20.9	27.3	29.8	20.1	26.4
Norway	23.0	15.3	20.3	22.8	15.2	20.2
Poland	19.7	14.1	17.7	20.8	15.2	18.9
Portugal	18.7	18.5	18.6	20.0	19.8	19.9
Slovak Republic	20.0	12.7	17.4	21.5	14.2	19.0
Slovenia	18.1	11.5	15.8	19.0	12.4	16.7
Spain	26.2	17.5	23.1	25.8	17.1	22.8
Sweden	19.0	12.1	16.6	20.6	13.7	18.2
Switzerland	19.7	12.2	17.1	19.2	11.7	16.6
Turkey	8.9	12.2	10.1	9.9	13.2	11.1
United Kingdom	14.8	9.3	12.9	29.9	23.1	27.5
United States	24.6	17.9	22.3	34.0	25.7	31.1
OECD Average	24.9	17.5	22.3	30.0	22.0	27.2
OECD Average Excl. U.S.	25.1	17.4	22.4	28.0	20.1	25.2
G-7 Average	26.0	18.3	23.3	33.2	24.6	30.2
G-7 Average Excl. U.S.	27.4	18.8	24.4	32.4	23.4	29.3

Source: U.S. Department of the Treasury, Office of Tax Analysis

**Table 3. 2021 OECD Effective Average Tax Rates (in Percent) at the Corporate Level, Cont'd.**

	Acquired Patents			Inventories		
	New Equity and Retained Earnings	Debt	Overall Average	New Equity and Retained Earnings	Debt	Overall Average
Australia	37.0	26.5	33.3	32.9	22.5	29.3
Austria	26.4	17.7	23.4	25.0	16.3	22.0
Belgium	20.2	11.5	17.1	25.0	16.3	22.0
Canada	24.8	15.7	21.6	28.7	19.6	25.5
Chile	11.6	8.1	10.4	12.9	9.5	11.7
Colombia	29.6	18.6	25.8	34.8	23.8	30.9
Czech Republic	20.1	13.5	17.8	20.9	14.3	18.5
Denmark	18.0	10.3	15.3	24.2	16.5	21.5
Estonia <sup>a</sup>	22.0	15.0	15.7	22.0	15.0	15.7
Finland	21.1	14.2	18.7	22.0	15.0	19.5
France	26.6	16.7	23.1	31.2	21.3	27.7
Germany	28.0	18.8	24.8	29.9	20.7	26.7
Greece	25.3	17.0	22.4	26.4	18.0	23.4
Hungary	11.3	8.2	10.2	12.2	9.0	11.1
Iceland	18.7	11.7	16.3	22.0	15.0	19.5
Ireland	13.2	8.9	11.7	13.7	9.4	12.2
Israel	23.3	15.2	20.5	25.3	17.3	22.5
Italy	21.8	15.3	19.5	26.0	19.5	23.7
Japan	35.2	24.8	31.6	37.8	27.4	34.2
Korea	27.1	17.6	23.8	27.5	17.9	24.2
Latvia <sup>a</sup>	22.0	15.0	15.7	22.0	15.0	15.7
Lithuania	12.7	7.5	10.9	15.0	9.8	13.2
Luxembourg	23.3	14.6	20.3	24.9	16.3	21.9
Mexico	29.4	18.9	25.7	32.9	22.5	29.3
Netherlands	26.4	17.7	23.4	25.0	16.3	22.0
New Zealand	34.5	24.8	31.1	30.7	21.0	27.3
Norway	23.2	15.6	20.6	24.2	16.5	21.5
Poland	16.7	11.2	14.8	18.0	12.4	16.0
Portugal	22.5	22.3	22.4	23.8	23.6	23.7
Slovak Republic	19.6	12.3	17.1	23.1	15.8	20.5
Slovenia	20.1	13.5	17.8	20.9	14.3	18.5
Spain	30.8	22.1	27.8	27.5	18.8	24.4
Sweden	18.6	11.7	16.2	20.9	14.1	18.5
Switzerland	18.5	10.9	15.9	20.4	12.8	17.8
Turkey	11.4	14.7	12.5	11.7	15.0	12.9
United Kingdom	20.1	13.5	17.8	20.9	14.3	18.5
United States	29.7	21.6	26.9	26.9	18.7	24.0
OECD Average	26.9	18.9	24.1	27.1	19.1	24.3
OECD Average Excl. U.S.	25.4	17.5	22.7	27.2	19.3	24.4
G-7 Average	28.6	20.1	25.6	28.5	20.0	25.5
G-7 Average Excl. U.S.	27.4	18.5	24.3	30.2	21.3	27.1

Source: U.S. Department of the Treasury, Office of Tax Analysis

**Table 3. 2021 OECD Effective Average Tax Rates (in Percent) at the Corporate Level, Cont'd.**

	Financial Assets		
	New Equity and Retained Earnings	Debt	Overall Average
Australia	32.9	22.5	29.3
Austria	27.5	18.8	24.4
Belgium	27.5	18.8	24.4
Canada	28.7	19.6	25.5
Chile	11.0	7.5	9.8
Colombia	34.8	23.8	30.9
Czech Republic	20.9	14.3	18.5
Denmark	23.1	15.4	20.4
Estonia <sup>a</sup>	22.0	15.0	15.7
Finland	22.0	15.0	19.5
France	31.2	21.3	27.7
Germany	32.9	23.7	29.7
Greece	26.4	18.0	23.4
Hungary	9.9	6.8	8.8
Iceland	22.0	15.0	19.5
Ireland	27.5	23.1	25.9
Israel	25.3	17.3	22.5
Italy	24.8	18.0	22.4
Japan	37.8	27.4	34.2
Korea	30.2	20.6	26.8
Latvia <sup>a</sup>	22.0	15.0	15.7
Lithuania	16.5	11.3	14.6
Luxembourg	27.4	18.7	24.3
Mexico	32.9	22.5	29.3
Netherlands	27.5	18.8	24.4
New Zealand	30.7	21.0	27.3
Norway	24.2	16.5	21.5
Poland	19.8	14.3	17.9
Portugal	23.8	23.6	23.7
Slovak Republic	23.1	15.8	20.5
Slovenia	20.9	14.3	18.5
Spain	27.5	18.8	24.4
Sweden	22.6	15.8	20.2
Switzerland	22.4	14.8	19.7
Turkey	11.7	15.0	12.9
United Kingdom	20.9	14.3	18.5
United States	28.3	20.1	25.4
OECD Average	28.1	20.1	25.3
OECD Average Excl. U.S.	27.9	20.0	25.2
G-7 Average	29.5	20.9	26.5
G-7 Average Excl. U.S.	30.7	21.8	27.6

Source: U.S. Department of the Treasury, Office of Tax Analysis

Notes: EATRs = effective average tax rates. The EATRs shown **include** real estate taxes and net wealth taxes on corporations.

a. Estonia (since 2000) and Latvia (since 2018) have split-rate tax systems. In Estonia and Latvia, retained earnings are not taxed while profits distributed as dividends are taxed at the statutory corporate income tax rate of 20 percent (see Table 1). In the absence of real estate and net wealth taxes, this means that the EATR on retained earnings is 15 percent while the EATR on new equity is 22 percent. For all other OECD countries, the EATR on retained earnings equals the EATR on new equity.



**Table 4. 2021 OECD Overall Effective Tax Rates (in Percent)**

	Combined Statutory Corporate Tax Rate	PDV of Depreciation			Overall Effective Tax Rates (Corporate Level)	
		Machinery	Industrial Buildings	Acquired Patents	EMTRs	EATRs
Australia	30.0	81.5	46.2	52.6	25.4	28.5
Austria	25.0	76.7	39.3	69.9	17.6	22.8
Belgium	25.0	81.8	52.6	94.4	10.6	21.0
Canada	26.2	95.4	60.4	80.5	12.8	22.3
Chile	10.0	60.3	32.9	79.2	9.7	9.9
Colombia	31.7	69.9	32.9	81.8	24.7	29.4
Czech Republic	19.0	75.4	52.3	69.9	13.9	17.5
Denmark	22.0	77.9	46.2	93.4	11.4	19.0
Estonia	20.0	0.0	0.0	0.0	3.4	15.7
Finland	20.0	87.6	49.6	69.9	12.8	17.9
France	28.4	82.8	52.6	81.8	17.3	25.0
Germany	29.9	80.2	38.0	81.8	19.8	26.8
Greece	24.0	69.9	46.2	69.9	19.3	22.6
Hungary	11.1	73.2	22.1	73.2	9.2	10.3
Iceland	20.0	80.9	57.6	81.8	11.7	17.6
Ireland	12.5	74.4	46.2	69.9	12.1	14.4
Israel	23.0	69.9	52.6	74.4	17.4	21.3
Italy	27.8	71.9	44.7	90.3	12.8	22.9
Japan	29.7	75.7	34.3	74.4	29.5	29.6
Korea	27.5	86.4	52.6	76.7	14.8	23.8
Latvia	20.0	0.0	0.0	0.0	3.4	15.7
Lithuania	15.0	84.9	77.9	90.4	4.7	12.3
Luxembourg	24.9	82.0	46.2	81.8	12.3	21.7
Mexico	30.0	69.9	52.6	77.5	22.5	27.6
Netherlands	25.0	76.7	32.9	69.9	18.1	22.9
New Zealand	28.0	69.3	22.0	52.6	27.7	27.9
Norway	22.0	73.8	36.0	69.9	17.6	20.7
Poland	19.0	69.9	32.9	81.8	10.3	16.6
Portugal	31.5	83.4	52.6	69.9	-14.5	21.5
Slovak Republic	21.0	82.1	52.6	81.8	12.4	18.5
Slovenia	19.0	81.8	38.0	69.9	13.7	17.5
Spain	25.0	73.5	38.0	52.6	23.0	24.3
Sweden <sup>a</sup>	20.1	80.9	46.2	80.9	12.5	17.6
Switzerland	19.7	80.9	53.0	84.9	10.5	17.1
Turkey	20.0	81.5	46.2	67.4	-19.6	11.7
United Kingdom	19.0	97.5	38.2	69.9	11.5	16.9
United States	25.8	93.6	33.5	60.3	18.3	23.5
OECD Average	25.7	84.2	40.0	70.2	16.7	23.1
OECD Average Excl. U.S.	25.7	79.4	43.3	75.3	15.8	23.0
G-7 Average	26.6	88.1	37.8	69.5	18.7	24.2
G-7 Average Excl. U.S.	27.4	82.4	42.2	79.0	19.2	24.9

Source: U.S. Department of the Treasury, Office of Tax Analysis

See notes to Table 1. The EMTRs and EATRs shown **exclude** real estate taxes and net wealth taxes on corporations.

**Table 5. 2021 Components of Combined Statutory Corporate Tax Rates**

	<b>Central Government Corporate Tax Rate</b>	<b>Surcharge</b>	<b>Local Profit Tax Rate</b>	<b>Combined Statutory Corporate Tax Rate</b>
Australia	0.3000	0.0000	0.0000	0.3000
Austria	0.2500	0.0000	0.0000	0.2500
Belgium	0.2500	0.0000	0.0000	0.2500
Canada	0.1500	0.0000	0.1115	0.2615
Chile	0.1000	0.0000	0.0000	0.1000
Colombia	0.3100	0.0000	0.0100	0.3169
Czech Republic	0.1900	0.0000	0.0000	0.1900
Denmark	0.2200	0.0000	0.0000	0.2200
Estonia <sup>a</sup>	0.2000	0.0000	0.0000	0.2000
Finland	0.2000	0.0000	0.0000	0.2000
France	0.2750	0.0330	0.0000	0.2841
Germany <sup>b</sup>	0.1500	0.0550	0.1411	0.2994
Greece	0.2400	0.0000	0.0000	0.2400
Hungary <sup>c,k</sup>	0.0900	0.0000	0.0230	0.1109
Iceland	0.2000	0.0000	0.0000	0.2000
Ireland <sup>k</sup>	0.1250	0.0000	0.0000	0.1250
Israel	0.2300	0.0000	0.0000	0.2300
Italy <sup>d,k</sup>	0.2400	0.0000	0.0381	0.2781
Japan <sup>e</sup>	0.2320	0.1730	0.0347	0.2974
Korea <sup>f</sup>	0.2500	0.0000	0.0250	0.2750
Latvia <sup>a</sup>	0.2000	0.0000	0.0000	0.2000
Lithuania	0.1500	0.0000	0.0000	0.1500
Luxembourg <sup>g</sup>	0.1700	0.0700	0.0675	0.2494
Mexico	0.3000	0.0000	0.0000	0.3000
Netherlands	0.2500	0.0000	0.0000	0.2500
New Zealand	0.2800	0.0000	0.0000	0.2800
Norway	0.2200	0.0000	0.0000	0.2200
Poland	0.1900	0.0000	0.0000	0.1900
Portugal	0.2100	0.0900	0.0150	0.3150
Slovak Republic	0.2100	0.0000	0.0000	0.2100
Slovenia	0.1900	0.0000	0.0000	0.1900
Spain	0.2500	0.0000	0.0000	0.2500
Sweden <sup>h</sup>	0.2060	0.0000	0.0000	0.2060
Switzerland <sup>i</sup>	0.0850	0.0000	0.1287	0.1970
Turkey	0.2000	0.0000	0.0000	0.2000
United Kingdom	0.1900	0.0000	0.0000	0.1900
United States <sup>j</sup>	0.2100	0.0000	0.0602	0.2575

- a. Estonia and Latvia do not tax retained profits. Corporate profits are only taxed if they are distributed.
- b. Since 2008, the local profit tax (the municipal trade tax) is not deductible for trade tax purposes or for federal corporate income tax purposes. In addition, 25 percent of all interest payments exceeding a threshold of EUR 200,000 are not deductible from the local trade tax base.
- c. Hungary has a local business tax with a maximum rate of 2 percent and an innovation tax with a rate of 0.3 percent. Both local taxes are deductible for corporate income tax purposes. However, the tax base for the local tax is not reduced by interest paid.
- d. The combined statutory corporate tax rate for Italy includes a 3.9 percent regional tax on production activities (IRAP), 10 percent of which is deductible for corporate income tax purposes. Interest expenses are not deductible when calculating the tax base for the IRAP.
- e. Japan's surcharge and local profit tax rate include the prefectural inhabitant tax, the municipal inhabitant tax, and the local enterprise tax.
- f. The maximum local income tax rate for corporations is 2.5 percent. The local income tax is not deductible for corporate income tax purposes.
- g. The municipal business tax in the city of Luxembourg is 6.75 percent, or a basic rate of 3 percent multiplied by a coefficient of 2.25. The municipal business tax is not deductible for corporate income tax purposes.
- h. Sweden imposes a flat 20.6 percent corporate income tax. However, companies can create a profit periodization reserve by allocating to a reserve up to 25 percent of net profits. The reserve must be dissolved (and added to taxable income) no later than the sixth year after the allocation has been made. Since 2005, notional income from the reserve is taxable. The notional taxable income is calculated by multiplying the total amount of the allocations to the reserve fund by 72 percent of the interest rate on long-term government bonds as of the end of November in the previous tax year. The profit periodization reserve reduces Sweden's combined corporate tax rate to 20.11 percent.
- i. The local profits tax rate is obtained by multiplying a basic rate of 7.0 percent for the canton of Zurich by the sum of a cantonal coefficient (1.00), a municipal coefficient (1.19), and a parish coefficient (0.10) for the city of Zurich.
- j. The Tax Cuts and Jobs Act (TCJA) limits interest deductions to 30 percent of adjusted taxable income for corporate debt. From 2018 through 2021, adjusted taxable income is calculated as earnings before interest, tax, depreciation, and amortization (EBITDA); beginning in 2022, it is computed as earnings before interest and tax (EBIT). Using the nonpublic IRS corporate study tax file, the average C-corporation disallowance share (or the share of interest paid that cannot be deducted) for all industries is calculated to be 9.2 percent between 2018 and 2021 and 15.2 percent between 2022 and 2027.
- k. The combined corporate statutory tax rate does not apply to financial assets in Hungary, Ireland, and Italy. In Hungary and Italy, only the central government corporate tax rate applies. In Ireland, nontrading income is subject to a 25 percent corporate income tax rate.

**Table 6. 2021 Real Estate and Net Wealth Tax Rates for Corporations**

	Real Estate Tax		Effective <sup>a</sup> Net Wealth Tax			
	Nominal	Effective <sup>a</sup>	Machinery	Buildings	Patents	Inventories
Australia	0.0000	0.0000				
Austria	0.0025	0.0019				
Belgium	0.0205	0.0154				
Canada	0.0241	0.0178				
Chile <sup>b</sup>	0.0060	0.0054	0.0038	0.0038	0.0038	0.0038
Colombia	0.0050	0.0034				
Czech Republic	0.0007	0.0005				
Denmark	0.0100	0.0078				
Estonia	0.0000	0.0000				
Finland	0.0147	0.0117				
France <sup>c</sup>	0.0054	0.0039	0.0000	0.0066	0.0000	0.0000
Germany	0.0047	0.0033				
Greece	0.0058	0.0057				
Hungary	0.0037	0.0033				
Iceland	0.0160	0.0160				
Ireland	0.0084	0.0074				
Israel	0.0164	0.0126				
Italy	0.0058	0.0049				
Japan <sup>d</sup>	0.0170	0.0119	0.0098	0.0000	0.0098	0.0098
Korea	0.0018	0.0013				
Latvia	0.0150	0.0120				
Lithuania	0.0150	0.0128				
Luxembourg	0.0075	0.0056				
Mexico	0.0044	0.0031				
Netherlands	0.0031	0.0023				
New Zealand	0.0000	0.0000				
Norway	0.0016	0.0012				
Poland	0.0058	0.0047				
Portugal	0.0032	0.0022				
Slovak Republic	0.0042	0.0033				
Slovenia	0.0000	0.0000				
Spain	0.0020	0.0015				
Sweden	0.0038	0.0030				
Switzerland <sup>e</sup>	0.0000	0.0000	0.0014	0.0014	0.0014	0.0014
Turkey	0.0020	0.0016				
United Kingdom	0.0256	0.0207				
United States <sup>f</sup>	0.0198	0.0147	0.0066	0.0000	0.0000	0.0021

Sources: International Bureau of Fiscal Documentation *Global Corporate Tax Handbook 2021*, PwC Worldwide Tax Summaries, Spengel et al. (2019), various country-specific sources. Net wealth taxes are not assumed to apply to financial assets.

- a. The effective tax rate allows for the deductibility of real estate taxes and other net wealth taxes from corporate income taxes. See the country notes explaining calculation of the real estate tax rates.
- b. The net wealth tax shown for Chile is an annual municipal license fee on capital registered on the balance sheet. The rate varies by municipality and location within the municipality. It ranges from 0.25 percent to 0.5 percent. An average tax rate of 0.375 percent is assumed.
- c. The net wealth tax shown for France, the Cotisation Fonciere des Entreprises (CFE), is assumed to apply only to buildings. The CFE is based on the rental value of assets that are subject to the real estate tax. The CFE tax rate is determined by the municipality. The 2021 CFE tax rate for Paris is 16.52 percent. The rental value of buildings is assumed to amount to 8 percent of acquisition costs. PwC Worldwide Tax Summaries indicates that for industrial buildings the taxable base for CFE is reduced by 30 percent. Hence, the nominal other profit tax rate for France is obtained by taking 70 percent of the product of 16.52 percent and 8 percent.
- d. The municipal fixed asset tax in Japan consists of a standard tax rate of 1.4 percent and a city planning tax of 0.3 percent. The standard tax rate is assumed to apply to machinery, inventories, patents, and financial assets. The city planning tax component of the municipal fixed assets tax is not assumed to apply to machinery, inventories, patents, and financial assets.
- e. In Zurich, the net worth tax has a basic rate of 0.075 percent. This basic rate is multiplied by the sum of a cantonal coefficient (1.00) for Zurich, a municipal coefficient (1.19) for the city of Zurich, and a parish coefficient (0.10).
- f. The net wealth tax shown for the United States is a weighted-average of state and local personal property tax rates. State and local personal property tax rates apply to machinery and inventories.

### Country Notes:

*Australia:* Australia has no real estate tax.

*Austria:* The real estate tax is levied at a basic federal rate of 0.2 percent. This basic federal rate is multiplied by a municipal coefficient that can reach a maximum of 500 percent. The real estate tax is levied on the assessed value of the property; the assessed value is assumed to equal 25 percent of market value.

*Belgium:* The nominal real estate tax rate is the sum of an “immovable withholding tax” rate of 1.25 percent (for the Brussels regions) and a municipal surcharge of 3000 multiplied by the withholding tax rate. The real estate tax is levied on the rental value of the property. Spengel, et al. (2019) assume that the rental value is 5.3 percent of the market value.

*Canada:* The nominal real estate tax rate is a population-weighted average of nonresidential (commercial) property tax rates in 8 major Canadian cities—Calgary, Edmonton, Vancouver, Winnipeg, Ottawa, Toronto, Montreal, and Halifax.

*Chile:* The general real estate tax rate is 1.2 percent for urban property. The taxable base is the cadastral value. The cadastral value is assumed to equal 50 percent of market value.

*Colombia:* Property tax is a municipal tax and deductible for corporate income tax purposes. PwC Worldwide Tax Summaries indicates that property tax rates depend on the nature and usage of the property and range between 0.5 percent and 1.2 percent.

*Czech Republic:* The ground floor area of a building determines the taxable base. For flats and nonresidential spaces, the area in square meters is multiplied by a coefficient of 1.2. Tax rates depend on the use of the building. For business premises, the rate is CZK 10 per square meter. The nominal real estate tax rate is multiplied by a coefficient of 4.5 for buildings located in Prague. Prague may increase the coefficient up to a maximum of 5.

*Denmark:* The municipal real estate tax on buildings used for business purposes may not exceed 1 percent.

*Estonia:* Estonia has no real estate tax.

*Finland:* The nominal real estate tax is the mean of a minimum real estate tax rate of 0.93 percent and a maximum real estate tax rate of 2.0 percent.

*France:* The real estate tax (Taxe Fonciere sur les Proprietes Baties) is calculated by applying city/department property tax rates to half the notional rental value of a commercial property as defined by a local land registry. The tax rate is determined annually by local authorities. The rental value of industrial buildings is assumed to amount to 8 percent of the acquisition cost. Property tax rates are for Paris, which has lower local property tax rates than do some other French cities. For 2021, the local property tax rate in Paris is a combination of a city (ville) rate of 8.37 percent and a department rate of 5.13 percent. Hence, the nominal real estate tax equals  $100 \cdot (0.08 \cdot 0.5 \cdot (0.0513 + 0.0837))$ .

*Germany:* The real property tax (Grundsteuer) is calculated by multiplying a real property tax rate of 0.35 percent and a municipal multiplier (Hebesatz) by the assessed value of a real property. Federal fiscal authorities establish the assessed value, which Spengel, et al. (2019) assume amounts to 25 percent of the acquisition cost, and the basic

federal rate. Municipalities determine the multiplier. The nominal real estate tax rate is calculated using a population-weighted average multiplier for German cities with a population over 20,000.

*Greece:* The nominal real estate tax is the sum of a supplementary unified annual real estate ownership tax and a local real estate tax rate. The supplementary tax is imposed on the total value of the real estate property at a rate of 0.55 percent for legal entities. The local real estate tax rate varies between 0.025 percent and 0.035 percent; a mean of 0.03 percent is assumed.

*Hungary:* The real estate tax is either a maximum of HUF 1951/m<sup>2</sup> or a maximum of 3.6 percent of the fair market value of the building.

*Iceland:* Municipalities levy a property tax based on the assessed value of immovable property. The commercial (C-tax) property tax in Reykjavik is 1.60 percent of assessed value. The assessed value is assumed to equal market value.

*Ireland:* The local tax on immovable property (the commercial “rates”) is calculated by multiplying a rateable valuation by an annual rate of valuation. The annual rate of valuation is set annually by the local government. For Dublin, the annual rate of valuation (the rate multiplier) is 0.268 for 2021. Spengel, et al. (2019) assume a rateable valuation (the estimate of the annual rental value of the property) for Dublin of 63 percent. They also assume that the annual rental value amounts to 5 percent of the acquisition cost.

*Israel:* A municipal tax (Arnona) is levied annually on buildings by local authorities in Israel. For 2021, the nominal real estate tax is calculated using an average of three rates for industrial plants set by the municipal government in Jerusalem. The three rates, expressed as NIS (shekels) per square meter, are 144.04, 106.86, and 86.73; the average of the three rates is 112.5.

*Italy:* In January 2012, the unified municipal tax (IMU) replaced the municipal tax on immovable property (ICI). The basic IMU rate is 0.86 percent. However, local authorities can raise the IMU rate to a maximum of 1.06 percent or lower the IMU rate to a minimum of 0 percent. The taxable value for the IMU is the cadastral value, or the standard value attributed to a property in the official register. The cadastral value is assumed to equal 68 percent of the acquisition cost. Sixty percent of the IMU is deductible for income tax purposes.

*Japan:* The municipal fixed assets tax consists of a standard tax rate of 1.4 percent and a city planning tax of 0.3 percent. The tax base corresponds to the market value.

*Korea:* Real estate taxes in Korea vary by property type and location. Buildings are taxed at rates between 0.25 percent and 4 percent. Factories are assumed to be taxed at a rate of 0.25 percent. However, if the factory is in a designated metropolitan area and is new or expanded, the property tax rate is 1.25 percent, or 5 times the standard rate, for 5 years. Property tax is levied on 70 percent of the current standard value of land and buildings, which is assumed to correspond to acquisition cost.

*Latvia:* Real estate tax is levied on immovable property such as land and buildings at a basic rate of 1.5 percent of the cadastral value. Spengel, et al. (2019) assume that the cadastral value equals the acquisition cost.

*Lithuania:* An annual property tax on immovable property ranges from 0.5 percent to 3 percent of the taxable value. The nominal real estate tax is 1.5 percent assuming that the taxable value is 50 percent of the acquisition cost (Spengel, et al. (2019)).

*Luxembourg:* The real estate tax is based on the unitary value of real estate. The basic tax rate is between 0.7 percent and 1 percent. It is multiplied by a municipal coefficient that equals 750 percent for Luxembourg City. The municipal coefficient for Luxembourg City is applied to a basic rate of 1 percent. Spengel, et al. (2019) assume that the unitary value is 10 percent of the acquisition cost.

*Mexico:* The real estate tax is levied by the Federal District and all states at rates that range from 0.05 percent to 3 percent. An average value is calculated for the Federal District. The taxable base for the property tax is the cadastral value, which is assumed to equal 50 percent of market value.

*Netherlands:* The real estate tax rate for immovable nonresidential property in Amsterdam is 0.31 percent. The real estate tax is deductible for corporate income tax purposes. The basis for the real estate tax is the property value.

*New Zealand:* New Zealand has no real estate tax.

*Norway:* Immovable property is subject to a municipal real estate tax. The taxable base is the assessed value, which is between 20 percent and 50 percent of market value. The real estate tax is levied at fixed rates ranging from 0.2 percent to 0.7 percent. The nominal real estate tax is calculated assuming an average fixed rate of 0.45 percent and an average assessed value of 35 percent.

*Poland:* The taxable base for the real estate tax is the floor area of the building. For buildings used for business, the maximum tax rate for 2019 is PLN 23.47/m<sup>2</sup>.

*Portugal:* The tax base for the municipal real estate tax (IMI) is 80 percent to 90 percent of the market value of a property. IMI rates are 0.3 percent to 0.45 percent for urban buildings valued according to the IMI code. An average market value of 85 percent and an average IMI rate of 0.38 percent are assumed.

*Slovak Republic:* The immovable property tax is based on the area of the real estate, its location, and its type. In the city of Bratislava, real estate taxes are divided into four bands. The real estate tax for industrial buildings and

warehouses is EUR 5.75/m<sup>2</sup> for band 1, EUR 6/m<sup>2</sup> for band 2, EUR 6.5/m<sup>2</sup> for band 3, and EUR 7/m<sup>2</sup> for band 4. The real estate tax for buildings used for other business activities is EUR 7/m<sup>2</sup> for band 1, EUR 7.5/m<sup>2</sup> for band 2, EUR 8.5 EUR/m<sup>2</sup> for band 3, and 9 EUR/m<sup>2</sup> for band 4. An average of real estate taxes for industrial buildings and other buildings is used.

*Slovenia:* Slovenia has no real estate tax.

*Spain:* For 2021, the real estate tax is levied by municipalities at a general rate of 0.4 percent for urban property. The taxable base is the cadastral value, which in Spengel, et al. (2019) is assumed to equal 50 percent of the acquisition cost.

*Sweden:* A national real estate tax is levied on all immovable commercial and industrial property. The tax rate is 1 percent for commercial premises and 0.5 percent for industrial property. Spengel (2019), et al. assume that the taxable base equals 75 percent of the acquisition cost.

*Switzerland:* Zurich has no real estate tax on immovable property.

*Turkey:* The real estate tax for buildings is 0.2 percent.

*United Kingdom:* Local municipal taxes are levied on the occupiers of business property by reference to a deemed annual rental value (the rateable value) determined by the Valuation Office Agency of HM Revenue & Customs. Spengel, et al. (2019) assume that the rateable value amounts to 5 percent of the acquisition cost. It is multiplied by the “rate in pound.” The rate in the pound (also called the multiplier) is set by the Communities and Local Government. Between revaluations (every 5 years), the rate in the pound adjusts annually by the rate of inflation. In 2021, it is 51.2 percent.

*United States:* The Minnesota Center for Fiscal Excellence and the Lincoln Institute of Land Policy annually publish a *50-State Property Tax Comparison Study* that includes average effective commercial property tax rates and industrial property tax rates for all 50 states and the District of Columbia. (The June 2021 report is available at [https://www.lincolninst.edu/sites/default/files/pubfiles/50-state-property-tax-comparison-for-2020-full\\_0.pdf](https://www.lincolninst.edu/sites/default/files/pubfiles/50-state-property-tax-comparison-for-2020-full_0.pdf), accessed December 14, 2021.) Real and personal property tax rates and net tax amounts from Table 3a and Table 4a of the June 2021 report are combined with municipal data on statutory property tax rates and the taxable base to obtain average effective property tax rates for commercial buildings, industrial buildings, machinery, and inventories in the largest urban areas in each state plus the District of Columbia.

**Table 7. 2021 Tax Treatment of Inventories**

	<b>Proportion of Inventories Valued by FIFO</b>
Australia	1.0000
Austria	0.0000
Belgium	0.0000
Canada	1.0000
Chile	1.0000
Colombia	1.0000
Czech Republic	1.0000
Denmark	1.0000
Estonia <sup>a</sup>	---
Finland	1.0000
France	1.0000
Germany	0.0000
Greece	1.0000
Hungary	1.0000
Iceland	1.0000
Ireland	1.0000
Israel	1.0000
Italy	0.0000
Japan	1.0000
Korea	0.0000
Latvia <sup>a</sup>	---
Lithuania	0.0000
Luxembourg	0.0000
Mexico	1.0000
Netherlands	0.0000
New Zealand	1.0000
Norway	1.0000
Poland	0.0000
Portugal	1.0000
Slovak Republic	1.0000
Slovenia	1.0000
Spain	1.0000
Sweden	1.0000
Switzerland	0.0000
Turkey	1.0000
United Kingdom	1.0000
United States	0.0000

Sources: International Bureau of Fiscal Documentation *Global Corporate Tax Handbook 2021*, PwC Worldwide Tax Summaries, and Ernst & Young Worldwide Corporate Tax Guide.

Notes: FIFO = first-in-first-out; LIFO = last-in-first-out. A value of 0 indicates that 100 percent of inventories are valued by LIFO accounting methods. A value of 1 indicates that 100 percent of inventories are valued by FIFO accounting methods.

a. Estonia and Latvia tax distributed profits instead of corporate income.



**Table 8A. 2021 Tax Depreciation for Machinery**

	<b>Kind of Allowance</b>	<b>Acceleration Factor<sup>c</sup></b>	<b>Allowance Rate (in Percent)</b>	<b>Length of Period (in Years)</b>	<b>Optimal Switching Time (in Years)</b>
Australia	DBSL	2.00	28.57 (DB) 8.68 (SL)	7.00	4.00
Austria	SL		14.29	7.00	
Belgium	SL		20.00	5.00	
Canada <sup>a,b</sup>	DB		50.00	ufd	
Chile	SL		6.67	15.00	
Colombia	SL		10.00	10.00	
Czech Republic <sup>d</sup>	DB		10.00	10.00	
Denmark	DB		25.00	ufd	
Estonia <sup>c</sup>	---	---	---	---	---
Finland <sup>b</sup>	DB		50.00	ufd	
France	DBSL	2.25	32.14 (DB) 7.07 (SL)	7.00	4.00
Germany <sup>b</sup>	DBSL	1.75	25.00 10.55	7.00	3.00
Greece	SL		10.00	10.00	
Hungary	SL		50.00	2.00	
Iceland	DB		30.00	ufd	
Ireland	SL		12.50	8.00	
Israel	SL		10.00	10.00	
Italy	SL		6.25 12.50 6.25	1.00 7.00 1.00	
Japan	DBSL	2.00	20.00 (DB) 6.55 (SL)	10.00	5.00
Korea	DB		45.10	ufd	
Latvia <sup>c</sup>	---	---	---	---	---
Lithuania	DB		40.00	ufd	
Luxembourg	DBSL	2.10	30.00 (DB) 8.00 (SL)	7.00	4.00
Mexico	SL		10.00	10.00	
Netherlands	SL		14.29	7.00	
New Zealand	DB		16.00	ufd	
Norway	DB		20.00	ufd	
Poland	SL		10.00	10.00	
Portugal	DB		35.71	ufd	
Slovak Republic <sup>d</sup>	DB		16.67	6.00	
Slovenia	SL		20.00	5.00	

**Table 8A. 2021 Tax Depreciation for Machinery, Cont'd.**

	Kind of Allowance	Acceleration Factor <sup>c</sup>	Allowance Rate (in Percent)	Length of Period (in Years)	Optimal Switching Time (in Years)
Spain	SL		12.00	8.00	
			4.00	1.00	
Sweden	DB		30.00	ufd	
Switzerland	DB		30.00	ufd	
Turkey	DBSL	2.00	28.57 (DB)	7.00	4.00
			8.68 (SL)		
United Kingdom <sup>b</sup>	DB		18.00	ufd	
United States <sup>a,b</sup>	DBSL	2.00	28.57 (DB)	7.00	4.00
			8.92 (SL)		
			4.46 (SL) <sup>f</sup>		

Sources: Spengel, et al. (2019), the Oxford University Centre for Business Taxation (2017), International Bureau of Fiscal Documentation *Global Corporate Tax Handbook 2021*, PwC Worldwide Tax Summaries, and Ernst & Young Worldwide Corporate Tax Guide.

Notes: SL = straight line; DB = declining balance; DBSL = declining balance with a switch to straight line; ufd = until fully depreciated; EMTRs = effective marginal tax rates; EATRs = effective average tax rates.

a. Depreciation is reduced by half in the first year (half-year convention).

b. For 2021, temporary stimulus measures are included for Germany, Finland, Canada, the United States, and the United Kingdom. Germany temporarily reintroduced the declining-balance method with enhanced depreciation rates for movable assets acquired after December 31, 2019 and before January 1, 2022; the enhanced depreciation rates are up to 2.5 times higher than the currently applicable depreciation rates, up to a maximum of 25 percent. For tax years 2020 through 2023, Finland increased the rate of annual depreciation for any new machinery and equipment from 25 percent to 50 percent. In Canada, businesses can immediately expense 100 percent of qualifying assets (machinery and equipment used to manufacture goods) in the year they become available for use. One-hundred percent expensing is phased out beginning in 2024. In the United States, a first-year, bonus depreciation deduction is allowed for qualifying property (primarily machinery and equipment). For 2021, the bonus depreciation rate is 100 percent. The United Kingdom has introduced a “super-deduction” capital allowance that offers 130 percent first-year relief on qualifying new plant and machinery assets between April 2021 and March 2023. For Canada, the United States, and the United Kingdom, the calculation of the EMTRs and EATRs treats immediate expensing/bonus depreciation as elective. We assume that only roughly 70 percent (and not 100 percent) of qualified property placed in service in 2021 is expensed. This 70 percent is based on an average bonus take-up rate calculated using U.S. tax data.

c. For those countries where machinery can be depreciated using the DBSL method, the DB depreciation rate shown is obtained by dividing the acceleration factor by the length of period (in years) shown.

d. The Czech Republic and the Slovak Republic use either the SL method or an accelerated depreciation method. This accelerated method is a DB method that uses the same periods as the SL method. In the Czech Republic, assets are divided into 6 categories based on useful life. Machinery and equipment used in specified industrial processes are in category 3 and have a useful life of 10 years. Buildings other than office buildings, hotels, and shopping malls are in category 5 and have a useful life of 30 years. In the Slovak Republic, assets are also divided into 6 categories based on useful life. Machinery and equipment are in category 2 and have a useful life of 6 years. Certain buildings are in category 5 and have a useful life of 20 years. From 2015, accelerated depreciation is applicable only to assets in categories 2 and 3.

e. Estonia and Latvia tax distributed profits instead of corporate income.

f. Machinery is depreciated at an allowance rate of 8.92 percent in years 5 through 7. The remaining balance is depreciated at an allowance rate of 4.46 percent in a final half year.

**Table 8B. 2021 Tax Depreciation for Industrial Buildings**

	Kind of Allowance	Allowance Rate (in Percent)	Length of Period (in Years)
Australia	SL	4.00	25
Austria <sup>a</sup>	SL	2.50	40.00
Belgium	SL	5.00	20.00
Canada <sup>b</sup>	DB	10.00	ufd
Chile	SL	2.50	40.00
Colombia	SL	2.50	40.00
Czech Republic <sup>c</sup>	DB	3.33	30.00
Denmark	SL	4.00	25.00
Estonia <sup>d</sup>	---	---	---
Finland	DB	7.00	ufd
France	SL	5.00	20.00
Germany	SL	3.00	33.33
Greece	SL	4.00	25.00
Hungary	SL	2.00	50.00
Iceland	SL	6.00	16.67
Ireland	SL	4.00	25.00
Israel	SL	5.00	20.00
Italy	SL	2.00	1.00
	SL	4.00	24.00
	SL	2.00	1.00
Japan	SL	2.63	38.00
Korea	SL	5.00	20.00
Latvia <sup>c</sup>	---	---	---
Lithuania	DB	25.00	ufd
Luxembourg	SL	4.00	25.00
Mexico	SL	5.00	20.00
Netherlands	SL	2.50	40.00
New Zealand	DB	2.00	ufd
Norway	DB	4.00	ufd
Poland	SL	2.50	40.00
Portugal	SL	5.00	20.00
Slovak Republic <sup>c</sup>	SL	5.00	20.00
Slovenia	SL	3.00	33.33
Spain	SL	3.00	33.33
Sweden	SL	4.00	25.00
Switzerland	DB	8.00	ufd
Turkey	SL	4.00	25.00
United Kingdom <sup>e</sup>	SL	3.00	33.33
United States <sup>f</sup>	SL	2.46	1.00
		2.56	38.00
		0.11	1.00

Sources: Spengel, et al. (2019), the Oxford University Centre for Business Taxation (2017), International Bureau of Fiscal Documentation *Global Corporate Tax Handbook 2021*, PwC Worldwide Tax Summaries, and Ernst & Young Worldwide Corporate Tax Guide.

Notes: SL = straight-line; DB = declining-balance; ufd = until fully depreciated.

- a. Austria has introduced accelerated depreciation for buildings acquired or constructed after June 2020. The depreciation rate in the first year of acquisition is 7.5 percent; the depreciation rate in the following year is 5 percent. Thereafter, the applicable depreciation rate is 2.5 percent.
- b. Depreciation is normally reduced by half in the first year (the half-year convention). However, for assets other than machinery, Canada's Accelerated Investment Incentive (AII) suspends the half-year convention and allows businesses to deduct three times what can be deducted in the first year under the half-year convention. (For an asset with a DB rate of 10 percent, the first-year depreciation rate is 15 percent under AII.) The AII is phased out beginning in 2024 and does not apply after 2027.
- c. The Czech Republic and the Slovak Republic use either the SL method or an accelerated depreciation method. This accelerated method is a DB method that uses the same periods as the SL method. In the Czech Republic, assets are divided into 6 categories based on useful life. Machinery and equipment used in specified industrial processes are in category 3 and have a useful life of 10 years. Buildings other than office buildings, hotels, and shopping malls are in category 5 and have a useful life of 30 years. In the Slovak Republic, assets are also divided into 6 categories based on useful life. Machinery and equipment are in category 2 and have a useful life of 6 years. Certain buildings are in category 5 and have a useful life of 20 years. From 2015, accelerated depreciation is applicable only to assets in categories 2 and 3.
- d. Estonia and Latvia tax distributed profits instead of corporate income.
- e. Beginning in October 2018, a new Structures and Buildings Allowance applies to new nonresidential buildings and structures (excluding land). Under the Structures and Buildings Allowance, industrial buildings are depreciated on a SL basis at an annual rate of 3 percent from April 2020. The new allowance applies to contracts for construction works entered into on or after October 29, 2018. From April 2011 through October 2018, no capital allowances were allowed for buildings.
- f. The mid-month convention is used for nonresidential real property and residential real property. Under the mid-month convention, all property placed in service during a month is treated as placed in service at the mid-point of the month. This means that one-half of depreciation is allowed for the month that the property is placed in service. Assuming that the property is placed in service in the first month of the year, the SL depreciation rate is 2.461 percent in the first year, 2.564 percent in years 2 through 39, and 0.107 percent in year 40.

**Table 8C. 2021 Tax Depreciation for Acquired Patents**

	<b>Kind of Allowance</b>	<b>Acceleration Factor</b>	<b>Allowance Rate (in Percent)</b>	<b>Length of Period (in Years)</b>	<b>Optimal Switching Time (in Years)</b>
Australia	SL		5.00	20.00	
Austria	SL		10.00	10.00	
Belgium <sup>a</sup>	SL		20.00	5.00	
Canada <sup>b</sup>	DB		25.00	ufd	
Chile	SL		16.67	6.00	
Colombia	SL		20.00	5.00	
Czech Republic	SL		10.00	10.00	
Denmark <sup>c</sup>	SL		14.29	7.00	
Estonia <sup>d</sup>	---		---	---	
Finland	SL		10.00	10.00	
France	SL		20.00	5.00	
Germany	SL		20.00	5.00	
Greece	SL		10.00	10.00	
Hungary	SL		50.00	2.00	
Iceland	SL		20.00	5.00	
Ireland	SL		10.00	10.00	
Israel	SL		12.50	8.00	
Italy	SL		50.00	2.00	
Japan	SL		12.50	8.00	
Korea	SL		14.29	7.00	
Latvia <sup>d</sup>	---		---	---	
Lithuania	DB		66.67	ufd	
Luxembourg	SL		20.00	5.00	
Mexico	SL		15.00	6.00	
			10.00	1.00	
Netherlands	SL		10.00	10.00	
New Zealand	SL		5.00	20.00	
Norway	SL		10.00	10.00	
Poland	SL		20.00	5.00	
Portugal	SL		10.00	10.00	
Slovak Republic	SL		5.00	20.00	
Slovenia	SL		10.00	10.00	
Spain	SL		5.00	20.00	
Sweden	DB		30.00	ufd	
Switzerland	DB		40.00	ufd	
Turkey	DBSL	2.00	13.33 (DB) 4.55 (SL)	15.00	8.00
United Kingdom	SL		10.00	10.00	
United States	SL		6.67	15.00	

Sources: Spengel, et al. (2019), the Oxford University Centre for Business Taxation (2017), International Bureau of Fiscal Documentation *Global Corporate Tax Handbook 2021*, PwC Worldwide Tax Summaries, and Ernst & Young Worldwide Corporate Tax Guide.

Notes: SL = straight-line; DB = declining-balance; ufd = until fully depreciated.

- a. An additional special investment deduction of 13.5 percent applies in 2021.
- b. Depreciation is normally reduced by half in the first year (half-year convention). However, for assets other than machinery (including patents), Canada's Accelerated Investment Incentive (AII) suspends the half-year convention and allows businesses to deduct three times what can be deducted in the first year under the half-year convention. (For an asset with a DB rate of 25 percent, the first-year depreciation rate is 37.5 percent under AII.) The AII is phased out beginning in 2024 and does not apply after 2027.
- c. The acquisition cost of patents and acquired "know-how" may be deducted in the year of purchase or depreciated over 7 years using the SL method.
- d. Estonia and Latvia tax distributed profits instead of corporate income.

**Table 9. Economic and Other Parameters Assumed for OECD Countries**

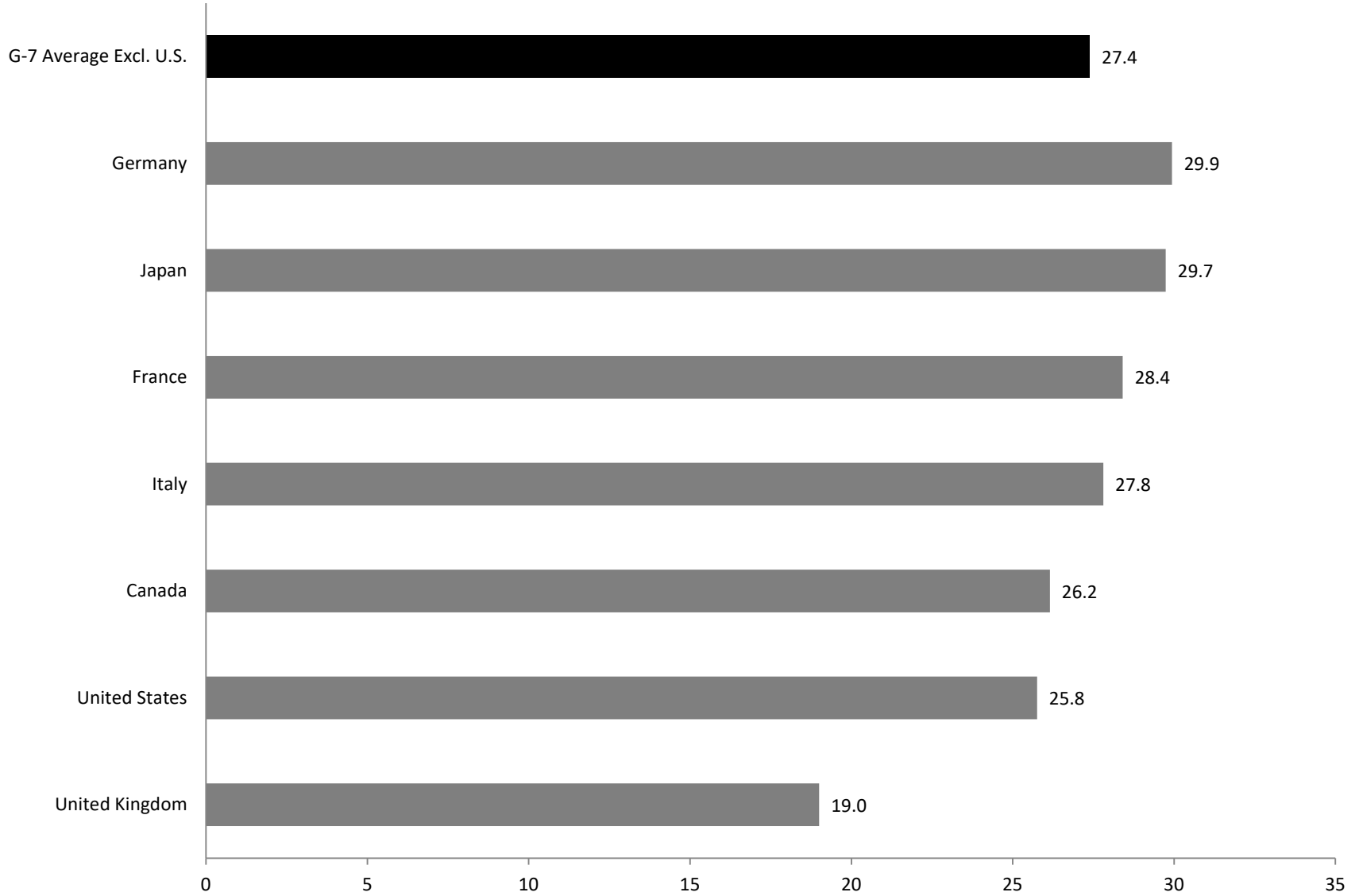
Real Rate of Return	5.00
Inflation Rate	2.00
Economic Depreciation Rate	
Machinery	17.50
Industrial Buildings	3.10
Acquired Patents	15.35
Inventories	0.00
Financial Assets	0.00
Proportion of New Investment Financed with: <sup>b</sup>	
Equity (and Retained Earnings)	65.00
Debt	35.00

Sources: Devereux, et al. (2008) and Spengel, et al. (2019).

a. The same economic parameters are assumed for all OECD countries so that any differences in effective tax rates reflect differences in tax regimes.

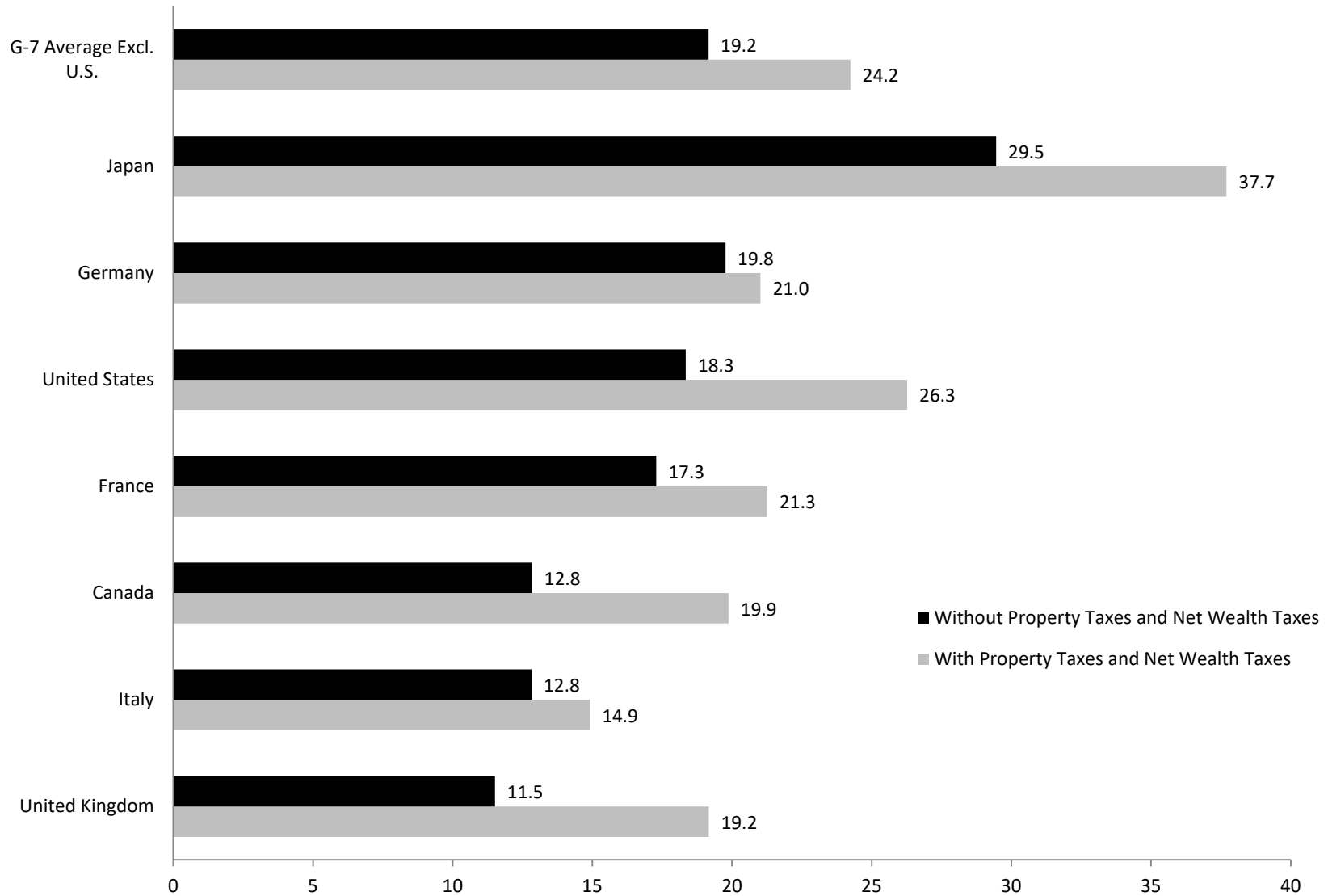
b. The overall effective marginal tax rates in Table 1 and Table 4 are calculated using the difference between an average cost of capital across type of asset (machinery, industrial buildings, acquired patents, inventories, financial assets) and type of finance (retained earnings, debt, equity) and an after-tax real rate of return. Devereux, et al. (2008) use a combined weight of 65 percent for equity and retained earnings and a weight of 35 percent for debt.

**Figure 1. 2021 Effective Statutory Corporate Tax Rate (in Percent)**





**Figure 2. 2021 Overall G-7 Effective Marginal Tax Rates (in Percent)**



**Figure 3. 2021 Overall G-7 Effective Average Tax Rates (in Percent)**

