

## ARTICLES

### AUTOMATION AND THE INCOME TAX

Jay A. Soled\* & Kathleen DeLaney Thomas\*

*Technological advancements are playing a transformative role in curtailing the need for labor. These very same forces are catapulting capital in the form of robotics, machinery, and intellectual property to the economic forefront. In virtually every sphere of human existence, labor's decline and capital's rise have been widely felt. In short, automation has become society's new focal point.*

*Notwithstanding the magnitude of these changes, Congress appears committed to retaining its historic pattern of taxing labor income more heavily than it taxes income derived from capital. However, as technology continues to evolve and capital gradually eclipses labor's role in the economy, a fundamental shift in the tax system will be needed to maintain a viable revenue stream.*

*This Article explores the ways that automation has impacted the tax system in terms of efficiency, fairness, and revenue. It concludes that our twentieth-century tax system is unsustainable in the twenty-first century. It then offers proposals for how policymakers should reform the tax law to account for labor's decline and capital's rise. Among other things, the technological era requires that all income—regardless of source—bear a similar tax burden.*

---

\* Jay A. Soled is a professor at Rutgers Business School, and Kathleen DeLaney Thomas is a professor at University of North Carolina School of Law. The authors thank Kelly Mauer and Seth Proctor for their excellent research assistance and Professors David Herzig, Susan C. Morse, Orly Mazur, and the participants at the 2017 National Taxation Association fall meeting for their valuable feedback and insights.

**TABLE OF CONTENTS**

I.	INTRODUCTION .....	3
II.	BACKGROUND .....	4
	A. Heritage of the Income Tax and Its Favorable Bias Toward Capital .....	5
	B. Current Taxation of Labor and Capital Income under the Code .....	7
	C. Tax Revenue Generation from Labor and Capital Income under the Code .....	18
III.	THE TECHNOLOGICAL REVOLUTION AND THE LABOR-CAPITAL DYNAMIC.....	20
	A. Technological Changes that Curtail or Eliminate Labor .....	20
	B. Consequences Associated with Labor Income’s Diminishment.....	25
	C. Tax Revenue Projections Associated with Technological Transformation.....	32
IV.	TAX REFORM IN AN ERA OF RAPID TECHNOLOGICAL ADVANCEMENTS ...	36
	A. Twenty-First-Century Tax Reform in a Changing Labor Market .....	36
	B. Implications Associated with Proposed Tax Reform.....	42
V.	CONCLUSION.....	46

*AUTOMATION AND THE INCOME TAX*

I. INTRODUCTION

There is a trend afoot that shows no signs of abating: technological advancements are progressing at an extraordinarily rapid pace, eliminating jobs and whole industries.<sup>1</sup> Notwithstanding the pace of these transformative changes, the income tax system has been slow to adjust, largely still rooted in taxing labor-produced income more heavily than income produced from capital.<sup>2</sup> Nevertheless, as human labor—the erstwhile driving force behind the nation’s economic growth<sup>3</sup>—waned in importance and as capital in the form of robotics, machinery, and intellectual property emerges in its place, the tectonics of the income tax system will have to shift.

While this shift will have significant economic implications that warrant careful circumspection and exploration, perhaps its greatest impact may be on how the country raises tax revenue. More specifically, because wealth generation and concentration are increasingly anchored to capital, not labor, Congress must consider reforming the Internal Revenue Code (Code) in a manner that takes this dynamic into account. In broad brushstroke, as tax revenues from wages fall, taxes on business profits, investment income, and capital gains must correspondingly increase.<sup>4</sup> This constitutes a complete reversal of past practices in which income derived from labor has historically borne the brunt of taxation; and, by contrast, income derived from capital was either exempt from tax or, alternatively, experienced much lower tax rates.<sup>5</sup>

---

<sup>1</sup> See, e.g., MARTIN FORD, *RISE OF THE ROBOTS: TECHNOLOGY AND THE THREAT OF A JOBLESS FUTURE* (2015) (presenting a compelling and comprehensive case that technology is eradicating many jobs and, in some cases, has caused whole industries to vanish). See also Samantha Masunaga, *Robots Could Take Over 38% of U.S. Jobs Within About 15 Years, Report Says*, L.A. TIMES (Mar. 24, 2017), <https://www.latimes.com/business/la-fi-pwc-robotics-jobs-20170324-story.html> [<https://perma.cc/NK2F-SAT7>] (“More than a third of U.S. jobs could be at “high risk” of automation by the early 2030s . . . .”); John Markoff, *Skilled Work, Without the Worker*, N.Y. TIMES (Aug. 18, 2012), (“A new wave of robots, far more adept than those now commonly used by automakers and other heavy manufacturers, are replacing workers around the world in both manufacturing and distribution”); Stephanie Clifford, *U.S. Textile Plants Return, with Floors Largely Empty of People*, N.Y. TIMES (Sept. 19, 2013), [https://www.nytimes.com/2013/09/20/business/us-textile-factories-return.html?pagewanted=all&\\_r=0](https://www.nytimes.com/2013/09/20/business/us-textile-factories-return.html?pagewanted=all&_r=0) (“And politicians’ promises that American manufacturing means an abundance of new jobs is complicated—yes, it means jobs, but on nowhere near the scale there was before, because machines have replaced humans at almost every point in the production process.”); Carl Benedikt Frey & Michael A. Osborne, *The Future of Employment: How Susceptible Are Jobs to Computerisation?* (Oxford Martin Programme on Tec. and Emp., 2013), [https://www.oxfordmartin.ox.ac.uk/downloads/academic/The\\_Future\\_of\\_Employment.pdf](https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf) [<https://perma.cc/U9RE-E6BY>] (“According to our estimates, about 47 percent of total US employment is at risk [of being lost].”); James Manyika et al., *Disruptive Technologies: Advances That Will Transform Life, Business, and the Global Economy*, MCKINSEY GLOBAL INST. (May 2013), <https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/disruptive-technologies> [<https://perma.cc/5M22-QKW7>] (“Twelve emerging technologies—including the mobile Internet, autonomous vehicles, and advanced genomics—have the potential to truly reshape the world in which we live and work. Leaders in both government and business must not only know what’s on the horizon but also start preparing for its impact.”). Bear in mind that even over a half a century ago, technology was a perceived threat to the job market. See *The Automation Jobless: Not Fired, Just Not Hired*, TIME (Feb. 24, 1961), <https://content.time.com/time/subscriber/printout/0,8816,828815,00.html> [<https://perma.cc/8E5K-DRN6>].

<sup>2</sup> See *infra* Section II.

<sup>3</sup> See generally George Langelett, *Human Capital: A Summary of the 20th Century Research*, 28 J. EDUC. FIN. 1 (2002).

<sup>4</sup> See *infra* Section IVA.

<sup>5</sup> See *infra* Section IIA.

*COLUMBIA JOURNAL OF TAX LAW*

There is already some evidence that technological advancements have begun to make their mark on the Code. Over the last two decades, as the pace of technological changes has accelerated, Congress has chosen to retain relatively constant tax rates on wage income.<sup>6</sup> Indeed, even recent tax legislation passed in 2017—the most significant tax reform in decades—made only modest adjustments to individual income tax rates and no adjustments to payroll tax rates.<sup>7</sup> In contrast, Congress raised rates on investment income in 2010<sup>8</sup> and increased the maximum capital gains rate in 2013.<sup>9</sup> While it is hard to be prescient, particularly with respect to the income tax, there is every reason to believe that this general trend will continue and that Congress will no longer rely upon labor income as heavily as it once did as a revenue source. Yet, for now, a significant disparity still exists between the tax treatment of labor and capital, and policy makers must do more to correct this course.

This Article explores how Congress should reform the Code to account for labor's decline and capital's rise, as well as the concomitant implications associated with the reform measures proposed. Section II sets forth several salient background items, including a short history of the labor-capital income dynamic; an explanation of how the Code currently taxes wages, business profits, investment income, and capital gains; and a discussion of the relative revenue that each mode of taxation generates. Section III next explores how automation has transformed the economy in ways that, only a generation ago, were unimaginable and the impact that these changes have had on the tax system. Section IV predicts how Congress will have to reform the income tax system to better align it with technological advancements and discusses the larger economic and social implications of doing so. Section V concludes.

## II. BACKGROUND

Examining the impact that technological advances have had on the economy and the larger implications that such changes presage for the Code requires an investigation of the past and an explication of the present. While various modes of taxation are endemic to civilized societies and extant for many millennia, income tax systems are of relatively recent vintage.<sup>10</sup> Tracing the origins of the modern income tax reveals much about why and how our tax system has evolved into one that taxes labor and capital so differently. Delving into this history raises the following important questions:

- Why did the Code come into existence and supplant prior means of tax revenue collection?
- How did the Code evolve into what it is today?
- Can the Code successfully continue to raise revenue?

---

<sup>6</sup> See, e.g., American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, § 101 (2012) (making “permanent” the lower rates of the so-called Bush tax cuts (while retaining the higher tax rate at upper-income levels)).

<sup>7</sup> See Tax Cuts and Jobs Act of 2017, Pub. L. No. 115-97, § 11001 (2017) (amending I.R.C. § 1) [hereinafter Tax Cuts and Jobs Act].

<sup>8</sup> See Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, § 1402 (2010) (instituting I.R.C. § 1411, which imposes a 3.8 percent Medicare contribution tax on passive investment income).

<sup>9</sup> See American Taxpayer Relief Act of 2012, Pub. L. No. 112-240, §102, 126 Stat. 2313, 2318-19 (2013) (raising maximum capital gains rate from 15 percent to 20 percent).

<sup>10</sup> See *infra* Section II.A.

*AUTOMATION AND THE INCOME TAX*

The next three subsections attempt to answer these questions, exploring (A) the history of the income tax, with emphasis on its treatment of income derived from labor versus that derived from capital; (B) the current tax treatment of labor-generated income versus capital-generated income; and (C) the relative revenue that labor and capital income each generate.

A. Heritage of the Income Tax and Its Favorable Bias Toward Capital

For millennia, dating back as far as when Mesopotamia was in its vibrancy, civilized societies have implemented tax collection to fund essential governmental services such as the military, judicial systems, and garbage collection.<sup>11</sup> There has been a host of ways that governments have levied tax burdens. For example, in ancient Egypt, taxes were largely agrarian based;<sup>12</sup> whereas during the Greek and Roman Empires, taxes were frequently assessed on property ownership.<sup>13</sup>

Shortly after the Norman Conquest in 1066, when feudalism came into full vogue, the so-called product tax—the predecessor of the modern-day income tax—came into existence.<sup>14</sup> Such taxes were assessed primarily based on the capitalized value of rental income derived from real estate ownership.<sup>15</sup> At the time, this mode of tax collection made eminent sense because, under feudalism, land was essentially not saleable; that being the case, for tax-collection purposes, rents derived from such property were an accurate indicator of the property’s underlying value. This practice of taxing the capitalized rental income of real estate was periodically extended to the capitalized income of other “products,” such as business enterprises.<sup>16</sup> As described by the renowned economist, Edwin Seligman, “[a] product tax is a tax upon a thing itself, irrespective of who the owner may be, or who benefits from the income.”<sup>17</sup>

In 1660, the Tenures Abolition Act eliminated the feudal system. Product taxes nevertheless left an indelible mark on the future of income tax systems worldwide. In feudalism’s absence, landowners were finally free to bequeath estates to heirs of their choosing without interference from the Crown. Nevertheless, Great Britain established a comprehensive so-called entailment system, which allowed a line of heirs to use an estate but essentially denied them

---

<sup>11</sup> See, e.g., Tonia Sharlach, *Taxes in Ancient Mesopotamia*, 48 U. PA. ALMANAC (2002), <http://www.upenn.edu/almanac/v48/n28/AncientTaxes.html> [<http://perma.cc/FC5B-HEPB>] (“Since they didn’t have coined money, ancient households had to pay taxes in kind, and they paid different taxes throughout the year. Poll taxes required each man to deliver a cow or sheep to the authorities. Merchants transporting goods from one region to another were subject to tolls, duty fees, and other taxes.”).

<sup>12</sup> See, e.g., Aristide Theodorides, *The Concept of Law in Ancient Egypt*, in *THE LEGACY OF EGYPT* 291-92 (J. R. Harris ed., 2d ed. 1971).

<sup>13</sup> See, e.g., *Taxation*, in *ANCIENT GREECE AND ROME: AN ENCYCLOPEDIA FOR STUDENTS* 437 (Carroll Moulton ed., 1998), <https://erenow.com/ancient/ancient-greece-and-rome-an-encyclopedia-for-students-4-volume-set/437.html> (“The major tax throughout Roman history was the tributun, which was a tax on material wealth, including land, slaves, and goods.”).

<sup>14</sup> STEPHEN DOWELL, *A HISTORY OF TAXATION AND TAXES IN ENGLAND FROM THE EARLIEST TIMES TO THE YEAR 1885*, at 67 (2d ed.1888).

<sup>15</sup> EDWIN SELIGMAN, *THE INCOME TAX: A STUDY OF THE HISTORY, THEORY, AND PRACTICE OF INCOME TAXATION AT HOME AND ABROAD* 41 (1914) (“The ‘capitalized value’ refers to the present value of the projected future income stream from the property.”).

<sup>16</sup> *Id.* at 42.

<sup>17</sup> *Id.* at 13. Other historians believe that the products tax was essentially the equivalent of an income tax. WILLIAM KENNEDY, *ENGLISH TAXATION, 1640–1799: AN ESSAY ON POLICY AND OPINION* 47–48 (1913).

## COLUMBIA JOURNAL OF TAX LAW

discretionary rights to sell or gift it.<sup>18</sup> The system of entailing property created a situation in which the realization of capital appreciation of real property was virtually nonexistent. In the vast majority of cases, most, if not all, of a person's estate consisted of entailed real property; therefore, a perception quickly emerged that capital constituted a physical object outside the scope of income. Put somewhat differently, over a tenant's lifetime, capital value might experience increases or decreases, but such fluctuations were viewed as changes in the corpus, not as unrealized income or loss.<sup>19</sup> A British tradition thus arose of referring to a person's worth in terms of annual income rather than making reference to the underlying property ownership itself.<sup>20</sup>

In 1799, when Great Britain enacted the first full-fledged income tax system, what was singularly unsurprising was that capital gains were not taxed.<sup>21</sup> After all, for centuries, engrained in the mind-set of the general populace was the notion that income was comprised of reoccurring revenue on an annual basis; capital gains simply did not meet this definition. All other income sources, however, were taxed.<sup>22</sup> For nearly two centuries, this tradition of taxing income but not capital gains remained a regular feature of the English income tax system—only recently revisited in 1965, when capital gains were finally made subject to income tax.<sup>23</sup>

With the passage of the Sixteenth Amendment, Congress considered formulating an income tax system of its own. Unlike England, however, there was no system of entails in the United States and thus land was regularly bought and sold, with no intrinsic reason to differentiate it from other wealth accretions. When instituting the nation's first income tax, gains and losses associated with capital ownership were accordingly subject to taxation and treated akin to other income sources.

But this tax parity did not last long. Remnants of the income tax systems of Great Britain and other European countries—in which capital gains were either not taxed or only lightly taxed—likely became catalysts for change in the United States. Soon after the nation's income tax was instituted, Secretary of the Treasury Andrew Mellon exclaimed that high capital gains tax rates were a drag on economic growth.<sup>24</sup> In addition, a leading corporate attorney, Fredrick R. Kellogg, testified several times before the Senate Finance Committee about the need to reduce capital gains tax rates to “unlock” capital realizations.<sup>25</sup> No doubt aware that their European counterparts already granted preferential treatment to capital gains, congressional members were receptive to

---

<sup>18</sup> FREDERIC MAITLAND, A SKETCH OF ENGLISH LEGAL HISTORY 139–40 (James F. Colby ed., 1915); *see also* Harvey Perry, *Capital Gains: The British Point of View*, 46 PROC. ANN. CONF. ON TAX'N UNDER AUSPICES OF THE NAT'L TAX ASS'N 150, 151–52 (1953); LAWRENCE H. SELTZER ET AL., THE NATURE AND TAX TREATMENT OF CAPITAL GAINS AND LOSSES 26 (1951).

<sup>19</sup> Perry, *supra* note 18, at 152–53.

<sup>20</sup> A bibliophile may recall that Mr. Darcy was worth “[a] clear ten thousand per annum.” JANE AUSTEN, *PRIDE AND PREJUDICE* (1813).

<sup>21</sup> SELTZER, *supra* note 18, at 28.

<sup>22</sup> DOWELL, *supra* note 14, at 93–94.

<sup>23</sup> Finance Act 1965, 1965, chapter 25, § 19 (Eng.), [http://www.legislation.gov.uk/ukpga/1965/25/pdfs/ukpga\\_19650025\\_en.pdf](http://www.legislation.gov.uk/ukpga/1965/25/pdfs/ukpga_19650025_en.pdf) [<https://perma.cc/J9U5-KBL8>].

<sup>24</sup> ANDREW W. MELLON, *TAXATION: THE PEOPLE'S BUSINESS* 18–19, 127–38 (1st ed. 1924).

<sup>25</sup> Ajay K. Mehrotra & Julia C. Ott, *The Curious Beginnings of the Capital Gains Tax Preference*, 84 *FORDHAM L. REV.* 2517, 2525–26 (2016) (citing *Internal-Revenue Hearings Before the S. Comm. on Finance on the Proposed Revenue Act of 1921*, 67th Cong. 534–54 (1921) (statement of Frederick R. Kellogg)).

*AUTOMATION AND THE INCOME TAX*

Mellon's and Kellogg's entreaties and passed the Revenue Act of 1921.<sup>26</sup> This legislation reduced capital gains rates to a flat 12.5 percent (compared to a maximum tax rate of 58 percent applicable to ordinary income).<sup>27</sup>

Ever since the Revenue Act of 1921 became law, except for a four-year period following the passage of the Tax Reform Act of 1986,<sup>28</sup> capital gains have enjoyed a significant tax rate preference relative to ordinary income. This tax rate preference constitutes a tax expenditure, which has come at a significant dollar cost to the government's coffers.<sup>29</sup> The unanswered question is whether, in the age of automation, the nation can continue to endure this hefty financial burden.

B. Current Taxation of Labor and Capital Income under the Code

In theory, under the Code, all income should be taxed absent a compelling public policy justification for exemption: Code § 61 declares that all wealth accretions "from whatever source" should be included in the tax base.<sup>30</sup> Furthermore, Code § 61's definition of income, like the Haig-Simons economic definition,<sup>31</sup> does not differentiate between and among income sources.

But, for a variety of reasons, the Code taxes labor income much more severely than capital income. Part (1) first compares the tax burdens that befall income derived from labor versus income derived from capital. We use *capital* for this purpose to refer to any investment in property, regardless of form (tangible or intangible) and regardless of use (business, investment, or personal). For example, salary would constitute income derived from labor, while rents received on an investment property would constitute income derived from capital. Part (2) next explores the putative reasons underpinning the incongruent tax treatment of labor versus capital.

1. *Tax Burdens*

Investments in capital are generally taxed more favorably than labor income. Within the universe of capital investment, the tax law further distinguishes between investments taxed at ordinary income rates and those that receive even more favorable capital gains treatment. Ordinary income treatment<sup>32</sup> generally applies to both business profits and recurring investment income (e.g., interest paid on bonds); by contrast, capital gains treatment generally applies when a capital

<sup>26</sup> Revenue Act of 1921, Pub. L. No. 67-98, § 206(b) (1921).

<sup>27</sup> See Mehrotra & Ott, *supra* note 25, at 2526–27; *Top Federal Income Tax Rates Since 1913*, CITIZENS FOR TAX JUSTICE (2011), <http://www.ctj.org/pdf/regcg.pdf> [<http://perma.cc/EKD6-WKK5>].

<sup>28</sup> See Robert McClelland, *Capital Gains*, TAX POL'Y CTR. (Feb. 6, 2017), <https://www.taxpolicycenter.org/publications/capital-gains/full> [<http://perma.cc/W9DG-SM2T>].

<sup>29</sup> See OFFICE OF TAX ANALYSIS, U.S. DEP'T OF THE TREASURY, TAX EXPENDITURES, ¶ 70, at 11 (Sept. 28, 2016), <https://www.treasury.gov/resource-center/tax-policy/Documents/Tax-Expenditures-FY2018.pdf> [<http://perma.cc/FMX7-M6QB>] (estimating that the capital gains tax rate preference reduces revenue yields by over \$100 billion annually).

<sup>30</sup> I.R.C. § 61(a).

<sup>31</sup> The so-called "Haig-Simons" definition of income (named after the two economists who wrote it) provides that income equals: (1) one's change in net worth plus (2) one's consumption. See HENRY C. SIMONS, *PERSONAL INCOME TAXATION* 50 (1938); Robert M. Haig, *The Concept of Income—Economic and Legal Aspects*, in *THE FEDERAL INCOME TAX* 1, 7 (Robert M. Haig ed., 1921). See also Theodore P. Seto, *Inside Zarin*, 59 SMU L. REV. 1761, 1795 (2006).

<sup>32</sup> *Ordinary income treatment* means that the income is taxed under § 1 of the Code at the same marginal tax rates that apply to labor (rather than preferential capital gains rates). However, ordinary income derived from capital is still taxed more favorably than labor income because the former is not subject to payroll taxes.

asset (e.g., stock) is sold. In sum, there are different regimes for taxing income, which depend on whether the income is derived from (a) labor, (b) business profits, (c) investment income, or (d) capital gains. Consider, in general, how the Code taxes each.

a. Income Derived from Labor

Labor income bears the nation's highest tax burden, which is largely attributable to the fact that it is taxed twice. First, the Code imposes an income tax on labor earnings.<sup>33</sup> More specifically, depending upon the taxpayer's filing tax status (i.e., single, married, or head of household) and income level, labor earnings are subject to income tax rates ranging from 10 percent to 37 percent.<sup>34</sup> Second, upon the very same earned income, the Code imposes employee and employer payroll taxes, which amount to an additional tax burden of roughly 15 percent.<sup>35</sup>

The employee payroll tax is levied on earnings from employment<sup>36</sup> and consists of two components: (i) an old-age, survivors, and disability insurance tax equal to 6.2 percent of wages;<sup>37</sup> and (ii) a hospital insurance tax equal to 1.45 percent of wages.<sup>38</sup> The employer payroll tax contains the same two components at the same rates.<sup>39</sup> In other words, an employee owes a combined 7.65 percent of her wages in payroll taxes, and her employer owes an additional 7.65 percent in payroll taxes on those same wages.<sup>40</sup> In those cases where the taxpayer is instead self-employed, payroll taxes take the form of a self-employment tax with the same components<sup>41</sup> but at rates that are double the tax rate paid by employees. In other words, the self-employed taxpayer is responsible for (i) an old-age, survivors, and disability insurance tax equal to 12.4 percent of net self-employment income;<sup>42</sup> and (ii) a hospital insurance tax equal to 2.9 percent of net self-employment income.<sup>43</sup>

To illustrate the tax burden that Congress places on labor income,<sup>44</sup> consider a plumber who is employed by a plumbing business and who is paid an annual salary of \$100,000. Assume

---

<sup>33</sup> I.R.C. § 61(a).

<sup>34</sup> I.R.C. § 1(a)–(d); *see also* Rev. Proc. 2018-18, 2018-10 I.R.B. 392 (new tax brackets for 2018).

<sup>35</sup> I.R.C. § 3101 (payroll tax imposed on employees); I.R.C. § 3111 (payroll tax imposed on employers).

<sup>36</sup> I.R.C. § 3121(a).

<sup>37</sup> I.R.C. § 3101(a).

<sup>38</sup> I.R.C. § 3101(b).

<sup>39</sup> I.R.C. § 3111(a), (b).

<sup>40</sup> Additional hospital insurance taxes apply for employees paid more than \$200,000 per year at a rate of 0.9 percent; and old age, survivors, and disability insurance taxes are not required after the first \$127,200 of wages for 2017. *See* INTERNAL REVENUE SERV., PUBLICATION 15: (CIRCULAR E), EMPLOYER'S TAX GUIDE 25, 33 (2017), <https://www.irs.gov/pub/irs-pdf/p15.pdf> [<https://perma.cc/X597-BKTC>]. The employer may also have to pay federal unemployment taxes on the first \$7,000 of wages at a rate that varies based on the amount of state unemployment contributions made. *See id.* at 37.

<sup>41</sup> I.R.C. § 1401.

<sup>42</sup> I.R.C. § 1401(a).

<sup>43</sup> I.R.C. § 1401(b). Self-employment taxes only apply if an individual earns at least \$400 during the year from self-employment. The same \$127,200 ceiling applies for old age, survivors, and disability insurance taxes; and the same additional hospital insurance tax applies for net earnings over \$200,000. *See supra* note 40, at 33; INTERNAL REVENUE SERV., TOPIC NUMBER 554: SELF-EMPLOYMENT TAX (Jan. 31, 2018), <https://www.irs.gov/taxtopics/tc554.html> [<https://perma.cc/FU7A-2BYS>].

<sup>44</sup> *Labor income* as used in this article refers to both wages paid by employers and labor earnings from self-employment. A self-employed taxpayer might earn both labor income and "business profits" (discussed in the next subpart).

*AUTOMATION AND THE INCOME TAX*

that the employee's effective income tax rate is 20 percent, resulting in \$20,000 of income tax due on the wages. Additionally, the employee's wages would be subject to \$15,300 of payroll taxes (\$7,650 paid by the employer and \$7,650 paid by the employee).<sup>45</sup> The total taxes levied on the taxpayer's labor income thus would be \$35,300, or approximately 35.3 percent of income earned. Had the taxpayer instead been a self-employed plumber earning \$100,000 net of expenses, a similar tax fate would have befallen the plumbing income earned.<sup>46</sup>

b. Income Derived from Business Profits

Comparatively, business profits endure a moderate amount of tax. This lower tax burden results in part because business profits are generally taxed only once (i.e., under the income tax but not the payroll tax), applying the same progressive income tax rates as those imposed on labor income.<sup>47</sup> Moreover, because the Code permits related expenses to be deducted,<sup>48</sup> businesses are generally taxed on a net basis rather than on a gross dollar amount (as is generally the case with wages).<sup>49</sup>

As an example, consider again the employed plumber who earns \$100,000 of wages. If he spends \$10,000 of his own funds on tools, he will not be able to deduct that amount; he will still owe payroll taxes on all \$100,000 of his wages, only able to claim personal deductions (e.g., the standard deduction) for income tax purposes.<sup>50</sup> In contrast, consider a plumber who operates his own business through a solely owned S corporation,<sup>51</sup> earning \$100,000 in fees. This plumber will be able to deduct \$10,000 spent on tools as a business expense,<sup>52</sup> resulting in net business income of \$90,000. Furthermore, any business profit earned by the plumber through his S corporation will be taxed at the plumber's ordinary marginal income tax rates but generally will not be subject to payroll taxes.<sup>53</sup>

---

<sup>45</sup> Bear in mind that many states also levy special payroll taxes on labor income. Some of these taxes are for state unemployment insurance; others are for state disability insurance. *See, e.g.*, N.J. STAT. ANN. § 43:21-7 (2009).

<sup>46</sup> Two caveats are in order. First, self-employed taxpayers may deduct half of their self-employment tax liability, *see* I.R.C. § 164(f). Second, the plumber's income taxes may be lower because certain self-employed taxpayers will qualify for a deduction under new § 199A of the Code (discussed further below), while employed taxpayers may not take advantage of this deduction.

<sup>47</sup> I.R.C. § 1.

<sup>48</sup> I.R.C. §§ 162, 212.

<sup>49</sup> Business expenses of employees are currently nondeductible under the Code. *See* Tax Cuts and Jobs Act of 2017, *supra* note 7, § 11045 (suspending miscellaneous itemized deductions under I.R.C. § 67 until 2026). Even before this recent law change, most employee business expenses could not be deducted because of the 2 percent floor on miscellaneous itemized deductions. *See* I.R.C. § 67.

<sup>50</sup> *See* Tax Cuts and Jobs Act of 2017, *supra* note 7, § 11045.

<sup>51</sup> A business taxed as an S corporation is treated as a pass-through entity, meaning that the owners pay tax on the earnings of the business on their own personal tax returns and that there is no separate level of tax on the business itself. *See* INTERNAL REVENUE SERV., S CORPORATIONS (May 3, 2018), <https://www.irs.gov/businesses/small-businesses-self-employed/s-corporations> [<https://perma.cc/T93W-LTBU>].

<sup>52</sup> I.R.C. § 162.

<sup>53</sup> However, the Code requires that S corporations pay owners who perform services "reasonable compensation," which is subject to payroll taxes. The plumber in this example would thus be required to divide the \$90,000 earned by his S corporation between "salary" (subject to self-employment tax) and "profits" (not subject to self-employment tax) and would presumably allocate as much income as possible to the latter. *See* Rev. Rul. 74-44, 1974-1 C.B. 287 (reasonable compensation requirement); U.S. GOV'T ACCOUNTABILITY OFFICE (GAO), GAO-10-195, TAX GAP: ACTIONS NEEDED TO ADDRESS NONCOMPLIANCE WITH S CORPORATION TAX RULES 6 (2009). Not all

## COLUMBIA JOURNAL OF TAX LAW

Congress has been particularly magnanimous with respect to business expenses, generously permitting robust deductions such as accelerated depreciation<sup>54</sup> and research and development credits.<sup>55</sup> Indeed, the 2017 tax reform bill allows businesses to deduct the entire cost of certain depreciable business property acquired through the year 2022, after which only slightly less generous bonus depreciation deductions apply.<sup>56</sup> These deductions and credits can significantly diminish the tax burden associated with the production of business and investment profits.

Consider, for example, a taxpayer who owns a \$1 million widget-making machine that annually generates \$100,000 of gross revenue. Depending upon when the widget-making machine was placed into service, the taxpayer may be entitled to deduct the entire cost of the machine in the first year or take large depreciation deductions over a fixed number of years.<sup>57</sup> As a result of these deductions, the taxpayer may report very little or no net business income, notwithstanding the \$100,000 of annual gross earnings the machine may generate, resulting in an effective tax rate as low as zero in some years. Moreover, some of the dollars spent developing the widget-making machine might also generate a research and development credit,<sup>58</sup> further offsetting whatever tax dollars would be due on the taxpayer's net business profits.

Newly enacted § 199A of the Code provides even more tax benefits to certain business owners—benefits that are not available to wage earners.<sup>59</sup> Section 199A allows for a deduction of up to 20 percent of the net business income of any noncorporate business, including sole proprietorships, S corporations, and partnerships.<sup>60</sup> For example, a plumber earning \$50,000 of net profit through an S corporation would be able to deduct up to \$10,000,<sup>61</sup> reducing his taxable business income to \$40,000.

---

business owners are able to avoid payroll taxes. Business income earned through a sole proprietorship or partnership is generally subject to self-employment tax, although the tax applies net of business expenses. Taxpayers who earn business income through a C corporation are not subject to payroll taxes on business income (other than on wages paid to employees of the corporation); however, such income is subject to income tax at both the corporate level and again at the individual level when distributed as a dividend. U.S. GOV'T ACCOUNTABILITY OFFICE (GAO), *supra* note 53, at 7 tbl.1.

<sup>54</sup> I.R.C. § 168(a).

<sup>55</sup> I.R.C. § 41(a).

<sup>56</sup> I.R.C. § 168(k) (allowing for 100 percent bonus depreciation for tangible, non-real estate property until 2022). The amount of bonus depreciation reduces to 80 percent of cost in 2023 and 60 percent in 2024, and it continues to scale down by 20 percent each year until it reaches zero in 2027. Tax Cuts and Jobs Act, *supra* note 7, § 13201. However, when bonus depreciation is less than 100 percent, taxpayers may also be able to take advantage of generous expensing provided under § 179 of the Code, which allows for an immediate deduction of up to \$1 million of the cost of certain qualifying property. *Id.* § 13101.

<sup>57</sup> I.R.C. § 168(k).

<sup>58</sup> I.R.C. § 41(a).

<sup>59</sup> See I.R.C. § 199A(d)(1)(B) (excluding employees from the definition of a “qualified trade or business”).

<sup>60</sup> Tax Cuts and Jobs Act of 2017, *supra* note 7, § 11011. The deduction is scheduled to sunset at the end of 2025. I.R.C. § 199A(i).

<sup>61</sup> However, the § 199A deduction cannot exceed 20 percent of the taxpayer's taxable income (less any net capital gain). This amount might be less than 20 percent of the taxpayer's net business income. Consider, for example, the plumber earning \$50,000 of net business income. If the plumber's taxable income were only \$35,000 after taking into account his personal deductions, his § 199A deduction would be only \$7,000 (20 percent of \$35,000), not \$10,000. See I.R.C. § 199A(a)(1).

*AUTOMATION AND THE INCOME TAX*

Below certain income thresholds,<sup>62</sup> the § 199A deduction is available to any noncorporate business owner. But above the income threshold,<sup>63</sup> the deduction is available only to taxpayers who aren't in a "specified service trade or business," such as law, health, accounting, or any other business that relies primarily on "the reputation or skill" of its owner or employees.<sup>64</sup> Presumably, a self-employed plumber who is over the income threshold would not qualify for the § 199A deduction because the principal asset of his business would be his skill, whereas the income earned by a real estate investor might qualify for the deduction. In essence, by carving out specified service businesses from the application of § 199A, Congress drew another line in the sand between labor and nonlabor income. Those businesses owners that primarily provide services (a term crudely defined by the statute<sup>65</sup>) are not favored by the deduction, while those that derive income in other ways—real property ownership, for example—will reap its benefits.<sup>66</sup>

c. Income Derived from Investments

Most investment income endures a similarly moderate amount of tax. For example, \$100,000 of interest income earned on a bond portfolio would be taxed at the same rate as \$100,000 of wages, but there would be no additional payroll tax levied on the bonds. In the case of so-called qualified dividends,<sup>67</sup> investment profits enjoy an even lower tax rate of just 20 percent.<sup>68</sup> Taxpayers with investment income over a certain threshold may face an additional 3.8 percent investment income tax,<sup>69</sup> but the total tax rate on investment income for those taxpayers will generally be far lower than that on labor income.

To illustrate this difference, consider a taxpayer who earns \$100,000 of additional wage income and who is in the highest marginal income tax bracket (37 percent). This taxpayer will pay income tax of \$37,000—plus payroll taxes. But if that same taxpayer instead earns \$100,000 in qualified dividends from a public company, she would owe at most \$23,800 of tax on those dividends, a tax rate of just 23.8 percent.

d. Income Derived from Capital Gains

Finally, compared to income from labor, business profits, or investments, capital gains

---

<sup>62</sup> The taxable income thresholds are currently \$157,500 for single taxpayers and \$315,000 for married taxpayers filing joint returns and are annually adjusted for inflation. *See* I.R.C. § 199A(e)(2)(A), (B).

<sup>63</sup> Additional limitations also apply to taxpayers above the income threshold based on the amount of W-2 wages paid by the business and/or by the amount of depreciable business property held by the business. I.R.C. § 199A(b)(2)–(3).

<sup>64</sup> I.R.C. § 199A(d)(1)–(3).

<sup>65</sup> Politics likely caused certain industries to be designated as inside or outside the scope of the *specified service trade or business* definition. For example, architects and engineers were in the originally proposed version of § 199A but were (mysteriously) excluded from the final version. *See* Daniel Shaviro, *Evaluating the New U.S. Pass-Through Rates*, 1 BRIT. TAX REV. 49, at 60, 64 (2018).

<sup>66</sup> *Id.* at 51 ("The likes of real estate, oil and gas, manufacturing, and retailing are apparently 'good', while the likes of medicine, law, accounting, consulting, the arts, professional sports, and corporate management are apparently less good, but one cannot quite tell why.")

<sup>67</sup> A "qualified dividend" is one that is paid on stock in a domestic or qualified foreign company and that meets a certain minimum holding period requirement. I.R.C. § 1(h)(11)(B).

<sup>68</sup> I.R.C. § 1(h)(11)(A).

<sup>69</sup> *See* I.R.C. § 1411.

often sustain the smallest tax burden. For starters, capital gains are not subject to payroll taxes and command preferential rates far lower than ordinary income tax rates.<sup>70</sup> Tax relief does not end there, however; under the Code, there are a series of provisions that serve to alleviate;<sup>71</sup> defer;<sup>72</sup> and, in some cases, entirely eliminate<sup>73</sup> capital gains. Indeed, the whole concept of realization, a central bedrock of Code § 1001, constitutes a significant departure from the conceptual purity denoted in Code § 61, in which all annual wealth accretions ostensibly constitute income.<sup>74</sup>

To illustrate the favoritism that Congress has historically bestowed upon capital gains, consider a taxpayer who purchased a marketable security for \$10,000 that has gradually appreciated over a nine-year period to \$100,000. Notwithstanding the security's annual increases in fair market value, the taxpayer does not have to bear any income tax on that appreciation. Furthermore, if the taxpayer sells the security, the \$90,000 of gain will be taxed—but at tax rates far lower than those that apply to labor income or business income.<sup>75</sup> For example, a taxpayer in the highest marginal tax bracket for ordinary income (37 percent) will face a 20 percent capital gains rate under § 1 of the Code, with a possible additional tax of 3.8 percent,<sup>76</sup> for a combined rate of 23.8 percent. Furthermore, if the security is acquired by or passes to another by reason of the taxpayers' death, the \$90,000 of capital gains will never be subject to income tax.<sup>77</sup>

## 2. Rationales Underpinning Distinct Tax Treatments

Clearly, the categorization of income under the Code has important tax consequences. But are there compelling justifications for such dissimilar treatments?

Dating back to when Congress instituted the income tax in the early and midpart of the twentieth century, many rationales—primarily based upon administrative necessity and historical precedent from other countries—were adopted to explain how income derived from different sources was to be taxed.<sup>78</sup> Over time, however, technological advances have gradually eroded and, in some cases, obliterated these rationales, requiring that they now be revisited. Below is a compendium of the historic justifications for different tax treatments under the Code.

### a. Rationale for Labor Income Taxation

When Congress first instituted the income tax in 1913,<sup>79</sup> it made no ostensible distinctions between and among the various sources of the income that taxpayers earned—plain and simple, it was all to be equivalently taxed.<sup>80</sup>

---

<sup>70</sup> I.R.C. § 1(h)(1).

<sup>71</sup> *See, e.g.*, I.R.C. § 121.

<sup>72</sup> *See, e.g.*, I.R.C. § 1031.

<sup>73</sup> I.R.C. § 1014.

<sup>74</sup> Admittedly, there are some factors that favor preferential capital gains rates, which are discussed in the next subsection.

<sup>75</sup> I.R.C. § 1(h)(1).

<sup>76</sup> An additional tax of 3.8 percent applies to the “net investment income” of certain high-income taxpayers; when applicable, a taxpayer's maximum capital gains rate would be 23.8 percent. I.R.C. § 1411.

<sup>77</sup> I.R.C. § 1014(a).

<sup>78</sup> *See supra* Section II.A.

<sup>79</sup> Revenue Act of 1913, Pub. L. No. 63, ch. 16, 38 Stat. 114, 166–81.

<sup>80</sup> Even at the inception of the income tax, Congress and the Treasury Department, by instituting a realization requirement, laid the groundwork for the preferential tax treatment accorded to capital income.

*AUTOMATION AND THE INCOME TAX*

However, three major historical events made labor income a particularly attractive target for taxation. The first was the economic depression that struck the nation in 1929. During this time, Congress sought to provide an economic safety net for those retiring from the labor force.<sup>81</sup> Consequently, it used labor income as an easily identifiable demarcation point to determine annual contributions to what became known as Social Security.<sup>82</sup> Second, in 1943, when World War II was raging, the country needed a steady and more robust revenue stream. Using a new wage-withholding system, Congress saw labor income as a vast reservoir of wealth that could readily be tapped to underwrite its wartime-expenditure obligations.<sup>83</sup> Third, in the 1960s, President Lyndon Johnson launched a so-called war on poverty.<sup>84</sup> Capitalizing upon the success from taxing labor income for Social Security, Congress introduced Medicare and Medicaid to provide hospital and medical insurance to the elderly and indigent.<sup>85</sup>

These historic events led to the institution of massive entitlement programs and strengthened our nation's military might. But why did Congress opt to tax labor more heavily than other income sources? A number of factors led to this outcome.

One was administrative expediency. Labor income is difficult to camouflage. When taxpayers perform labor in their capacity as employees, they usually incur few related expenses; as such, whatever remuneration they receive gives rise to taxable income. Labor income also tends to involve the presence of third parties, in the form of employers. This is beneficial from the government's standpoint, since third-party employers facilitate tax withholding and information reporting, both of which result in better taxpayer compliance.<sup>86</sup> By way of contrast, the same is not always true of business profits, investment income, and capital gains. Production of these latter forms of income often involves deductible expenses and basis recoveries; in addition, third-party payers have historically been absent from many of these transactions, resulting in relatively lackluster compliance.<sup>87</sup>

Another factor pertains to economic theory. More specifically, a tax on labor income may cause some taxpayers to work more (this is known as the "income effect").<sup>88</sup> For low- and middle-

<sup>81</sup> See, e.g., H.R. 4120, 74th Cong. (1935) ("To alleviate the hazards of old age, unemployment, illness, and dependency . . .").

<sup>82</sup> Social Security Act (Act of August 14, 1935), ch. 531, 49 Stat. 620.

<sup>83</sup> Current Tax Payment Act of 1943, Pub. L. No. 68, ch. 120, 57 Stat. 126; Carolyn C. Jones, *Class Tax to Mass Tax: The Role of Propaganda in the Expansion of the Income Tax During World War II*, 37 BUFF. L. REV. 685 (1989). For an excellent historical overview of income tax withholding, see Richard L. Doernberg, *The Case Against Withholding*, 61 TEX. L. REV. 595, 599–604 (1982).

<sup>84</sup> President Lyndon Baines Johnson, First State of the Union Address (Jan. 8, 1964), <http://www.americanrhetoric.com/speeches/lbj1964stateoftheunion.htm>. [<https://perma.cc/NSF6-QA5R>].

<sup>85</sup> Social Security Amendments of 1965, Pub. L. No. 89-97, 79 Stat. 286.

<sup>86</sup> See generally Leandra Lederman, *Statutory Speed Bumps: The Roles Third Parties Play in Tax Compliance*, 60 STAN. L. REV. 695 (2007) (stating that "structural systems that engage third parties to help facilitate compliance with the federal income tax are . . . highly successful").

<sup>87</sup> INTERNAL REVENUE SERV., TAX GAP ESTIMATES FOR THE YEARS 2008–2010, at 2 (2016), <https://www.irs.gov/pub/irs-soi/p1415.pdf> [<https://perma.cc/VQ45-9A7Q>] ("Misreporting of income amounts subject to substantial information reporting and withholding is 1 percent; of income amounts subject to substantial information reporting but not withholding, it is 7 percent; and of income amounts subject to little or no information reporting, such as nonfarm proprietor income, it is 63 percent.").

<sup>88</sup> See generally A. B. ATKINSON & J. E. STIGLITZ, LECTURES ON PUBLIC ECONOMICS 27, 33–34 (1980); J. A. Mirrlees, *An Exploration in the Theory of Optimum Income Taxation*, 38 REV. ECON. STUD. 175 (1971).

income taxpayers, their participation in the labor market is likely inelastic; they need to put the proverbial “bread on the table,” and the imposition of taxes may thus cause them to increase their work hours.<sup>89</sup> Therefore, with the exception of financially well-to-do taxpayers (who may engage in more leisure activities and less work, which is known as the “substitution effect”),<sup>90</sup> a tax on labor income could be imposed with little or no negative effect on the labor market.<sup>91</sup>

A third factor is grounded in the notion of sufficiency. For a tax to have utility/functionality, there must be an adequate base upon which to impose a tax.<sup>92</sup> For example, in terms of revenue generation, the institution of a universal estate tax would probably be nonsensical for one simple reason: without imposing tax rates that the general public would likely consider confiscatory, not enough taxpayers perish annually with sufficient wealth to provide a sustainable tax base.<sup>93</sup> The same is not true of labor income. Relative to other income forms, it is plentiful.<sup>94</sup> Furthermore, labor income tends to be generated in a fairly steady stream, with few opportunities to defer receipt to later tax years.

A fourth factor pertains to political expediency. As the income tax system evolved in the United States, consider in whose hands power vested, namely, those who controlled the capital apparatus.<sup>95</sup> It comes as no surprise that the powerful elite devised the nation’s income tax system in a manner that imposed a greater tax burden on others than on themselves.<sup>96</sup> In an endeavor to make payroll taxes more politically palatable to the masses, though, Congress introduced tax withholding on wages, helping to ensure compliance while simultaneously alleviating taxpayers of the difficult administrative burden of having to put aside adequate savings to meet their annual tax obligations.<sup>97</sup>

---

<sup>89</sup> See Martin J. McMahon Jr. & Alice G. Abreu, *Winner-Take-All Markets: Easing the Case for Progressive Taxation*, 4 FLA. TAX REV. 1, 43–45 (1998) (analyzing the different substitution effects between low- and high-income taxpayers).

<sup>90</sup> See ATKINSON & STIGLITZ, *supra* note 88, at 27–28.

<sup>91</sup> See Joseph Bankman & Thomas Griffith, *Social Welfare and the Rate Structure: A New Look at Progressive Taxation*, 75 CAL. L. REV. 1905, 1964–65 (1987) (“Looking at the whole range of econometric studies of the labor supply, the most plausible conclusion is that the elasticity of substitution between consumption and leisure lies between 0.3 and 0.8 and almost certainly is less than the elasticity of 1.0 used in the Mirrlees model.”).

<sup>92</sup> See Joseph T. Sneed, *The Criteria of Federal Income Tax Policy*, 17 STAN. L. REV. 567, 570 (1965) (“Thus, when it is determined that a given amount of additional revenue is required, existing and possible additional taxes must be evaluated to determine their capacity to fulfill the need.”).

<sup>93</sup> See James M. Poterba, Steven F. Venti & David A. Wise, *Were They Prepared for Retirement? Financial Status at Advanced Ages in the HRS and AHEAD Cohorts 1* (Nat’l Bureau of Econ. Research, Working Paper No. 17824, 2012), <http://www.nber.org/papers/w17824> [<https://perma.cc/49YY-M4EC>] (“We find that a substantial fraction of persons die with virtually no financial assets—46.1 percent with less than \$10,000—and many of these households also have no housing wealth and rely almost entirely on Social Security benefits for support.”).

<sup>94</sup> See *supra* notes 81-85 and accompanying text.

<sup>95</sup> See generally CHARLES R. MORRIS, *THE TYCOONS: HOW ANDREW CARNEGIE, JOHN D. ROCKEFELLER, JAY GOULD, AND J.P. MORGAN INVENTED THE AMERICAN SUPERECONOMY* (2005); MATTHEW JOSEPHSON, *THE ROBBER BARONS* (1932).

<sup>96</sup> See Margaret Levi, *The Predatory Theory of Rule*, 10 POL. & SOC’Y 431, 438 (1981) (arguing that “all rulers are predatory in the sense that they, as much as they can, design property rights and policies meant to maximize their own personal power and wealth”).

<sup>97</sup> See Doernberg, *supra* note 83, at 595 (“The IRS claims that the use of withholding as a verification and collection technique is the most efficient method of obtaining the revenues necessary to provide government services.”).

*AUTOMATION AND THE INCOME TAX*

A fifth, and final, factor relates to the connection that Congress conveniently drew between the payment of payroll taxes and the subsequent receipt of retirement income in the form of Social Security. The structure of defined-benefit retirement plans provides a model for this justification. Under a defined-benefit retirement plan, workers contribute a set percentage of their income to a plan; and, depending upon their “overall years/months of service,” they later become entitled to fixed dollar amounts of annual retirement benefits.<sup>98</sup> In devising Social Security, the federal government, to provide financial security for the nation’s workforce, sought to replicate the defined-benefit plan structure via a mandated tax on labor income.<sup>99</sup>

In sum, administration and enforcement concerns, as well as economic efficiency, were principle rationales for taxing labor more than other sources of income in the formative years of our income tax system. Additionally, the political environment at the time and Congress’s desire to fund a retirement system provide further historical context for higher labor taxes.

b. Rationale for Business Profits and Investment Income Taxation

The United States has deep capitalistic roots echoed, in part, even in its Constitution.<sup>100</sup> More than a century after the nation declared its independence, when it came to devising a viable framework to raise needed revenue, capitalist tenets played a pivotal role in shaping the Code.<sup>101</sup> Congress accordingly devised an income tax system designed to promote capital growth and production and prioritized private property ownership. These objectives and their accomplishment manifested themselves in several salient ways.

To encourage taxpayers to acquire tools of production, the Code provides many robust incentives. For example, two of the most formidable are bonus and accelerated depreciation deductions encapsulated in Code §§ 168 and 179.<sup>102</sup> The Code also provides a series of incentives designed to promote private-party ownership and investment. A smattering of Code section examples helps illustrate this point: to encourage real estate ownership, the Code permits taxpayers to deduct their mortgage interest payments;<sup>103</sup> to make capital investments more attractive, dividend income is accorded preferential tax treatment;<sup>104</sup> and, finally, retirement accounts are

---

<sup>98</sup> Pension Benefit Guar. Corp. v. LTV Corp., 496 U.S. 633, 637 n.1 (1990) (stating that a “defined benefit plan is one that promises to pay employees, upon retirement, a fixed benefit under a formula that takes into account factors such as final salary and years of service with the employer”).

<sup>99</sup> See, e.g., Regina T. Jefferson, *Privatization: Not the Answer for Social Security Reform*, 58 WASH. & LEE L. REV. 1287, 1303–04 (2001) (“The defined benefit plan structure is currently used by the Social Security program, with the government effectively guaranteeing the delivery of the promised benefits.”).

<sup>100</sup> HOW CAPITALISTIC IS THE CONSTITUTION? (Robert A. Goldwin & William A. Schambra eds., 1982); (stating that some authors argue that capitalism is “essential for democracy as it was understood by the Founders and as it was established by the Constitution”); ARTHUR SELWYN MILLER, *THE SUPREME COURT AND AMERICAN CAPITALISM* (1968).

<sup>101</sup> See, e.g., Ajay K. Mehrotra & Julia C. Ott, *The Curious Beginnings of the Capital Gains Tax Preference*, 84 Fordham L. Rev. 2517, 2521 (2016) (“[T]he theories that support the capital gains preference are the product of shifting ideas and beliefs not only about economic growth, but also about the meaning of risk, wealth, and opportunity in modern American capitalism.”); Beverly I. Moran, *Capitalism and the Tax System: A Search for Social Justice*, 61 SMU L. REV. 337 (2008) (describing how the “father” of capitalism, Adam Smith, shaped the origins of the nation’s income tax system).

<sup>102</sup> See *supra* notes 56-57 and accompanying text.

<sup>103</sup> I.R.C. § 163(h)(3).

<sup>104</sup> I.R.C. § 1(h).

allowed to grow tax-free, sheltering vast amounts of income from taxation for years and decades to come.<sup>105</sup>

A lack of political will has also led business profits to be taxed rather moderately, particularly given that profits earned by small businesses and independent contractors have been historically difficult to monitor. Traditionally, there have been no third parties to issue tax information returns, taxpayers easily concealed profits by dealing in cash, and the Internal Revenue Service (IRS) lacked the resources to adequately police compliance.<sup>106</sup> As a result, when it comes to these sorts of trade and business enterprises, tax compliance has been abysmal.<sup>107</sup> Theoretically, Congress could have invigorated enforcement efforts by augmenting IRS funding and instituting other tax-compliance measures,<sup>108</sup> but many politicians and commentators have argued that this course of action would be too intrusive.<sup>109</sup>

Finally, capitalism (with its Puritan religious origins<sup>110</sup>) places an immense premium on savings in lieu of consumption.<sup>111</sup> In light of this bias, investment income in the form of interest,

---

<sup>105</sup> I.R.C. §§ 401–24.

<sup>106</sup> See, e.g., Associated Press, *Income Tax Audits Plummet as IRS Loses Agents to Budget Cuts*, FORTUNE (Mar. 5, 2017), <http://fortune.com/2017/03/05/income-tax-audits-irs-agents/> [<https://perma.cc/259R-U3E2>] (“The number of people audited by the IRS in 2016 year dropped for the sixth straight year, to just over 1 million. The last time so few people were audited was 2004. Since then, the U.S. has added about 30 million people.”); Gov. Accountability Office (GAO), *Enforcement of Tax Laws Remains High-Risk Area*, 2017 TAX NOTES TODAY 31-26, <https://www.taxnotes.com/tax-notes-today/compliance/enforcement-tax-laws-remains-high-risk-area-gao-says/2017/02/16/gdlj> [<https://perma.cc/CK4G-QQTS>] (Feb. 16, 2017) (“Between fiscal years 2011 and 2016, IRS’s annual appropriations declined about \$900 million. Likewise, staffing has declined: full-time equivalent staff members funded by annual appropriations declined by 12,000 between fiscal year 2011 and fiscal year 2016, a 13 percent reduction. At the same time, IRS’s enforcement performance has declined . . . . Reductions in examinations can reduce revenue collected and may indirectly reduce voluntary compliance.”); Bruce Bartlett, *Slashing the IRS Budget—Penny-Wise and Pound-Foolish*, FISCAL TIMES (Jan. 17, 2014), <http://www.thefiscaltimes.com/Columns/2014/01/17/Slashing-IRS-Budget-Penny-Wise-and-Pound-Foolish> [<https://perma.cc/2FNS-YYLB>] (detailing how budgetary constraints restrict the IRS’s ability to fulfill its taxpayer-compliance mission).

<sup>107</sup> See, e.g., Stacy Cowley, *Why the I.R.S. Fails to Crack the Small-Business Tax Nut*, N.Y. TIMES (June 15, 2016), [https://www.nytimes.com/2016/06/16/business/smallbusiness/why-the-irs-fails-to-crack-the-small-business-tax-nut.html?\\_r=0](https://www.nytimes.com/2016/06/16/business/smallbusiness/why-the-irs-fails-to-crack-the-small-business-tax-nut.html?_r=0) (“Most of that “tax gap” is income that goes unreported, and the biggest chunk of it, by far—\$125 billion—is individual business income.”).

<sup>108</sup> For example, Congress has periodically made some feeble attempts to increase small-business tax compliance. See, e.g., Joel Slemrod et al., *Does Credit-Card Information Reporting Improve Small-Business Tax Compliance?*, 149 J. PUB. ECON. 1 (2017) (explaining how the Form 1099-K, which provides the I.R.S. with information about electronic sales, has increased income reporting).

<sup>109</sup> See Robert E. Brown & Mark J. Mazur, *The National Research Program: Measuring Taxpayer Compliance Comprehensively*, 51 U. KAN. L. REV. 1255 (2003) (explaining how the I.R.S. instituted the so-called National Research Program as a successor to the Taxpayer Compliance Measurement Program in large part because the latter was deemed too intrusive and time-consuming for the average taxpayer).

<sup>110</sup> Mark Valeri, *HEAVENLY MERCHANDIZE: HOW RELIGION SHAPED COMMERCE IN PURITAN AMERICA* (2010) (exploring the interconnectedness between Puritan religious doctrine and the gradual spread of capitalism in colonial America).

<sup>111</sup> Marjorie E. Kornhauser, *The Morality of Money: American Attitudes Toward Wealth and the Income Tax*, 70 IND. L.J. 119, 133-34 (1994) (“In America, Social Darwinism . . . reach[ed] its peak in 1882 and [was] endorsed by entrepreneurs such as Andrew Carnegie. Progress resulted from the economic virtues of frugal living and industriousness—lots of saving and little leisure and consumption.”). Notwithstanding the proposition that levying an income tax supposedly constitutes a disincentive to save, empirical studies have yet to substantiate this position. Compare Michael J. Boskin, *Taxation, Saving, and the Rate of Interest*, 86 J. POLIT. ECON. 15 (1978), and Laurence

*AUTOMATION AND THE INCOME TAX*

dividends, and rents enjoys a relatively light tax burden insofar as they constitute the embodiment of savings (i.e., bank deposits, capital investment, and real estate ownership). As such, to the extent possible, the Code seeks to minimize and, on occasion, even exempt such earnings from taxation.<sup>112</sup>

c. Rationale for Capital Gains Income Taxation

Over the past century, the Code has afforded preferential tax treatment to long-term capital gains relative to ordinary income.<sup>113</sup> The historic tax rate chart found in the appendix illustrates this point.

A central justification<sup>114</sup> for the capital gains tax rate preference, which has likely played a major role in historically low capital gains rates, is the so-called lock-in effect. The lock-in effect refers to the powerful disincentive to engage in a sale or other taxable disposition of property (in other words, a realization event) because doing so triggers taxation.<sup>115</sup> While the precise magnitude of the lock-in effect depends on many factors,<sup>116</sup> the most prominent among them is the tax rate imposed. When that rate is low, the disincentives are still present but matter less; when that tax rate is high, the disincentive to sell is much more potent.<sup>117</sup>

An additional factor in taxing capital gains lightly or not at all pertained to administrative practicalities. In particular, the tax bases of many assets were deemed hard or impossible to know. For example, investors who held stock or securities for many years struggled to identify the tax basis that they had in their investments; poor record keeping along with dividend reinvestment

---

S. Seidman & Kenneth A. Lewis, *The Consumption Tax and the Saving Elasticity*, 52 NAT'L TAX J. 67 (1999), with Robert E. Hall, *Intertemporal Substitution in Consumption*, 96 J. POL. ECON. 339 (1988), and A. Lans Bovenberg, *Tax Policy and National Saving in the United States: A Survey*, 42 NAT'L TAX J. 123 (1989).

<sup>112</sup> See, e.g., I.R.C. § 103 (exempting interest on state bonds from tax).

<sup>113</sup> See *supra* Section II.B.

<sup>114</sup> Commentators have offered additional justifications for the capital gains preference, although it's unclear how much those justifications have played a role in the history of capital gains rates. For example, preferential rates may compensate taxpayers for taxes on gains that are inflationary rather than true economic gains and may serve to alleviate the "double tax" on corporate profits insofar as a sale of corporate stock is concerned. But for a refutation of many of these additional justifications, see Noel B. Cunningham & Deborah H. Schenk, *The Case for a Capital Gains Preference*, 48 TAX L. REV. 319 (1993).

<sup>115</sup> See generally Charles C. Holt & John P. Shelton, *The Lock-in Effect of the Capital Gains Tax*, 15 NAT'L TAX J. 337 (1962).

<sup>116</sup> For example, a taxpayer will likely be influenced by how much taxable appreciation is built into the asset. If an asset has only a negligible basis—such as a founder's stock of a corporation—and will be taxed at a relatively high tax rate, the combined effect is daunting. A share of stock with a basis of \$1 that is sold for \$1,000 will produce a tax liability of \$299.70 if taxed at a 30 percent rate (i.e., .3 x (\$1,000 – \$1)). In contrast, if the same stock was sold for \$1,000 but had only appreciated by \$100 (i.e., with a basis of \$900), the sale would produce only \$30 of tax assuming the same 30 percent rate (i.e., .3 x (\$1,000 – \$900)).

<sup>117</sup> There is considerable literature on the effect of rate changes on realization rates. See, e.g., CONG. BUDGET OFFICE, HOW CAPITAL GAINS TAX RATES AFFECT REVENUES: THE HISTORICAL EVIDENCE (1988), <https://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/84xx/doc8449/88-cbo-007.pdf> [<https://perma.cc/G85N-MR9B>]; CONG. BUDGET OFFICE, PERSPECTIVES ON THE OWNERSHIP OF CAPITAL ASSETS AND THE REALIZATION OF CAPITAL GAINS (1997), <https://www.cbo.gov/sites/default/files/105th-congress-1997-1998/reports/capgains.pdf> [<https://perma.cc/5KSU-VBJ6>]; George Zodrow, *Economic Analyses of Capital Gain Taxation: Realizations, Revenues, Efficiency and Equity*, 48 TAX L. REV. 419 (1993); Jane G. Gravelle, *Can a Capital Gains Tax Cut Pay for Itself?*, 48 TAX NOTES 209 (1990); J. Andrew Hoerner, *Treasury's Capital Gains Estimates: Mr. Economist Goes to Washington*, 44 TAX NOTES 141 (1989).

plans and redemptions plagued tax basis identifications and computations.<sup>118</sup> A taxpayer's death also clouded accurate tax basis identifications.<sup>119</sup> The lack of third-party reporting further obfuscated accurate tax basis identifications; when it came to taxpayers reporting their gains and losses, they were essentially on the honor system, which has historically not boded well for tax compliance.<sup>120</sup>

Another rationale for the preferential treatment of capital gains is historical in nature. As previously pointed out, facets of our nation's income tax system undoubtedly originated from old English law.<sup>121</sup> Under these laws, capital gains were deemed principal, not income; this same psychology likely pervaded the mind-set of those who initially crafted the income tax and who, by providing a lower tax rate, sought to strike a compromise between those who thought that capital gains should be exempt from tax and those who thought that capital gains should be treated akin to ordinary income.<sup>122</sup>

### C. Tax Revenue Generation from Labor and Capital Income under the Code

To understand the respective roles that labor and capital income play in revenue generation, it is useful first to examine the overall makeup of federal tax revenues. In recent years, the federal

---

<sup>118</sup> See, e.g., Joseph M. Dodge & Jay A. Soled, *Debunking the Basis Myth Under the Income Tax*, 81 IND. L.J. 539, 542 (2006) (“That is, under the current income tax regime, (a) taxpayers often lack the acumen and requisite records and information to fulfill their tax basis reporting obligations, (b) the rules themselves are unwieldy and complicated, and (c) the IRS is unable to fulfill its compliance mission insofar as basis and gain monitoring is concerned.”).

<sup>119</sup> See, e.g., *Carryover Basis Provisions: Hearing Before the House Comm. on Ways and Means*, 96th Cong., 1st Sess. 13 (1979) at 81 (statement of American Bankers Association) (noting that Manufacturer's Hanover Trust Company reported that cost basis information for marketable securities was impossible to locate in 22 percent of estates, required time and research in 44 percent, and was readily available in 34 percent); *id.* at 126–29 (statement of the American College of Probate Counsel) (offering letters from practitioners indicating the difficulty in reconstructing basis of old stock certificates, closely held stock, and stock that underwent recapitalizations or stock splits). For a detailed look at the tax bar's critique of the carryover basis rule, see Howard J. Hoffman, *The Role of the Bar in the Tax Legislative Process*, 37 TAX L. REV. 411, 448–68 (1982). Some of the problems in ascertaining historical basis are discussed in THOMAS J. MCGRATH & JONATHAN G. BLATTMACHR, *CARRYOVER BASIS UNDER THE 1976 TAX ACT* 191–94, 222–28 (1977).

<sup>120</sup> See U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-06-603, *CAPITAL GAINS TAX GAP* (2006), <http://www.gao.gov/new.items/d06603.pdf> [<https://perma.cc/CFD5-94D8>] (indicating that, of all individual taxpayers who misreported securities sales, roughly two-thirds of taxpayers underreported their capital gains and one-third overreported).

<sup>121</sup> See *supra* Section II.A.

<sup>122</sup> Across the globe, countries tax capital gains in a whole host of ways. See Rainer Niemann & Caren Sureth, *Sooner or Later?—Paradoxical Investment Effects of Capital Gains Taxation Under Simultaneous Investment and Abandonment Flexibility*, 22 J. EUR. ACCT. REV. 367, 368 (2013):

Other countries do not tax capital gains at all if some preconditions are met. For example, Greece, Latvia, Poland, Romania, and Switzerland usually refrain from taxing capital gains on selling non-business property. According to Austrian, Danish, Dutch, Estonian, Bulgarian, Finnish, French, German, Hungarian, Spanish, and Swedish tax law, gains and losses on the disposal of business property are taxable as ordinary income, whereas gains on selling non-business securities are subject to a flat capital gains tax rate. In the Czech Republic, Great Britain, Lithuania, Luxembourg, Portugal, and Slovenia, private capital gains are tax-exempt if a certain period of time is allowed to elapse between acquisition and disposal. Even countries with tax systems close to theoretically ideal tax systems, such as the Nordic Dual Income Tax, have developed a variety of capital gains tax regimes.

*AUTOMATION AND THE INCOME TAX*

government has collected around \$3 trillion in revenue annually from taxes, duties, and other government fees (\$3.3 trillion in 2016).<sup>123</sup> Individual income taxes generally make up approximately half of the total revenue collected (47 percent for 2016), while payroll taxes comprise about one-third of total revenue (34 percent for 2016).<sup>124</sup> The corporate income tax contributed 9 percent of total revenues for 2016, and the remaining 9 percent included estate and gift taxes; excise taxes; and other miscellaneous taxes, duties, and fees.<sup>125</sup>

Individual income taxes, the largest source of federal revenue, consist of taxes on wages as well as taxes on investments, business income, and capital gains. While the above-cited data does not break down federal income tax revenues by income source, statistics are available from the IRS. The agency's studies indicate that the majority of individual income is earned from salary and wages (approximately 70 percent), as opposed to business and investments (approximately 16 percent) or capital gains (approximately 5 percent).<sup>126</sup> The foregoing percentage outcomes signify that a substantial majority of taxable income is a product of labor. By extension, the majority of tax revenues flowing from the individual income tax are also derived from labor. When combined with payroll taxes (which are no doubt labor-centric), taxes on labor clearly represent a majority of federal tax revenue.

When it comes to taxes on capital gains, the exact opposite is true. Specifically, data from the Treasury Department indicates that tax revenues from long-term capital gains represent only a small portion of overall federal tax revenue. For example, in 2013, tax revenue from long-term capital gains was approximately \$86 billion,<sup>127</sup> which represented just 6.5 percent of total federal income taxes collected (\$1.3 trillion) and just 3.1 percent of all federal revenue collected (\$2.8 trillion).<sup>128</sup> Similarly, in 2014, taxes on long-term capital gains were approximately \$126 billion,<sup>129</sup> representing 9 percent of federal income taxes (\$1.4 trillion) and just 4.2 percent of all federal revenue collected (\$3 trillion).<sup>130</sup>

While these dollar figures and percentages are, in part, driven by the fact that most income does not derive from capital gains, preferential tax treatment applied to capital gains also plays a

---

<sup>123</sup> CONG. BUDGET OFFICE, *OPTIONS FOR REDUCING THE DEFICIT: 2017–2026*, at 119 (Dec. 2016), <https://www.cbo.gov/publication/52142> [<https://perma.cc/6DCC-GABZ>].

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> Percentage calculations are on file with the authors and are based on data from INTERNAL REVENUE SERV., *STATISTICS OF INCOME TAX STATS: INDIVIDUAL INCOME TAX RETURNS PUBLICATION 1304 tbl.A* (2014), [https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report#\\_tbla](https://www.irs.gov/statistics/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report#_tbla). [<https://perma.cc/7SNK-ASRJ>]. Total income from salaries and wages for 2013 was reported to be approximately \$6.5 trillion, while total income from all sources was reported to be approximately \$9.2 trillion. Business and investment income for this purpose includes income from: (1) interest (taxable and tax-exempt); (2) dividends (qualified and ordinary); (3) business and professional activities; and (4) rents, royalties, partnerships, trusts and estates. Capital gains income is comprised of net capital gains and capital gains distributions.

<sup>127</sup> OFFICE OF TAX ANALYSIS, U.S. DEP'T OF THE TREASURY, *TAXES PAID ON LONG-TERM CAPITAL GAINS*, <https://www.treasury.gov/resource-center/tax-policy/tax-analysis/Documents/Taxes-Paid-on-Long-Term-Capital-Gains.pdf> [<https://perma.cc/V4JY-TB8J>].

<sup>128</sup> OFFICE OF MGMT. & BUDGET, *HISTORICAL TABLES, RECEIPTS BY SOURCE: 1934–2022 tbl.2.1* (June 15, 2018), <https://www.whitehouse.gov/omb/budget/Historicals> [<https://perma.cc/RP94-78Y8>].

<sup>129</sup> *See* *TAXES PAID ON LONG-TERM CAPITAL GAINS*, *supra* note 127.

<sup>130</sup> *Id.*

significant role in the low revenue receipts associated with such income. The Joint Committee on Taxation estimates that the preferential tax rate on long-term capital gains and qualified dividends alone cost the government \$130.9 billion in lost tax revenue in 2016. Likewise, in 2016, the exclusion of capital gains at death is estimated to have cost the government lost revenue of \$32.9 billion; the exclusion of capital gains from sales of personal residences, \$29.2 billion; and the deferral of gains on like-kind exchanges by individuals, \$5.9 billion.<sup>131</sup>

In sum, of the roughly 3 trillion of tax revenue collected each year, well over half comes from income and payroll taxes on labor; taxes levied on business and investment income make up a smaller portion of that revenue; and capital gains taxes contribute only a very small percentage of overall revenue. In an era when labor was the dominant driver of the economy, this tax paradigm made sense: the government could readily tap into a vast revenue reservoir. However, as discussed in the next section, the technological revolution may alter the prominence of labor in the economy. If that is the case, the revenue implications of such a change may be significant insofar as this vast revenue reservoir is likely to gradually (and significantly) diminish in size.<sup>132</sup>

### III. THE TECHNOLOGICAL REVOLUTION AND THE LABOR-CAPITAL DYNAMIC

Memorable, salient designations are typically reserved for major or transformative events. In recognition that we are now in the midst of this sort of happening, the current time period has earned the moniker “Technological Era,”<sup>133</sup> emblematic of the fact that monumental changes are occurring that are challenging the status quo. While physical and intellectual labor were once commonplace features of everyday society, technological advancements are now taking over both of these roles in lieu of human capital.

The subsections below elaborate on how capital in the form of technological advancement is uprooting labor. Subsection A details this dynamic; subsection B then examines the implications to the income tax system associated with these changes; and subsection C next sets forth the potential long-term revenue consequences that these changes may produce.

#### A. Technological Changes That Curtail or Eliminate the Need for Labor

Technological advances affect every facet of the economy. From the mundane removal of street trash to the ultra-sophistication of laparoscopic surgery, technology has been touching the daily existence of virtually every taxpayer at a pace that is unprecedented. As evidence of the speed at which technological changes are progressing, consider Moore’s Law, which predicts that computer processing power will double approximately every two years.<sup>134</sup> Over half a century ago,

---

<sup>131</sup> JOINT COMM. ON TAXATION, JCX-3-17, ESTIMATES OF FEDERAL TAX EXPENDITURES FOR FISCAL YEARS 2016–2020, at 32–33 (2017), <https://www.jct.gov/publications.html?func=startdown&id=4971> [<https://perma.cc/A7N7-7YWS>].

<sup>132</sup> Professor Orly Mazur has also argued that the tax base will likely shrink if labor income declines due to automation. See Orly Mazur, *Taxing the Robots*, PEPPERDINE L. REV. (forthcoming 2018) (manuscript at 17), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3231660](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3231660) [<https://perma.cc/MM7F-EMZ6>].

<sup>133</sup> See KLAUS SCHWAB, THE FOURTH INDUSTRIAL REVOLUTION (2017) (describing the numerous technological advancements of the present time period).

<sup>134</sup> Gordon E. Moore, *Cramming More Components onto Integrated Circuits*, ELECTRONICS 114 (Apr. 19, 1965), [http://www.monolithic3d.com/uploads/6/0/5/5/6055488/gordon\\_moore\\_1965\\_article.pdf](http://www.monolithic3d.com/uploads/6/0/5/5/6055488/gordon_moore_1965_article.pdf)

*AUTOMATION AND THE INCOME TAX*

this prediction was made and, to the surprise of many scientists, engineers, and commentators, it holds true even today.<sup>135</sup>

But these technological advances do not remain untapped in researchers' labs. Instead, these advances have been brought to market; in endeavors to secure workplace efficiency, their adoption has been widespread. With the assistance of technological advances, work that in yesteryear might take months or even years to complete can now be accomplished in a matter of a few hours, minutes, or even seconds.<sup>136</sup> Along the same lines, work that once required hundreds or thousands of workers to complete may now be accomplished by just a few workers or even a single worker.<sup>137</sup>

This situation has the potential to wreak havoc in the labor market. Although statistics vary across the board, artificial intelligence puts jobs at risk of being lost.<sup>138</sup> And at least for the foreseeable future, this concern is anticipated to continue.<sup>139</sup>

One response to this concern may be that we have weathered technological change in the past and the labor force has emerged relatively unscathed.<sup>140</sup> But there is reason to believe that the present transformation is fundamentally different. The pace and scale of technological

---

[<https://perma.cc/PN3W-SN2J>]; *see also* MOORE'S LAW, <https://www.moorelaw.org/> [<https://perma.cc/23XY-E7DB>].

<sup>135</sup> Dan Hutcheson, *Transistor Production Has Reached Astronomical Scales*, IEEE SPECTRUM (Apr. 2, 2015), <http://spectrum.ieee.org/computing/hardware/transistor-production-has-reached-astronomical-scales> [<https://perma.cc/WU4B-TAJG>]; Thomas L. Friedman, Opinion, *Moore's Law Turns 50*, N.Y. TIMES (May 13, 2015), <http://nyti.ms/1JGIp5t>.

<sup>136</sup> *See, e.g.*, Nick Heath, *Let's Try and Not Have a Human Do It: How One Facebook Techie Can Run 20,000 Servers*, ZDNET (2013), <https://www.zdnet.com/article/lets-try-and-not-have-a-human-do-it-how-one-facebook-techie-can-run-20000-servers/> [<https://perma.cc/ML6Y-KAYQ>] ("How many people does it take to run 20,000 servers? In the case of Facebook just the one.").

<sup>137</sup> *See, e.g.*, Stephanie Clifford, *U.S. Textile Plants Return, with Floors Largely Empty of People*, N.Y. TIMES (Sept. 19, 2013), [https://www.nytimes.com/2013/09/20/business/us-textile-factories-return.html?pagewanted=all&\\_r=0](https://www.nytimes.com/2013/09/20/business/us-textile-factories-return.html?pagewanted=all&_r=0) (explaining how a factory that once employed 2,000 employees can easily manage now with just 140 employees); Wade Roush, *Hamburgers, Coffee, Guitars, and Cars: A Report from Lemnos Labs*, XCONOMY (June 12, 2012), <http://www.xconomy.com/san-francisco/2012/06/12/hamburgers-coffee-guitars-and-cars-a-report-from-lemnos-labs/#> [<https://perma.cc/S4TD-4RW6>] ("Our device isn't meant to make employees more efficient," said co-founder Alexandros Vardakostas. "It's meant to completely obviate them.").

<sup>138</sup> James Vincent, *Robots Do Destroy Jobs and Lower Wages, Says New Study*, THE VERGE (Mar. 28, 2017), <https://www.theverge.com/2017/3/28/15086576/robot-jobs-automation-unemployment-us-labor-market> [<https://perma.cc/C3QK-2V67>]. ("[The study] found that each new robot added to the workforce meant the loss of between 3 and 5.6 jobs in the local commuting area. Meanwhile, for each new robot added per 1,000 workers, wages in the surrounding area would fall between 0.25 and 0.5 percent.").

<sup>139</sup> Calum McClelland, *The Impact of Artificial Intelligence – Widespread Job Losses*, IOT FOR ALL (Aug. 17, 2018), <https://www.iotforall.com/impact-of-artificial-intelligence-job-losses/> [<https://perma.cc/5S8K-52M4>] ("A two-year study from McKinsey Global Institute suggests that by 2030, intelligent agents and robots could eliminate as much as 30 percent of the world's human labor, displacing the jobs of as many as 800 million people.").

<sup>140</sup> *See* Ruchir Sharma, *No, That Robot Will Not Steal Your Job*, N.Y. TIMES (Oct. 7, 2017), <https://www.nytimes.com/2017/10/07/opinion/sunday/no-that-robot-will-not-steal-your-job.html> ("If robots threatened human labor, human joblessness would be growing. But it's not. In fact, since 2008, job growth has been strongest in countries like Germany and Japan, which deploy the most robots."); Katie Allen, *Technology Has Created More Jobs Than It Has Destroyed, Says 140 Years of Data*, GUARDIAN (Aug. 18, 2015), <https://www.theguardian.com/business/2015/aug/17/technology-created-more-jobs-than-destroyed-140-years-data-census> [<https://perma.cc/Q8QY-J42U>] ("Study of census results in England and Wales since 1871 finds rise of machines has been a job creator rather than making working humans obsolete.").

advancement surpasses what we have experienced in the past. Computers can accomplish exponentially more than they could historically and at a cheaper cost than ever before.<sup>141</sup> Even under a more optimistic view—i.e., that new jobs will eventually emerge to replace the ones that are lost—the labor market is still likely to experience significant disruptions in the short term.<sup>142</sup>

The ubiquity of technological advances and their effects on the labor market can be categorized into two general baskets: (1) physical labor and (2) intellectual labor. Below is a short exposition of each.

### 1. *Physical Labor*

For most of human civilization, production of food, shelter, and clothing required an intense amount of physical labor: fields and domesticated animals had to be planted and tended to, respectively; wood, stones, and bricks had to be gathered and then nailed or laid and mortared; and cotton, silk, and skins had to be harvested, carded, and tanned, respectively. This physical labor was all-consuming and, in the never-ending search for more able hands, was a major factor in universally high birth rates.<sup>143</sup>

For many millennia, physical labor remained a staple in people's lives. Only after the Industrial Revolution began to hit its full stride did technology alleviate some of the physical drudgeries associated with daily existence. While there are many examples of technological innovations that played transformative roles during the Industrial Revolution, two stand out: the assembly line and the combustible engine. Introduced by Henry Ford, the assembly line significantly increased productivity and alleviated much of the physical labor associated with consumer goods production.<sup>144</sup> The combustible engine led to the genesis of the field tractor, which made agricultural production considerably less physically demanding.<sup>145</sup>

In terms of reducing the need for physical labor in the workplace, recent technological advances have gone far beyond those that the Industrial Revolution produced. For example,

---

<sup>141</sup> Ryan Abbott & Bret Bogenschneider, *Should Robots Pay Taxes? Tax Policy in the Age of Automation*, 12 HARV. L. & POL'Y REV. 145, 158-59 (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2932483](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2932483) [<https://perma.cc/E25G-63HF>].

<sup>142</sup> *Id.* at 159 (“During past episodes of widespread automation and technological change, it took decades to develop new worker skill sets on a significant scale and to build new job markets.”).

<sup>143</sup> John C. Caldwell & Thomas Schindlmayr, *Explanations of the Fertility Crisis in Modern Societies: A Search for Commonalities*, 57 POPULATION STUD. 241, 256 (2003) (“As industrialization spreads and incomes rise, the evidence grows that rich, highly urbanized and educated countries with few families working in agriculture may not reproduce themselves. Simply, the family is no longer the production unit.”).

<sup>144</sup> See generally RAY BATCHELOR, HENRY FORD: MASS PRODUCTION, MODERNISM AND DESIGN (1994).

<sup>145</sup> See generally William J. White, *Economic History of Tractors in the United States*, EH.NET, <https://eh.net/encyclopedia/economic-history-of-tractors-in-the-united-states/> [<https://perma.cc/8XAG-9YLY>]; see also ERIK BRYNJOLFSSON & ANDREW MCAFEE, THE SECOND MACHINE AGE: WORK, PROGRESS, AND PROSPERITY IN A TIME OF BRILLIANT TECHNOLOGIES 176 (2014).

*AUTOMATION AND THE INCOME TAX*

machinery now exists that can prune an orchard,<sup>146</sup> milk cows,<sup>147</sup> and harvest entire fields of crops.<sup>148</sup> Other machinery can build skyscrapers that eclipse small mountains<sup>149</sup> or construct prefabricated homes for shipment.<sup>150</sup> Finally, still other machinery is starting to be developed with the expectation that it can stitch together the finest gossamer gowns and do so continuously, from dawn to dusk every morning, afternoon, and evening.<sup>151</sup>

Opportunities to engage in physical labor remain—but usually by choice, not necessity. Consider the fact that before the middle of the nineteenth century, commercial gyms did not exist—and for good reason: members of the general populace apparently already endured enough on-the-job physical labor that they did not need to rely upon a third-party source to secure a physical workout. Over the last several decades, the advent of commercial gyms and the success that they have enjoyed speak volumes regarding the diminishing role that physical labor plays in the twenty-first-century economy.<sup>152</sup>

## 2. Intellectual Labor

The use of technology in performing intellectual labor is pervasive. Machinery can perform the same intellectual tasks as humans, often more efficiently, and not need personal, sick, or vacation days.

---

<sup>146</sup> Peter Murray, *Automation Reaches French Vineyards with a Vine-Pruning Robot*, SINGULARITYHUB (Nov. 26, 2012), <https://singularityhub.com/2012/11/26/automation-reaches-french-vineyards-with-a-vine-pruning-robot/> [<https://perma.cc/7345-RBFV>] (“Now that Wall-Ye V.I.N. has been built we can rest assured that there are no jobs too sacred to be handed over to the automated expertise of robots. Wall-Ye is a robot that takes the human touch out of caring for those grape vines that make French wines among the best in the world.”).

<sup>147</sup> See Kaleigh Rogers, *Robots Are Milking Cows for Dairy, Data*, MOTHERBOARD (Feb. 26, 2015), [https://motherboard.vice.com/en\\_us/article/robots-are-milking-cows-for-dairy-data](https://motherboard.vice.com/en_us/article/robots-are-milking-cows-for-dairy-data) [<https://perma.cc/2PBR-X9R2>] (“Milking has been semi-automated for decades now, but it still requires a human to corral the animals, clean the cows’ udders, and hook up and detach the milking machine. Robotic milkers eliminate the need for human intervention: it’s just animal and machine.”).

<sup>148</sup> See Tim Hornyak, *Strawberry-Picking Robot Knows When They’re Ripe*, CNET (Dec. 13, 2010), <https://www.cnet.com/news/strawberry-picking-robot-knows-when-theyre-ripe/> (“Strawberry fields will forever be changed by robots that can automatically identify and pick ripe berries, according to Japanese researchers.”).

<sup>149</sup> See generally Adam Hadhazy, *These Are the World’s 21 Tallest Buildings*, POPULAR MECHANICS (Feb. 13, 2015), <http://www.popularmechanics.com/technology/design/g1705/21-tallest-buildings-in-the-world/> [<https://perma.cc/JT2Q-2AZY>].

<sup>150</sup> See generally Peter Gössel, Arnt Cobbers & Oliver Jahn, *A Brief History of Prefab*, ARCHITECTURE WK. (Oct. 3, 2012), [http://www.architectureweek.com/2012/10/03/design\\_1-1.html](http://www.architectureweek.com/2012/10/03/design_1-1.html) [<https://perma.cc/J46J-2AYP>].

<sup>151</sup> See, e.g., Rina Raphael, *Is This Sewing Robot the Future of Fashion*, FAST COMPANY (Jan. 24, 2017), <https://www.fastcompany.com/3067149/is-this-sewing-robot-the-future-of-fashion> [<https://perma.cc/FNQ5-2PSR>] (“Startup Sewbo has figured out how to get a machine to sew an entire garment, and it may finally push clothing factories to fully automate.”).

<sup>152</sup> See, e.g., Eric Chaline, *School for Naked Exercise: A History of the Gym*, BOSTON GLOBE (Jan. 3, 2016), <https://www.bostonglobe.com/ideas/2016/01/03/school-for-naked-exercise-history-gym/laHtSCiDhCuekb7LDrCPO/story.html> [<https://perma.cc/WG4R-GM8V>]. (the article discusses the commercial gyms that began to appear in Europe in the mid-19th century, saying: “What had happened between 1820 and 1850 to account for this exercise revolution? Primarily, the rapid industrialization, democratization, and urbanization of Western Europe, with France and Great Britain at the industrial and political forefront.”).

Over time, there has been no discernible difference in the intellect between us and our predecessors.<sup>153</sup> The acclaimed intellectual works of the twentieth century, for example, do not demonstrate any greater intellectual prowess than those dating back to Ancient Greece. In other words, from a strict cerebral vantage point, there has not been any noticeable progression. Nevertheless, our ability to store, retrieve, and process data has never been greater. Computer hard drives and the “cloud” permit almost unlimited storage capacity.<sup>154</sup> Access to this information is unparalleled: in milliseconds, we can retrieve virtually any electronic information that we need.<sup>155</sup> And in terms of data manipulation, computers open the door to processing at lightning speeds.<sup>156</sup> Therefore, while we are no smarter intellectually than our predecessors, technology now permits us to do far more with our existing ingenuity.

The capacity to do far more with the same intellect has affected the labor market. In many instances, intellectually intense jobs either no longer exist or are not as time intensive, thus requiring less human intellectual labor. Consider legal research. It once required attorneys to scour the library for sources; photocopy material; and, if need be, transcribe findings into legal memoranda and briefs.<sup>157</sup> Now, often with just a few keystrokes, attorneys can find governing

---

<sup>153</sup> See, e.g., Steve Connor, *Human Intelligence ‘Peaked Thousands of Years Ago and We’ve Been on an Intellectual and Emotional Decline Ever Since*, INDEPENDENT (Nov. 12, 2012), <http://www.independent.co.uk/news/science/human-intelligence-peaked-thousands-of-years-ago-and-weve-been-on-an-intellectual-and-emotional-8307101.html> [https://perma.cc/7UES-FFWF] (“Professor Gerald Crabtree, who heads a genetics laboratory at Stanford University in California, has put forward the iconoclastic idea that rather than getting cleverer, human intelligence peaked several thousand years ago and from then on there has been a slow decline in our intellectual and emotional abilities.”).

<sup>154</sup> MARTIN FORD, RISE OF THE ROBOTS: TECHNOLOGY AND THE THREAT OF A JOBLESS FUTURE 63–64 (2015) (“For example, computer memory capacity and the amount of digital information that can be carried on fiber-optic lines have been both experienced consistent exponential increases. Nor is the acceleration confined to computer hardware; the efficiency of some software algorithms has soared at a rate far in excess of what Moore’s Law alone would predict.”); Thomas L. Friedman, *Owning Your Own Future*, N.Y. TIMES (May 10, 2017), <https://www.nytimes.com/2017/05/10/opinion/owning-your-own-future.html> (emphasis in original):

Mark Bohr, Intel’s senior fellow for technology, explained to me that Intel’s main workhorse microprocessor today is the 14-nanometer chip it introduced in 2014. It packs 37.5 million transistors *per square millimeter*. By the end of 2017, thanks to Moore’s Law, Intel will begin producing a 10-nm chip that will pack “100 million transistors per square millimeter—more than double the previous density with less heat and power usage,” said Bohr.

<sup>155</sup> See, e.g., MICHAEL P. LYNCH, THE INTERNET OF US: KNOWING MORE AND UNDERSTANDING LESS IN THE AGE OF BIG DATA 6-7 (2017) (“We used to say ‘seeing is believing’; now, googling is believing. With 24/7 access to nearly all of the world’s information at our fingertips, we no longer trek to the library or the encyclopedia shelf in search of answers. We just open our browsers, type in a few keywords and wait for the information to come to us.”).

<sup>156</sup> See, e.g., PRESIDENT’S COUNCIL OF ADVISORS ON SCI. & TECH., REPORT TO THE PRESIDENT AND CONGRESS: DESIGNING A DIGITAL FUTURE: FEDERALLY FUNDED RESEARCH AND DEVELOPMENT IN NETWORKING AND INFORMATION TECHNOLOGY 71 (Dec. 2010), <https://www.hsdl.org/?view&did=10223> [https://perma.cc/Y5C5-EN5Y] (“Grötschel, an expert in optimization, observes that a benchmark production planning model solved using linear programming would have taken 82 years to solve in 1988, using the computers and the linear programming algorithms of the day. Fifteen years later—in 2003—this same model could be solved in roughly 1 minute, an improvement by a factor of roughly 43 million.”).

<sup>157</sup> See generally Steven M. Barkan, *On Describing Legal Research*, 80 MICH. L. REV. 925 (1982) (reviewing J. MYRN JACOBSTEIN & ROY M. MERSKY, FUNDAMENTALS OF LEGAL RESEARCH (2d ed. 1981)).

*AUTOMATION AND THE INCOME TAX*

authority (assuming it exists); send it to their printers; and, if need be, copy and paste their findings.<sup>158</sup>

The role that technology has played in terms of facilitating legal research is just the tip of the iceberg. Technological advancements have also led to the elimination or diminishment of jobs such as toll collectors, telephone operators, and bank tellers. And with the widespread use of self-driving automobiles and trucks around the corner,<sup>159</sup> whole other industries (e.g., taxi driving and trucking) are likely soon to come to a screeching halt or disappear into complete oblivion.

B. Consequences Associated with Labor Income's Diminishment

The labor market's transformation has important consequences for the way in which the government raises revenue to meet its expenditures, particularly when the first decade of the twenty-first century has resulted in the creation of no new jobs.<sup>160</sup> Given that the income tax has historically relied on labor income as a key component of its revenue base, a major upheaval is on the horizon.<sup>161</sup> Specifically, the role of labor is ebbing and that of capital is rising; furthermore, information availability via the Internet is unprecedented.<sup>162</sup>

These significant developments have upended the traditional justifications proffered for the varied tax treatments of income derived from labor, business and investment profits, and capital gains. Consider each income category and the transformative effects that technological advancements have had.

1. *Taxing Labor in the Technological Age*

---

<sup>158</sup> See, e.g., John Markoff, *Armies of Expensive Lawyers, Replaced by Cheaper Software*, N.Y. TIMES (Mar. 4, 2011), <https://www.nytimes.com/2011/03/05/science/05legal.html> (“Last year, Clearwell software was used by the law firm DLA Piper to search through a half-million documents under a court-imposed deadline of one week. Clearwell’s software analyzed and sorted 570,000 documents (each document can be many pages) in two days. The law firm used just one more day to identify 3,070 documents that were relevant to the court-ordered discovery motion.”); Jane Croft, *Legal Firms Unleash Office Automatons*, FIN. TIMES (May 16, 2016), <https://www.ft.com/content/19807d3e-1765-11e6-9d98-00386a18e39d> [https://perma.cc/532D-ZXQW] (demonstrating the existence of software programs that can outperform attorneys and paralegals in document review).

<sup>159</sup> See, e.g., Guilbert Gates et al., *The Race for Self-Driving Cars*, N.Y. TIMES (June 6, 2017), <https://www.nytimes.com/interactive/2016/12/14/technology/how-self-driving-cars-work.html> (explaining how self-driving cars are being perfected and will soon be mass produced).

<sup>160</sup> Neil Irwin, *Aughts Were a Lost Decade for U.S. Economy, Workers*, WASH. POST (Jan. 2, 2010), <http://www.washingtonpost.com/wp-dyn/content/article/2010/01/01/AR2010010101196.html> [https://perma.cc/VH4E-GTFZ].

<sup>161</sup> Cf. Edward J. McCaffery, *The Death of the Income Tax (or, the Rise of America's Universal Wage Tax* 48 (USC CLASS Research Paper No. CLASS18-25, 2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3242314](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3242314) [https://perma.cc/FQ45-3ZC3]. (“History and common sense, let alone empathy, supply reasons to believe that this situation cannot endure. A shrinking labor base cannot perpetually bear an increasing tax burden, and see the benefits particular to their life situations slashed, while a growing class of the wealthy need not work or pay taxes. None of this bodes well for the future.”).

<sup>162</sup> See Stephanie Pappas, *How Big Is the Internet, Really?*, LIVE SCI. (Mar. 18, 2016, 11:40 AM), <http://www.livescience.com/54094-how-big-is-the-internet.html> [https://perma.cc/3HZR-JN92] (“As of September 2014, there were 1 billion websites on the Internet, a number that fluctuates by the minute as sites go defunct and others are born . . . . By the end of 2016, global Internet traffic will reach 1.1 zettabytes per year . . . and by 2019, global traffic is expected to hit 2 zettabytes per year. One zettabyte is the equivalent of 36,000 years of high-definition video . . . .”).

It first should be noted that taxing income derived from labor remains a viable avenue for raising tax revenue, notwithstanding the transformative effects of technology. Readily subject to third-party withholding and the issuance of tax information returns,<sup>163</sup> labor income continues to be highly visible. Furthermore, due to technological innovations, the labor market has become even more inelastic (i.e., with a soft market for good, high-paying jobs, there is less taxpayer proclivity to substitute leisure activities for labor).<sup>164</sup> That being the case, taxing labor income theoretically should have a minimal effect on economic behavior.<sup>165</sup> In other words, the efficiency case for taxing labor income remains strong.

However, the justifications for taxing labor income *more heavily* than business and investment profits and capital gains have become increasingly suspect. As discussed above, throughout much of the twentieth century, the labor income base was robust compared to the capital income base. In the twenty-first century, a reversal is happening as technology propels capital income upward compared to that derived from labor. If this overall economic trend continues, Congress can no longer rely primarily upon labor income to keep the Treasury's coffers full. For every job that is lost to technology (without replacement in another sector), the share of income attributable to labor declines and, along with it, the corresponding tax revenue. To generate sufficient revenue to meet its expenditures, Congress must therefore reconsider the tax rate applicable to labor, business and investment profits, and capital gains.

Consider, too, that historical factors that once justified taxing labor more heavily than other types of income have waned in importance in recent years. Since World War II, the combination of tax withholding and information return reporting on labor income readily ensured a robust and steady revenue supply,<sup>166</sup> whereas business and investment income was historically harder to monitor. However, over this same time period, the use of cash currency has declined, and electronic transfers in the form of credit and debit card payments have become much more commonplace.<sup>167</sup> As a result of this marketplace transformation, business and investment profits

---

<sup>163</sup> Jay A. Soled, *Homage to Information Returns*, 27 VA. TAX REV. 371 (2007).

<sup>164</sup> See Joel Slemrod, *A General Model of Behavioral Response to Taxation*, 8 INT'L TAX & PUB. FIN. 119 (2001) ("In the model of labor supply, as long as the marginal cost of avoidance depends on true labor income the real behavioral response to wage rates or tax rates depends on a mixture of the elasticity of substitution and the avoidance technology."); Patrick Gillespie, *Millions in Gig Economy Can't Find Better Jobs or Pay*, CNN MONEY (Oct. 27, 2016), <http://money.cnn.com/2016/10/27/news/economy/gig-economy-workers/> [<https://perma.cc/X5J9-7WUA>] ("Most of the estimated 68 million gig workers choose the freelance lifestyle for better work-life balance. But nearly 20 million of them do it out of necessity because they can't find better work or pay, according to a report by McKinsey Global Institute, a consulting firm."); Ian Salisbury, *Why It's Still Hard to Find the Job You Really Want*, MONEY (Dec. 5, 2014), <http://time.com/money/3619921/jobs-report-unemployment/> [<https://perma.cc/3CDQ-CPGM>] ("The problem is that the post-recession economy is still better at producing marginal jobs—think retail and food service gigs—than the comparatively well-paying construction, manufacturing, and government jobs that let middle-class people buy homes and support their families.").

<sup>165</sup> See generally Thomas Piketty & Emmanuel Saez, *Optimal Labor Income Taxation* (Nat'l Bureau of Econ. Research, Working Paper No. 18521, 2012) <https://eml.berkeley.edu/~saez/piketty-saezNBER12handbook.pdf> [<https://perma.cc/2AR3-9T2C>].

<sup>166</sup> See *supra* note 83 and accompanying text.

<sup>167</sup> Jeffrey H. Kahn & Gregg D. Polsky, *The End of Cash, the Income Tax, and the Next 100 Years*, 41 FLA. ST. U. L. REV. 159 (2013). See Susan Cleary Morse, Stewart Karlinsky & Joseph Bankman, *Cash Businesses and Tax Evasion*, 20 STAN. L. & POL'Y REV. 37 (2009) (explaining why the use of cash facilitates tax noncompliance and the underground economy).

*AUTOMATION AND THE INCOME TAX*

have become much more visible and easier to trace, making them more akin to wage income in this respect.<sup>168</sup> This increased visibility makes nonlabor income a much more accessible and attractive target of taxation.

2. *Taxing Business Profits and Investments in the Technological Age*

There is no reason to assume that the United States will seek to shed its capitalist roots anytime soon. Over the past two and one-half centuries, the country has proven to be an economic powerhouse, achieving unprecedented levels of productivity.<sup>169</sup> To date, consistent with this capitalist heritage, Congress has sought to tailor the Code in a manner that aggressively cultivates a business and investment environment that is friendly to economic growth.<sup>170</sup> Yet, it is unclear if these favorable tax rules are necessary and worth their cost, particularly in the modern technological era.

The Code has been intentionally designed to minimize the tax burden associated with business profits and investments. While there is a whole series of Code sections that reflect this pro-business/investment approach, bonus and accelerated depreciation deductions stand out. These deductions sanction income deferral: they enable production costs that yield many years of annual income to be fully deducted in the year of acquisition.<sup>171</sup> Congress thus underwrites these acquisitions, forgoing taxes to the detriment of expenditures for public services (e.g., strengthening the military, providing cleaner public parks, and making infrastructure investments). Yet, in light of the vast and unparalleled productivity of twenty-first-century machinery, taxpayers are already incentivized to make such purchases. They do not need congressional assistance in the form of income deferral to motivate them.<sup>172</sup>

Query, too, whether Congress needs to dangle tax incentives, such as the deductibility of home mortgage interest and the reduced tax rate on dividends, in front of taxpayers to foster private property ownership and investment. Empirical evidence that these incentives have a significant impact on taxpayer behavior is mixed at best.<sup>173</sup> Further, the Internet has made investing easier

---

<sup>168</sup> James Alm & Jay A. Soled, *W(h)ither the Tax Gap*, 92 WASH. L. REV. 521, 539-543 (2017).

<sup>169</sup> Mack McLarty & Nelson Cunningham, *North America Is the Strongest Economy in the World. Let's Keep It That Way*, WASH. POST (June 29, 2016), [https://www.washingtonpost.com/opinions/global-opinions/north-america-is-the-strongest-economy-in-the-world-lets-keep-it-that-way/2016/06/29/ca06952c-3e0b-11e6-84e8-1580c7db5275\\_story.html?utm\\_term=.da14efaf8f6f](https://www.washingtonpost.com/opinions/global-opinions/north-america-is-the-strongest-economy-in-the-world-lets-keep-it-that-way/2016/06/29/ca06952c-3e0b-11e6-84e8-1580c7db5275_story.html?utm_term=.da14efaf8f6f) [<https://perma.cc/H2M6-WJNX>] (“But North America the economic powerhouse has reigned supreme for nearly a century, becoming the largest and strongest in the world, an industrial dynamo, a commodities cornucopia and a magnet for millions upon millions of immigrants seeking a better life.”).

<sup>170</sup> See, e.g., N. Gregory Mankiw, *How Best to Tax Business*, N.Y. TIMES (Apr. 21, 2017), [https://www.nytimes.com/2017/04/21/upshot/tax-code-business.html?\\_r=0](https://www.nytimes.com/2017/04/21/upshot/tax-code-business.html?_r=0) (discussing ways Congress may reform business taxes to make the United States more competitive in the global economy).

<sup>171</sup> I.R.C. §§ 168(a), 179(a). For an excellent overview of accelerated depreciation, see Rebecca N. Morrow, *Accelerating Depreciation in Recession*, 19 FLA. TAX REV. 465, 472–89 (2016).

<sup>172</sup> Indeed, a recent paper by professor Lily Batchelder suggests that many firms don't take favorable tax expensing rules into account in making investment decisions because, in part, financial accounting rules do not recognize the benefit of immediate expensing. Lily L. Batchelder, *Accounting for Behavioral Considerations in Business Tax Reform: The Case of Expensing*, 4 (Jan. 24, 2017) (unpublished working paper) [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2904885](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2904885). [<https://perma.cc/R4D2-HFDA>].

<sup>173</sup> See, e.g., JOEL SLEMROD & JON BAKIJA, *TAXING OURSELVES: A CITIZEN'S GUIDE TO THE DEBATE OVER TAXES* 320–21 (MIT Press 5th ed. 2017) (“The historical experience in the United States and other countries casts

than ever before, even by relatively unsophisticated individuals. The justification for spending billions of dollars in the form of tax expenditures that shelter business profits and investment income from taxation thus appears quite weak.

Next, administrative obstacles that once beset the monitoring of business profit and investment income are no longer as daunting. Three major changes in the nation's economy have led to this change. First, there is a global trend under way in which cash—which in yesteryear was easily hidden and made to disappear—is being dethroned as the preferred mode of transacting business; it is instead being replaced by credit cards, debit cards, wire transfers, and smartphone applications, all of which leave electronic traces that make business profits and investment income much harder to hide.<sup>174</sup> Second, automation has allowed Congress to pass into law measures that augment third-party oversight. Consider, for example, the passage of the Foreign Account Tax Compliance Act.<sup>175</sup> This law requires overseas investment institutions to collect and submit information to the IRS, effectively limiting taxpayers' ability to invest offshore in ways that camouflage their identities.<sup>176</sup> Third, technological changes and globalization have led to large-scale businesses replacing many small-scale business enterprises.<sup>177</sup> This is relevant because larger

---

doubt on predictions of large impacts on either housing prices or the extent of homeownership [from repealing the mortgage interest deduction].”).

<sup>174</sup> See Catherine New, *Cash Dying as Credit Card Payments Predicted to Grow in Volume*, HUFFINGTON POST (June 7, 2012), [https://www.huffpost.com/entry/credit-card-payments-growth\\_n\\_1575417](https://www.huffpost.com/entry/credit-card-payments-growth_n_1575417) [<https://perma.cc/Z7BD-JTQH>]:

What was once the most secure way to pay for things—hard cash—is increasingly becoming currency non grata in wallets and checkouts across the country. Airlines won't take it for in-flight snacks and a growing number of stores and restaurants like Standard Market, a new neighborhood market in Chicago, won't accept it. It's plastic or bust for consumers who want to do a transaction in these card-only places.

Meanwhile, plastic cards purchases comprised 66 percent of all in-person sales, with nearly half of them, or 31 percent, made with debit cards, according to [Javelin Strategy & Research, a marketing research firm]. Last year shoppers used credit cards for 29 percent of point-of-sale purchases; Javelin expects that number to rise to 33 percent by 2017. Shoppers deployed gift cards and prepaid cards for 6 percent of purchases made with plastic last year. A mere 7 percent of transactions involved use of a paper check, with such transactions projected to drop further in the next few years.

See generally John Heggestuen, *Cash Is Fading, and Checks Are Dying as Smartphones and Tablets Change the Way We Pay*, BUS. INSIDER (Aug. 4, 2014), <https://www.businessinsider.com/cash-is-fading-and-checks-are-dying-as-smartphones-and-tablets-change-the-way-we-pay-2014-8> [<https://perma.cc/L66J-KXMP>]; Tamás Briglevics & Scott Schuh, *U.S. Consumer Demand for Cash in the Era of Low Interest Rates and Electronic Payments* 1 (Fed. Reserve Bank of Boston, Working Paper No. 13-23, 2013), <http://www.bostonfed.org/economic/wp/wp2013/wp1323.pdf> [<https://perma.cc/C98W-CNBC>].

<sup>175</sup> Hiring Incentives to Restore Employment Act, Pub. L. No. 111-147, §§ 501–62, 124 Stat. 71, 97–118 (2010).

<sup>176</sup> See Dean Marsan, *FATCA: The Global Financial System Must Now Implement a New U.S. Reporting and Withholding System for Foreign Account Tax Compliance, Which Will Create Significant New Exposures—Managing This Risk (Part III)*, TAXES-THE TAX MAG., Sept. 2010, at 28 (explaining that U.S. taxpayers will find it increasingly hard to park investments offshore and fail to disclose them).

<sup>177</sup> See ANTHONY CARUSO, U.S. CENSUS BUREAU, G12-SUSB, STATISTICS OF U.S. BUSINESSES EMPLOYMENT AND PAYROLL SUMMARY: 2012, 1 (2015), [www.census.gov/content/dam/Census/library/publications/2015/econ/g12-susb.pdf](http://www.census.gov/content/dam/Census/library/publications/2015/econ/g12-susb.pdf) [<https://perma.cc/HVC4-ASSC>]; See also Alm & Soled, *supra* note 168, at 544 (“The most recent report indicates that only 17.6% of the labor force

*AUTOMATION AND THE INCOME TAX*

business enterprises (and the employees who work for such enterprises) tend to be far more tax compliant than smaller business enterprises,<sup>178</sup> for a whole host of reasons (such as management oversight and lack of opportunities for collusion).

3. *Taxing Capital Gains in the Technological Age*

Under the Code, capital gains are accorded unparalleled preferential tax treatment, emblematic of their semisacred status in the United States.<sup>179</sup> The proffered justifications for such preferential treatment have withstood scrutiny for close to a century<sup>180</sup>—until now, when technological advancements and information availability have cast a shadow on the legitimacy of these justifications.

Perhaps the longest-standing justification for not taxing capital gains (or, at the most, taxing them lightly) is that they do not constitute income.<sup>181</sup> As previously mentioned,<sup>182</sup> this claim's origin dates back to old English trust law in which capital gains were defined to be principal rather than income. This was an important distinction for trustees to make; after all, they had to balance their fiduciary allegiances and duties between income and remainder beneficiaries.<sup>183</sup> But stripped of the trust context, this justification for a tax rate preference makes no sense. Plain and simple, capital gains constitute an accretion to wealth, deferred until there has been a recognition event (an administrative concession designed to help enhance compliance and moot issues of liquidity). As such, capital gains fit snugly in the traditional scope of income and should be so treated under the Code.<sup>184</sup>

The evolving business landscape in the twenty-first century also casts a new light on the capital gains preference. As several commentators have recently argued, the line between capital

---

now works for 'very small enterprises' (defined as having fewer than twenty employees); the rest of the labor force works for small, medium, and large enterprises.”).

<sup>178</sup> See Alm & Soled, *supra* note 168, at 543–48 (explaining the reasons large-business enterprises are apt to be more compliant than small-business enterprises); U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-07-1014, TAX GAP: A STRATEGY FOR REDUCING THE GAP SHOULD INCLUDE OPTIONS FOR ADDRESSING SOLE PROPRIETOR NONCOMPLIANCE 10 (2007), <https://www.gao.gov/assets/270/265399.pdf> [<https://perma.cc/854P-Z6RR>] (“[A]n estimated 70 percent of Schedule C filers in 2001 (about 12.9 million) made an error when reporting net business income (that is, net profit or loss on line 31 of Schedule C). Most of the misreporting was underreporting . . . [A]n estimated 61 percent of Schedule C filers underreported their net income and 9 percent overreported.”); Kathleen Delaney Thomas, *Presumptive Collection: A Prospect Theory Approach to Increasing Small Business Compliance*, 67 TAX L. REV. 111, 113 (2013) (“When combined with under-reported self-employment tax (\$57 billion), individual small business noncompliance accounts for approximately \$179 billion, or 40% of the total tax gap.”).

<sup>179</sup> I.R.C. § 1(h).

<sup>180</sup> See, e.g., Cunningham & Schenk, *supra* note, at 320 (“Nevertheless, a capital gains preference continues to garner much support in political circles”); Constantine N. Katsoris, *In Defense of Capital Gains*, 42 FORDHAM L. REV. 1, 3 (1973) (“In the forefront of many tax reform proposals is the alteration and/or elimination of the present treatment of capital gains.”); Daniel Halperin, Commentary, *A Capital Gains Preference Is Not EVEN a Second-Best Solution*, 48 TAX L. REV. 381 (1993); Daniel N. Shaviro, Commentary, *Uneasiness and Capital Gains*, 48 TAX L. REV. 393 (1993).

<sup>181</sup> DAVID F. BRADFORD, *UNTANGLING THE INCOME TAX* 46–51 (Harvard Univ. Press 1999).

<sup>182</sup> See *supra* notes 21–22 and accompanying text.

<sup>183</sup> See *supra* notes 121–122 and accompanying text.

<sup>184</sup> I.R.C. § 61(a).

gains and ordinary income is becoming increasingly difficult to draw.<sup>185</sup> Many taxpayers earning capital gains conduct business via pass-through entities the likes of which were nonexistent at the point in time when the capital gains preference originated. Whereas a century ago policy makers could easily distinguish between gains from a sale of stock held in an investment portfolio and income derived from a plumbing business, nowadays there are many gray areas. A taxpayer conducting business through an entity may derive some income from his labor and other income that represents true “profit” of the business. Because of the favorable tax rules afforded to nonlabor income, there is a powerful incentive for taxpayers to characterize as much income as possible as derived from profits,<sup>186</sup> for example, by characterizing earnings as dividends instead of wages.<sup>187</sup> This incentive to essentially convert labor income into capital income likely causes noncompliance with the tax laws,<sup>188</sup> encourages socially wasteful tax planning,<sup>189</sup> and imposes increased enforcement costs on the IRS.<sup>190</sup> Taxing capital and labor alike would eliminate the inefficiencies associated with separating income streams into multiple baskets.

Further, much of today’s capital gains income is not derived from earnings on investment portfolios. Instead, as pointed out by tax professor Victor Fleischer, a large portion of capital gains originates from so-called carried interest—this is income earned by skilled fund managers for their

---

<sup>185</sup> Victor Fleischer, *Taxing Alpha: Labor Is the New Capital* (Nov. 19, 2015) (unpublished manuscript), [https://ostromworkshop.indiana.edu/pdf/seriespapers/2015f\\_c/fleischerpaper.pdf](https://ostromworkshop.indiana.edu/pdf/seriespapers/2015f_c/fleischerpaper.pdf) [https://perma.cc/U8MZ-WV7K]; Thomas Piketty, Emmanuel Saez & Gabriel Zucman, *Rethinking Capital and Wealth Taxation 2* (Sept. 17, 2013) (unpublished manuscript), <http://piketty.pse.ens.fr/files/PikettySaez2014RKT.pdf> [https://perma.cc/MW8S-UEDE ] (“In our view, the fuzziness of the capital vs. labor frontier is the simplest—and the most compelling—rationale for a comprehensive income tax (i.e. an income tax treating labor and capital income flows alike). . . .”).

<sup>186</sup> Some commentators have advocated for a rule that would impose a fixed rate of return on capital to eliminate the need to distinguish between labor and capital. *See, e.g.*, Edward D. Kleinbard, *Capital Taxation in an Age of Inequality*, 90 S. CAL. L. REV. 593, 601 (2017) (“[A dual income tax structure] requires the development of a new tax tool, namely a ‘labor-capital income tax centrifuge,’ to tease apart labor and capital income when the two are hopelessly intermingled, as in the case of the owner-entrepreneur of a closely held business.”).

<sup>187</sup> *See, e.g.*, Piketty, Saez & Zucman, *supra* note 185, at 2 (“Typically, self-employed individuals and business owners can to a large extent decide how much they get paid in wages and how much they receive in dividends. This also applies to a large number of corporate executives . . .”).

<sup>188</sup> For example, while the Code technically prohibits taxpayers from paying salaries that are unreasonable, *see* I.R.C. § 162(a)(1) (permitting a deduction for “a reasonable allowance for salaries or other compensation for personal services actually rendered”), it does nothing to prevent taxpayers from paying meager salaries to elude employment taxes. *See* Paul Sullivan, *The Advantages and Risks of Gingrich’s Tax Strategy*, N.Y. TIMES (Feb. 3, 2012), [http://www.nytimes.com/2012/02/04/your-money/advantages-and-risks-of-gingrichs-s-corporation.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2012/02/04/your-money/advantages-and-risks-of-gingrichs-s-corporation.html?pagewanted=all&_r=0) [https://perma.cc/K3HU-Q7HN] (explaining how Newt Gingrich and John Edwards avoided paying a lot of taxes by categorizing their labor income as S corporation earnings).

<sup>189</sup> *See* David A. Weisbach, *The Failure of Disclosure as an Approach to Shelter*, 54 SMU L. REV. 73, 80 (2001) (“Most tax planning is wasteful activity and we should not be shy about restricting it severely.”).

<sup>190</sup> *See* James M. Poterba, *Tax Evasion and Capital Gains Taxation* 436 (M.I.T., Working Paper No. 436, 1987), <https://dspace.mit.edu/bitstream/handle/1721.1/64275/taxevasioncapita00pote.pdf?sequence=1> [https://perma.cc/MS7D-HQQR] (detailing capital gains taxation noncompliance).

## AUTOMATION AND THE INCOME TAX

talents<sup>191</sup> and the sweat equity of founder's stock held by successful entrepreneurs.<sup>192</sup> However, gains from carried interest and founder's stock are largely attributable to the *labor* of the fund managers and entrepreneurs; and, thus, the case for taxing them at preferential rates appears weak.<sup>193</sup> What's more, this type of income inures almost exclusively to the very wealthiest taxpayers, who are able to ensure that most of their income is taxed at preferential rates.<sup>194</sup> In light of both growing income inequality and the increasing ease with which taxpayers can now characterize labor income as capital gains, the upsides of the capital gains preference no longer justify its costs.

Perhaps the strongest justification for granting preferential tax rates to capital gains has been that lower rates reduce the lock-in effect, i.e., the inefficient incentive to hold on to capital assets to avoid taxation.<sup>195</sup> Even in recent years, some commentators continue to contend that a capital gains tax rate preference is a *sine qua non* for a vibrant economy.<sup>196</sup> Yet, in a technological age, the lock-in effect potentially has less currency than it once did. It has become increasingly clear that many factors color taxpayers' investment decisions,<sup>197</sup> the foremost being anticipated investment returns, which are far more accessible via the Internet than ever before.<sup>198</sup> In the case of entrepreneurs and fund managers, who earn the most taxable capital gains in the modern economy, there is virtually no evidence that tax rates influence the timing of income realizations.<sup>199</sup>

---

<sup>191</sup> A common practice of fund managers is a so-called two and twenty fee structure: the manager earns a 2 percent management fee on the capital deployed; in addition, a 20 percent premium (i.e., carried interest) is paid once a specified return threshold is reached. The 2 percent fee is generally taxed as ordinary income, while the 20 percent "carry" is generally taxed as capital gains. See Victor Fleischer, *How a Carried Interest Tax Could Raise \$180 Billion*, N.Y. TIMES (June 5, 2015), <https://www.nytimes.com/2015/06/06/business/dealbook/how-a-carried-interest-tax-could-raise-180-billion.html> [<https://perma.cc/2L4N-33XW>] (suggesting that earning fees in this fashion is a ubiquitous practice); see also Alan D. Viard, *The Taxation of Carried Interest: Understanding the Issues*, 61 NAT'L TAX J. 445, 445 (2008), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2221668](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2221668) [<https://perma.cc/4RHE-V8C3>] ("Carried interest is a share, allocated to fund managers, of the income generated by the fund's holding in its portfolio companies. When that income consists of qualified dividends or long-term capital gains, the managers are taxed at the [ . . . ] rate applicable to those forms of income.").

<sup>192</sup> Fleischer, *supra* note 185, at 18 ("Carried interest alone generates about \$100 billion a year of capital gains income, or about 1/8 of all reported capital gains.").

<sup>193</sup> See *id.* at 3 ("When Mark Zuckerberg sells shares of Facebook, the capital gain he reports on his tax return represents the realized value of the hard work, ideas, and leadership that he provided to Facebook. IT does not represent a return on whatever small financial investment he made with after-tax savings while sitting in a Harvard dorm room.").

<sup>194</sup> See *id.* at 28.

<sup>195</sup> See *supra* note 116 and accompanying text.

<sup>196</sup> William D. Popkin, *The Deep Structure of Capital Gains*, 33 CASE W. RES. L. REV. 153 (1983); Daniel J. Mitchell, *The Overwhelming Case Against Capital Gains Taxation*, FORBES (Nov. 7, 2014), <https://www.forbes.com/sites/danielmitchell/2014/11/07/the-overwhelming-case-against-capital-gains-taxation/#1e03b1a83b0a> [<https://perma.cc/4FF8-DRYC>].

<sup>197</sup> See, e.g., Alex Davidson, *A Guide to Sustainable Investing*, WALL ST. J., Nov. 8, 2015, <https://www.wsj.com/articles/a-guide-to-sustainable-investing-1447038115> [<https://perma.cc/7F4L-E8ZU>] (listing factors that taxpayers should consider when investing).

<sup>198</sup> See, e.g., Robert Powell, *What Investors Need to Understand About 'Investment Return,'* WALL ST. J., Apr. 12, 2017, <https://www.wsj.com/articles/what-investors-need-to-understand-about-investment-return-1491790501> [<https://perma.cc/9TYR-YB8R>] (explaining the different ways to calculate investment return).

<sup>199</sup> Fleischer, *supra* note 185, at 6, 38–39 ("Entrepreneurs and fund managers often do not control the timing of income in the same way that a portfolio investor controls the timing of asset sales.").

Even conceding that capital gains taxes exacerbate the lock-in effect to some degree, the impediment to the flow of capital investment has proven to be minimal,<sup>200</sup> as evidenced by the burgeoning capital economy.<sup>201</sup> And since the lock-in effect is, in part, a product of the generous tax deferral afforded capital appreciation, raising tax rates on capital gains would help foster equity.<sup>202</sup>

Finally, certain administrative practicalities that once favored a capital gains preference are now moot. Historically, Congress probably shied away from taxing capital gains too heavily as a concession to the administrative reality that taxpayers had a hard time computing their gains and, by the same token, that the I.R.S. had a difficult time monitoring taxpayer compliance.<sup>203</sup> For example, consider the plight of taxpayers who purchased AT&T stock in, say, 1980.<sup>204</sup> After a series of spin-offs and other capital events (e.g., stock dividends and redemptions), if and when taxpayers sold their investment, they would have to compute their tax bases in the original AT&T stock they owned as well as the tax bases of the spin-off companies. Most taxpayers lacked the ability, time, and resources to make these computations; furthermore, the I.R.S. lacked the resources to ensure compliance.<sup>205</sup> Fast-forward to the twenty-first century, in which data storage, data mining, and data manipulation are routine.<sup>206</sup> Congress capitalized upon these technological advances and mandated that third-party brokers maintain, adjust, and report the tax basis that investors have in their marketable securities on the face of tax information returns.<sup>207</sup> From a taxpayer-oversight perspective, this third-party tax information reporting requirement leveled the playing field between the income derived from labor and that derived from capital: each now can be readily monitored for complete accuracy.

### C. Tax Revenue Projections Associated with Technological Transformation

Since taxes on labor comprise a majority of federal tax revenue, a decline in labor income will inevitably diminish tax revenue if there is no meaningful reform.<sup>208</sup> Indeed, a recent report by the International Monetary Fund indicates that “the U.S. labor share [of income] has fallen by 3.5

---

<sup>200</sup> Cf. Marcus Ryu, *Why Corporate Tax Cuts Won't Create Jobs*, N.Y. TIMES (Oct. 9, 2017), <https://www.nytimes.com/2017/10/09/opinion/corporate-tax-cuts-entrepreneur.html> [<https://perma.cc/9QN9-HF89>] (“I have never heard someone say, ‘I would have started a company, but tax rates were too high.’”).

<sup>201</sup> THOMAS PIKETTY, *CAPITAL IN THE TWENTY-FIRST CENTURY* 42 (2014) (“By 2010, and despite the crisis that began in 2007–2008, capital was prospering as it had not done since 1913.”).

<sup>202</sup> See *supra* notes 116-118 and accompanying text.

<sup>203</sup> U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-06-603, *CAPITAL GAINS TAX GAP: REQUIRING BROKERS TO REPORT SECURITIES COST BASIS WOULD IMPROVE COMPLIANCE IF RELATED CHALLENGES ARE ADDRESSED* 12 (June 2006).

<sup>204</sup> The national taxpayer advocate, in her 2005 report to Congress, utilizes AT&T stock to illustrate the nature of the problem. TAXPAYER ADVOCATE SERV., 2005 ANNUAL REPORT 435 [https://www.irs.gov/pub/tas/section\\_2.pdf](https://www.irs.gov/pub/tas/section_2.pdf) [<https://perma.cc/5FGT-R9AT>].

<sup>205</sup> See *supra* note 120.

<sup>206</sup> See *supra* notes 154-156.

<sup>207</sup> See Energy Improvement and Extension Act of 2008, Pub. L. No. 110-343, § 403, 122 Stat. 3807, 3854–58 (introducing I.R.C. § 6045(g), which requires that brokers track and report taxpayers' tax basis in the covered securities in which they invest).

<sup>208</sup> See *supra* Section II.C.

*AUTOMATION AND THE INCOME TAX*

percent” since 2000.<sup>209</sup> The report attributes the fall, in part, to “higher substitutability between labor and capital arising from technological change and routinization.”<sup>210</sup> Similarly, recent empirical studies have documented a decline in the share of gross domestic product (GDP) allocated to wages in recent years, both abroad and in the United States.<sup>211</sup>

Table 1, below, illustrates the composition of individual income over a recent five-year period. From 2010 until 2014 (the most recent year for which data is publicly available), salaries and wages have declined as a percentage of total income. In contrast, over this same time period, business and investment income has slightly increased, while capital gains income as a percentage of income has increased more significantly.<sup>212</sup>

**Table 1: Income Sources as a Percentage of Total Income<sup>213</sup>**

<b>Year</b>	<b>Salaries/Wages as Percentage of Total Income</b>	<b>Business/Investment as Percentage of Total Income<sup>214</sup></b>	<b>Capital Gains as Percentage of Total Income</b>
<b>2010</b>	71.1	15.2	4.4
<b>2011</b>	71.3	15.3	4.4
<b>2012</b>	68.2	16.9	6.7
<b>2013</b>	70.1	15.8	5.3
<b>2014</b>	68.4	16.1	7.0

Further, consider Table 2, below, which documents the respective shares of total tax revenue for payroll taxes and income taxes from 2010 to 2018. In 2010, payroll taxes (for both Social Security and hospital insurance) represented 40 percent of total tax revenues. In 2011 and

<sup>209</sup> INT’L MONETARY FUND, IMF COUNTRY REPORT NO. 17/239, UNITED STATES: 2017 ARTICLE IV CONSULTATION 17 (July 2017), <http://www.imf.org/en/Publications/CR/Issues/2017/07/27/United-States-2017-Article-IV-Consultation-Press-Release-Staff-Report-45142> [<https://perma.cc/9GXB-BWVX>].

<sup>210</sup> *Id.*

<sup>211</sup> See, e.g., David Autor et al., *The Fall of the Labor Share and the Rise of Superstar Firms* (Nat’l Bureau of Econ. Research, Working Paper No. 23396, 2017), <http://www.nber.org/papers/w23396> [<https://perma.cc/nf23-r8z2>] (attributing the fall in the labor share of GDP in the United States to the rise of “superstar firms,” which take advantage of technology and globalization to produce high profits with relatively low labor costs); Loukas Karabarbounis & Brent Neiman, *The Global Decline of the Labor Share* 1 (Nat’l Bureau of Econ. Research, Working Paper No. 19136, 2013), <http://www.nber.org/papers/w19136.pdf> [<https://perma.cc/yr4n-ktft>] (attributing the global decline in the labor share to “[e]fficiency gains in capital producing sectors, often attributed to advances in information technology and the computer age . . . .”); see also Simcha Barkai, *Declining Labor and Capital Shares*, <http://home.uchicago.edu/~barkai/doc/BarkaiDecliningLaborCapital.pdf> [<https://perma.cc/PRP3-XT4Y>] (presenting evidence that firms have reduced spending on both labor and capital in recent years, while profits have increased).

<sup>212</sup> However, in the case of capital gains income, fluctuations may be due, in part, to changes in capital gains rates, which may cause capital gains realization rates among taxpayers to vary from year to year.

<sup>213</sup> This table was populated using data generated by the Service. This data is found at INTERNAL REVENUE SERV., STATISTICS OF INCOME TAX STATS, INDIVIDUAL INCOME TAX RETURNS PUBLICATION 1304,tbl.A (updated Apr. 11, 2018), [https://www.irs.gov/uac/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report#\\_tbla](https://www.irs.gov/uac/soi-tax-stats-individual-income-tax-returns-publication-1304-complete-report#_tbla) [<https://perma.cc/D23A-WGWK>].

<sup>214</sup> See *supra* note 126 for a description of the components of business and investment income.

2012, Social Security tax rates were temporarily reduced (from 12.4 percent to 10.4 percent),<sup>215</sup> so the overall share of payroll taxes as a percentage of tax revenues fell predictably from 2010 to 2011. However, even assuming that the 2011 and 2012 shares would have been somewhat higher without the temporary rate decrease, there is an overall decline in the percentage of total tax revenues from payroll taxes over this period, from 40 percent in 2010 to an estimated 33.5 percent for 2018. At the same time, income taxes (including taxes on labor, investments, profits, and capital gains) as a percentage of total tax revenue have steadily increased, from 41.5 percent in 2010 to an estimated 50.2 percent for 2018.

---

<sup>215</sup> *Payroll Tax Rates: 1937–2017*, TAX POL’Y CTR., <https://www.taxpolicycenter.org/statistics/payroll-tax-rates> [<https://perma.cc/ZRV5-9XW6>].

## AUTOMATION AND THE INCOME TAX

**Table 2: Taxes as a Percentage of Total Tax Revenue<sup>216</sup>**

<b>Year</b>	<b>Payroll Taxes as Percentage of Total Tax Revenue</b>	<b>Income Taxes as Percentage of Total Tax Revenue</b>
<b>2010</b>	40.0	41.5
<b>2011</b>	35.5*	47.4
<b>2012</b>	34.5*	46.2
<b>2013</b>	34.2	47.4
<b>2014</b>	33.9	46.2
<b>2015</b>	32.8	47.4
<b>2016</b>	34.1	47.3
<b>2017 estimate</b>	34.0	48.0
<b>2018 estimate</b>	33.5	50.2

\*Temporarily lower payroll tax rate.

Together, these trends suggest an overall decline in tax revenue generation from labor income in recent years.<sup>217</sup> Payroll taxes are derived *only* from labor; thus, without changes in payroll tax rates (except for the temporary decrease in 2011–2012), a decline in the share of payroll taxes as a percentage of overall tax revenue suggests an overall decline in labor income.<sup>218</sup> The fact that tax revenue from income taxes has simultaneously increased suggests that taxes on nonlabor income—business income, investment income, and capital gains—now constitute a greater share of overall tax revenue than they used to.

With over \$3 trillion in annual tax revenue collected in recent years, a decline of even a few percentage points in the tax revenue associated with labor income would result in a substantial revenue loss for the government. Thus, to sustain a viable tax base, policymakers must impose offsetting adjustments in the Code. The next section lays out suggestions for meaningful tax reform that would preserve the tax base in an era of declining labor income.

<sup>216</sup> *Table 2.2: Percentage Composition of Receipts by Source, in OFFICE MGMT. & BUDGET, HISTORICAL TABLES*, <https://www.whitehouse.gov/omb/budget/Historicals> [<https://perma.cc/6PTG-U29M>].

<sup>217</sup> There is evidence, however, that some of this shift in revenues results from taxpayers increasingly mischaracterizing labor income as business profits to avoid taxes, often through the use of S corporations. See Matthew Smith et al., *Capitalists in the Twenty-First Century* 5 (draft), <https://eml.berkeley.edu/~yagan/Capitalists.pdf> [<https://perma.cc/m9z5-2aa3>]. Such tax avoidance creates deadweight loss and further supports the arguments in this article to reduce or eliminate the disparate treatment between labor income and other forms of income.

<sup>218</sup> While payroll tax rates generally have not changed, the threshold for Social Security taxes is indexed for inflation and changes from year to year. Thus, payroll tax revenues could also decline if the threshold adjustments for Social Security did not keep up with rising incomes.

## IV. TAX REFORM IN AN ERA OF RAPID TECHNOLOGICAL ADVANCEMENTS

In the past, technological changes have colored the direction that tax reform has taken. As the country has modernized, for example, Congress introduced third-party reporting, mandated the use of magnetic tape submissions, and required electronic form filing.<sup>219</sup> Likewise, as Internet use has become ubiquitous, Congress has instituted changes to facilitate e-filing and encouraged the I.R.S. to use cost-effective measures to dispense important tax-related information.<sup>220</sup> These changes and others like them signify that when it comes to tax reform, Congress has not been oblivious to technological advances and their pivotal role in shaping the nation's economic landscape.

But capital's rise and labor's ebb have yet to make a significant mark on tax reform. In many respects, the same system of taxation that was instituted close to a century ago—i.e., income derived from labor taxed heavily, business and investment profits taxed moderately, and capital gains taxed lightly—remains entrenched.

Retention of a twentieth-century tax system, however, makes little or no sense in the twenty-first century. In the subsections below, we explore (A) twenty-first-century tax reform in a changing labor market and (B) the anticipated effects associated with the institution of these tax reform measures.

## A. Twenty-First-Century Tax Reform in a Changing Labor Market

The Technological Era requires that Congress reconsider the nature of the tax reform that it institutes. While Congress has sought to foster the use of capital, it has done little to nurture the use of labor—even unintentionally (via the current tax rate structure), yet perversely, dissuading its use. In devising tax reform, Congress should not institute measures that hinder technological advancement; after all, technological advancements have significantly raised most taxpayers' standard of living, augmented leisure time, and considerably reduced mortality rates.<sup>221</sup> At the same time, labor remains an essential component of a vibrant economy. Without a knowledgeable, energetic, and committed workforce, capital production would stall, and the nation's economic fabric would tatter.

Bearing in mind tax reform's dual objectives of simultaneously promoting both technology

---

<sup>219</sup> See INTERNAL REVENUE SERVICE DATA BOOK, tbl.14 n.2 (2010), <https://www.irs.gov/pub/irs-soi/09databk.pdf> [<https://perma.cc/ym5a-yv4b>]. (“The use of magnetic tapes for delivery of information returns was discontinued on December 31, 2008. Information returns previously provided on magnetic tape were provided electronically through the Filing Information Returns Electronically system beginning on January 1, 2009.”).

<sup>220</sup> For example, the Service has essentially stopped printing information booklets and has instead posted virtually every communication on the Internet. Internal Revenue Serv., *More People Using IRS.gov in 2015 Filing Season, IRS Says*, 49 TAX NOTES TODAY 12 (2015). Taxpayers can easily and quickly view or download any I.R.S. form, publication, or instruction booklet by visiting IRS.gov. If taxpayers still need printed forms or instructions, they can place their order online at IRS.gov/orderforms.

<sup>221</sup> See Lindsey Burke & James Sherk, *Automation and Technology Increase Living Standards*, HERITAGE FOUND. (July 20, 2015), [http://www.heritage.org/jobs-and-labor/report/automation-and-technology-increase-living-standards#\\_ftnref9](http://www.heritage.org/jobs-and-labor/report/automation-and-technology-increase-living-standards#_ftnref9) [<https://perma.cc/5y5g-e4a2>] (“Technological progress enables employees to produce vastly more goods and services with their labor. This increases their compensation because competitive labor markets compel employers to pay employees proportionately to their productivity.”); Joel Mokyr, Chris Vickers & Nicolas L. Ziebarth, *The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?*, 29 J. ECON. PERSP. 3, 31–50 (2015) (detailing the value and wealth that technology generates).

*AUTOMATION AND THE INCOME TAX*

and labor, Congress should institute the following three-pronged strategy: (1) institute a universal progressive tax rate structure, (2) curtail subsidization of capital relative to labor, and (3) adopt alternative Social Security funding and disbursement mechanisms. The institution of these tax reform measures would establish an environment in which Congress places capital and labor on equal footing, recognizing that they must function synergistically.

*1. Universal Progressive Tax Rate Structure*

As discussed above, over the course of the last century, capital gains have been taxed at much more favorable tax rates than ordinary income.<sup>222</sup> Although commentators have proffered numerous justifications for the capital gains tax preference, those justifications have not gone unchallenged. Tomes have been written,<sup>223</sup> colloquia convened,<sup>224</sup> and election platforms orchestrated<sup>225</sup> that directly speak to the advantages and disadvantages associated with the capital gains tax preference. These debates have touched upon a wide array of topics, including capital gains tax preference's microeconomic and macroeconomic effects,<sup>226</sup> behavioral impact upon taxpayers' investment decisions,<sup>227</sup> and ability to spur economic growth.<sup>228</sup>

While these debates have provided a more thorough understanding of how the capital gains tax preference came into being and the reasons it remains intact even today, rehashing them would be of little practical utility. Instead, there is a new prism—built on an economic landscape where capital now dominates and labor's importance has ebbed—through which the capital gains tax rate preference should be viewed and evaluated. This is an important exercise, informing whether the capital gains tax rate preference has outlasted its usefulness.

When the capital gains tax rate preference was first instituted, capital in the form of machinery and intellectual property (e.g., patents and know-how) was in its infancy. For example, car engines existed, but they were rudimentary in nature. The nation remained largely agriculturally based and labor oriented. To propel economic growth, Congress sought to spur capital investments. What better way to do this than to lessen the financial burden associated with the use of capital?<sup>229</sup>

---

<sup>222</sup> See *supra* Section II.B.

<sup>223</sup> See, e.g., Cunningham & Schenk, *supra* note 114; Daniel Shaviro, Commentary, *Uneasiness and Capital Gains*, 48 TAX L. REV. 393 (1993); George Zodrow, *Economic Analyses of Capital Gains Taxation, Realizations, Revenues, Efficiency and Equity*, 48 TAX L. REV. 419 (1993).

<sup>224</sup> See, e.g., Deborah H. Schenk, *Colloquium on Capital Gains*, 48 TAX L. REV. 315 (1993).

<sup>225</sup> See, e.g., Ryan Ellis, *Clinton and Sanders Propose Highest Capital Gains Tax Rate in History*, FORBES (Jan. 26, 2016) <https://www.forbes.com/sites/ryanellis/2016/01/26/clinton-and-sanders-propose-highest-capital-gains-tax-rate-in-history/#43a5e98a1127> [<https://perma.cc/4RM4-USPY>].

<sup>226</sup> See, e.g., JOINT ECON. COMM., THE ECONOMIC EFFECTS OF CAPITAL GAINS TAXATION (June 1997), [https://www.jec.senate.gov/public/\\_cache/files/b3116098-c577-4e64-8b3f-b95263d38c0e/the-economic-effects-of-capital-gains-taxation-june-1997.pdf](https://www.jec.senate.gov/public/_cache/files/b3116098-c577-4e64-8b3f-b95263d38c0e/the-economic-effects-of-capital-gains-taxation-june-1997.pdf) [<https://perma.cc/v5cr-mwt4>].

<sup>227</sup> See, e.g., Edward A. Dyl, *Capital Gains Taxation and Year-End Stock Market Behavior*, 32 J. FIN. 165 (1977).

<sup>228</sup> See, e.g., Len Burman, *Capital Gains Tax Rates and Economic Growth (or Not)*, FORBES (Mar. 15, 2012), <https://www.forbes.com/sites/leonardburman/2012/03/15/capital-gains-tax-rates-and-economic-growth-or-not/#6998ca7a1e2e> [<https://perma.cc/AN9D-WBLE>].

<sup>229</sup> An example of this approach is embraced in I.R.C. § 1231. This Code section permits taxpayers the best of two worlds: on the dispositions of their trade and business assets, if taxpayers experience overall gains, they secure a capital gains tax rate preference; conversely, on the dispositions of their trade and business assets, if they experience

But, as previously pointed out, technological advances have eclipsed the traditional economic forces of yesteryear embodied in labor. While the equivalent of trillions of dollars has been spent promoting the use of capital in the form of various tax expenditures, the same level of resources has not been devoted to spurring the use of labor (see part 2, below). This annual spending cycle dedicated to capital must end; instead, to propel a nimble and capable workforce that harmoniously and symbiotically functions with capital, Congress needs to make significant investments in labor.

A starting point to treating capital and labor equally is via tax rates. In the twenty-first century, there is no compelling reason for income generated by capital to be treated any more favorably than income from labor. Both should be subject to the same tax rates. By leveling the playing field in this fashion and eliminating its procapital bias, Congress would send a loud and unambiguous message to the economic community: both capital and labor need to be vibrant. As technology advances, capital needs to evolve in a manner that can maximize labor's potential; simultaneously, the workforce needs to evolve in a manner that can likewise maximize capital's potential.

Until capital production can exist on its own and is wholly automated, labor remains an essential component of the economy. Congress should therefore seek to cultivate it. Having universal tax rates applicable to income (whether derived from labor or capital) is an important step forward in realizing this goal.

## 2. *Subsidization of Capital Relative to Labor*

Next, Congress should curtail its spending on subsidies to promote capital and invest more in the promotion of labor. The tax law provides subsidies through tax expenditures—those deductions, credits, and exemptions in the Code that are designed to achieve various social and economic goals.<sup>230</sup> The current list of tax expenditures in the Code is long and extensive.<sup>231</sup>

Consider the largest of such expenditures: the Code presently excludes the provision of employer-provided health-care insurance from the tax base.<sup>232</sup> While there are presumably legitimate public policy objectives associated with this tax expenditure's institution and retention, it significantly distorts the tax base and costs the Treasury an estimated quarter of a trillion dollars annually in forgone revenue.<sup>233</sup>

---

overall losses, they are allowed ordinary loss treatment (and the avoidance of the capital loss limitation rules). Under the Code, no other types of assets are afforded such favorable tax treatment.

<sup>230</sup> Stanley S. Surrey, *Federal Income Tax Reform: The Varied Approaches Necessary to Replace Tax Expenditures with Direct Governmental Assistance*, 84 HARV. L. REV. 352, 354 (1970). As defined under the Congressional Budget and Impoundment Control Act of 1974 (Budget Act), *tax expenditures* are “revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of tax liability.” Congressional Budget and Impoundment Control Act of 1974, Pub. L. No. 93-344, § 3(3).

<sup>231</sup> Every year, the Joint Committee on Taxation publishes a list of tax expenditures. The most recent, spanning 55 pages, is found in following report: JOINT COMM. ON TAX'N, JCX-34-18, ESTIMATES OF FEDERAL EXPENDITURES FOR FISCAL YEARS 2017–2021 (2018), <https://www.jct.gov/publications.html?func=startdown&id=5095>.

<sup>232</sup> I.R.C. § 106.

<sup>233</sup> See SEAN LOWRY, CONG. RESEARCH SERV., HEALTH-RELATED TAX EXPENDITURES: OVERVIEW AND ANALYSIS 5 (Jan. 8, 2016), <https://fas.org/sgp/crs/misc/R44333.pdf> [<https://perma.cc/Z5M2-3ZMV>] (“In FY2016,

*AUTOMATION AND THE INCOME TAX*

While there are a number of tax expenditures in the Code that subsidize capital and a number that subsidize labor, the subsidies to capital far outweigh those to labor. The five largest capital-related tax expenditures estimated for 2018 are as follows: (i) the reduced tax rate on dividends and capital gains, (ii) bonus depreciation, (iii) the deduction for mortgage interest, (iv) the exclusion of capital gains on the sale of a residence, and (v) the exclusion of capital gains at death.<sup>234</sup> In contrast, the five largest labor-related tax expenditures estimated for 2018 are as follows: (i) the exclusion of benefits provided under cafeteria plans, (ii) credits for college tuition, (iii) the deduction for charitable contributions to educational institutions, (iv) the exclusion of miscellaneous fringe benefits, and (v) the exclusion of interest on state and local bonds for nonprofit and public educational facilities.<sup>235</sup>

Tables 3 and 4, below, detail the revenue loss associated with these expenditures projected for 2018.

**Table 3: Capital-Related Tax Expenditures**<sup>236</sup>

<b>Expenditure</b>	<b>Dollar Amount (in Billions)</b>
Reduced tax rate on dividends and capital gains	<b>\$128.7</b>
Bonus depreciation	<b>\$62.6</b>
Deduction for mortgage interest	<b>\$40.7</b>
Exclusion of capital gains on sale of residence	<b>\$34.4</b>
Exclusion of capital gains at death	<b>\$32.6</b>
<b>TOTAL</b>	<b>\$299.0</b>

---

health tax expenditures are estimated to amount to \$234.0 billion.”).

<sup>234</sup> JOINT COMM. ON TAX’N, *supra* note 231, at 36–38.

<sup>235</sup> In selecting the largest expenditures related to labor, we relied on the Joint Committee report’s classifications of expenses relating to either “Education and Training” or “Employment.” Other expenditures that bear some relationship to labor were omitted because of their classification. For example, the earned income tax credit and various retirement benefits are classified as “Income Security” expenditures, and the exclusion of employer contributions for health care is classified as a “Health” expenditure. *See id.* at 40–43.

<sup>236</sup> *Id.* at 36–38 (combining expenditures for corporations and individuals in dollar amounts). We omitted the 20 percent deduction under section 199A for this purpose, estimated to cost \$34.8 billion for 2018, because service-oriented businesses under the income threshold will be able to claim it, so it is unclear how much of the expenditure can be attributed to capital as opposed to labor.

**Table 4: Labor-Related Tax Expenditures**<sup>237</sup>

<b>Expenditure</b>	<b>Dollar Amount (in Billions)</b>
Exclusion of benefits provided under cafeteria plans	<b>\$34.3</b>
Credits for tuition for postsecondary education	<b>\$19.3</b>
Deductions for charitable contributions to educational institutions	<b>\$10.1</b>
Exclusion of miscellaneous fringe benefits	<b>\$7.8</b>
<u>Exclusion of bond interest for educational facilities</u>	<u><b>\$3.1</b></u>
<b>TOTAL</b>	<b>\$74.6</b>

These numbers are revealing. In terms of the largest tax expenditures, Congress currently spends *four times more* annually promoting the use of capital compared to labor. This disproportionate spending is anachronistic in nature, however, harkening back to a time period during which the economy was laborcentric as opposed to capitalcentric; in all likelihood, Congress instituted these tax expenditures to invigorate capital use. For a whole host of reasons, including favorable tax policies, this congressional policy has proven wildly successful: capital, rather than labor, is now the dominant productive force in the nation's economy.<sup>238</sup>

A top priority of the nation's tax reform agenda should be to rethink and reform the current capital/labor dynamic. In today's economic environment, there is no reason that Congress should generously spend far more revenue promoting capital than labor. Instead, Congress should reverse the dollar amounts dedicated to these tax expenditures or, at the very least, handle them with parity. By eliminating (i) expensing and accelerated depreciation deductions, (ii) the tax rate preference for qualified dividends and capital gains, and (iii) section 1014 (which allows capital gains to escape tax at death), Congress could curtail subsidization of capital purchases to the tune of billions of dollars.<sup>239</sup> On the other side of the ledger sheet, Congress should offer more robust credits, deductions, and exclusions related to educational expenditures;<sup>240</sup> these sorts of measures would strengthen labor's intellectual agility, making it a much more attractive commodity.<sup>241</sup>

### 3. *Alternative Means to Fund Social Security and Dispense Its Benefits*

As discussed above in Section III.C., as labor income has gradually dwindled in recent

<sup>237</sup> *Id.* at 40–41 (combining expenditures for corporations and individuals in dollar amounts). We omitted the expenditure for “Special tax provisions for employee stock-ownership plans,” estimated to cost \$3.8 billion for 2018, because stock ownership is more closely related to capital despite this expenditure's classification under “Employment.”

<sup>238</sup> PIKETTY, *supra* note 201.

<sup>239</sup> See, e.g., Yoram Margalioth, *Not a Panacea for Economic Growth: The Case of Accelerated Depreciation*, 26 VA. TAX REV. 493 (2007) (advocating depreciation methods that match economic depreciation).

<sup>240</sup> Richard Goode, *Educational Expenditures and the Income Tax*, in ECONOMICS OF HIGHER EDUCATION 281 (Selma J. Mushkin ed., 1962); David S. Davenport, *Education and Human Capital: Pursuing an Ideal Income Tax and a Sensible Tax Policy*, 42 CASE W. RES. L. REV. 793 (1992); Brian E. Lebowitz, *On the Mistaxation of Human Capital*, 52 TAX NOTES 825 (Aug. 12, 1991).

<sup>241</sup> For a discussion of potential expenditures Congress could make to promote labor, see Mazur, *supra* note 132, at 42–44.

*AUTOMATION AND THE INCOME TAX*

years, the share of payroll taxes as a percentage of overall tax revenues has correspondingly declined. If this downward trend in payroll tax revenue continues, it will place added pressure on the nation's primary source of funding for retirement, Social Security, which studies indicate is already in financial jeopardy.<sup>242</sup> Thus, as a practical matter, as the role of labor becomes less important in the current economy, it makes less sense to rely solely on payroll taxes to fund retirement expenditures going forward.<sup>243</sup>

Further, in the modern era, it is unclear why labor income and the subsequent receipt of Social Security benefits should continue to correspond. While congressional members commonly link payroll tax payments to funding of a defined-benefit retirement plan in the form of Social Security,<sup>244</sup> this is not what happens in practice. Congress does not set aside taxpayers' payroll tax payments in a reserve and utilize this investment pool to satisfy the nation's Social Security obligations. Instead, payroll tax receipts are commingled with general tax receipts; and, together, this amalgamated whole is used to meet the government's expenditure obligations.<sup>245</sup> And unlike traditional retirement plans, payroll tax payments lack neutrality: those taxpayers whose life spans are shorter generally bear a larger tax burden than those taxpayers whose life spans are longer—and history has taught us that those with the shorter life spans tend to be poorer and people of color, while those with longer lifespans are likely to be financially well off and Caucasian.<sup>246</sup> Studies also continually indicate that, due to taxpayers' overall increasing longevity, there is a mismatch between payroll payments in and anticipated Social Security payments out.<sup>247</sup> Stripped down to its essentials, payroll taxes constitute an extra tax on labor masquerading as a retirement-funding mechanism.

One alternative to Social Security is to replace it with a guaranteed, or “universal basic

---

<sup>242</sup> See *infra* note 247 and accompanying text.

<sup>243</sup> See Mazur, *supra* note 132, at 27-28 (discussing funding retirement insurance with less “labor-focused” taxes).

<sup>244</sup> Floyd Norris, *Is It Really a Pension? It's a Problem*, N.Y. TIMES (Nov. 4, 2010), <http://www.nytimes.com/2010/11/05/business/05norris.html> (“If you look at Social Security as a pension plan, that result seems not only fair, but required. If you contribute more to a normal pension plan, you expect to get higher benefits. Why else would you contribute? And Social Security taxes are often called contributions.”); Alan L. Gustman, Thomas Steinmeier & Nahid Tabatabai, *The Growth in Social Security Benefits Among the Retirement Age Population from Increases in the Cap on Covered Earnings* 1 (Nat'l Bureau of Econ. Research, Working Paper No. 16501, 2010), <http://www.nber.org/papers/w16501.pdf> [<https://perma.cc/64SX-PLXA>] (“In addition, as opposed to an increase in the payroll tax rate, raising the tax ceiling creates a leak in the (future) finances of the system in the form of an increase in future benefit obligations to be paid to those at the top of the earnings distribution.”).

<sup>245</sup> David John, *Misleading the Public: How the Social Security Trust Fund Really Works*, HERITAGE FOUND. (Sept. 2, 2004), <http://www.heritage.org/social-security/report/misleading-the-public-how-the-social-security-trust-fund-really-works> [<https://perma.cc/8SK8-5FZN>] (“There is no cash in the Social Security trust fund, and there never has been any. The Social Security trust fund is merely an accounting device . . .”).

<sup>246</sup> See, e.g., C. Eugene Steuerle, Karen E. Smith & Caleb Quakenbush, *Has Social Security Redistributed to Whites from People of Color*, URBAN INST. 1 (2012), <http://www.urban.org/sites/default/files/alfresco/publication-pdfs/412943-Has-Social-Security-Redistributed-to-Whites-from-People-of-Color-PDF> [<https://perma.cc/U7YR-3G3Y>] (“When considered across many decades—historically, currently, and in the near future—Social Security redistributes from people of color to whites.”).

<sup>247</sup> See, e.g., Robert Pear, *Social Security's Financial Health Worsens*, N.Y. TIMES (April 23, 2012), <http://www.nytimes.com/2012/04/24/us/politics/financial-outlook-dims-for-social-security.html> (“The Social Security trust fund will be exhausted in 2033, three years sooner than projected last year, the administration said. And Medicare's hospital insurance trust fund will be depleted in 2024, the same as last year's estimate, it said.”).

income” (UBI), payment.<sup>248</sup> The central premise of the UBI proposal is to replace all government transfer payments—Social Security, Medicaid, earned income tax credits, food stamps, etc.—with one lump sum payment for each individual.<sup>249</sup> Charles Murray, for example, proposes an annual payment of \$10,000 (paid in monthly installments), with an additional \$3,000 that must be used to purchase health insurance.<sup>250</sup> Regardless of the amount, a key aspect of a UBI or other guaranteed income payment is that it would not be tied to work: every taxpayer would automatically be entitled to some minimum transfer payment regardless of employment status or earnings. That payment, however, would be the government’s sole contribution toward funding of retirement and other social needs.<sup>251</sup> While the idea is not new, the UBI has been gaining more traction in recent years, with several cities implementing pilot programs both in the United States and abroad.<sup>252</sup>

It is beyond the scope of this article to fully explore the intricacies of current proposals for a UBI, but it is clear that policy makers should consider a radical restructuring of our current mechanism for funding retirement, health care, and basic needs for the poor.<sup>253</sup> Projections of the future funding of Social Security and Medicare are already grim,<sup>254</sup> and declining payroll tax revenues associated with diminishing labor income will only exacerbate this problem. A UBI, paired with enhanced tax revenue from higher taxes on capital, would provide a steady welfare safety net to withstand radical shifts in employment brought about by automation.

## B. Implications Associated with Proposed Tax Reform

Tax reform measures touch upon many aspects of the economy. And while their macro-effects and micro-effects are often difficult to predict, there are some repercussions that can be readily anticipated.<sup>255</sup> This subsection explores the anticipated consequences associated with the

<sup>248</sup> See, e.g., CHARLES MURRAY, *IN OUR HANDS: A PLAN TO REPLACE THE WELFARE STATE* (2016).

<sup>249</sup> As Professors Miranda Perry Fleischer and Daniel Hemel point out, the idea of a guaranteed income payment can be traced back at least as far as the late eighteenth century and more recently to economist Milton Friedman in his proposal for a “negative income tax.” See generally Miranda Perry Fleischer & Daniel Jacob Hemel, *Atlas Nods: The Libertarian Case for a Basic Income*, WIS. L. REV. 1189 (2017).

<sup>250</sup> Charles Murray, *A Guaranteed Income for Every American*, WALL ST. J., June 3, 2016, at C1. Murray’s proposal would guarantee \$10,000 for adults earning up to \$30,000, but the amount would gradually phase down (through a surtax) to \$6,500 for those earning \$60,000 of earned income or more.

<sup>251</sup> There are advantages and disadvantages associated with the UBI proposal. On the one hand, it would (ideally) ensure that every taxpayer could afford basic living expenses, and it would vastly reduce the enforcement costs associated with the current welfare regime because eligibility requirements would not need to be policed. On the other hand, critics have noted a number of potential drawbacks, the biggest of which is that a UBI would likely require an increase in tax rates (even accounting for the elimination of other entitlement programs). See Fleischer & Hemel, *supra* note 249 (estimating that a \$10,000 UBI would require a tax rate increase of 10–11 percent, after accounting for the elimination of existing entitlement programs).

<sup>252</sup> See Fleischer & Hemel, *supra* note 249 (describing trial programs involving cash transfers in Finland; Kenya; the Netherlands; and Oakland, California).

<sup>253</sup> Another option would be increasing payroll taxes on capital income. See Mazur, *supra* note 132, at 30-33.

<sup>254</sup> See *supra* note 247.

<sup>255</sup> By way of example, consider the exclusion from income of interest on state and local bonds. I.R.C. § 103. As a result of this exemption, states and local governments can much more readily borrow funds secured by lower carrying costs. See, e.g., GRANT A. DRIESSEN, CONG. RES. SERV., *TAX-EXEMPT BONDS: A DESCRIPTION OF STATE AND LOCAL GOVERNMENT DEBT*, at summary (2016), <https://fas.org/sgp/crs/misc/RL30638.pdf> [https://perma.cc/L37C-T6KS] (Noting that due to the exclusion from income of interest on state and local bonds,

*AUTOMATION AND THE INCOME TAX*

tax reforms proposed.

Although Congress understandably wants to promote capital use and technological innovations, it does not want to weaken or undermine the vibrancy of the nation's labor force. Thus, it should institute one or more of the tax reform measures enumerated above: institute a universal progressive tax rate structure, curtail subsidization of capital relative to labor, and adopt alternative Social Security funding and disbursement mechanisms. The likely effects of such tax reform would be threefold: (1) labor's use would be buoyed or, at the very least, stabilized; (2) administrative efficiencies would be gained; and (3) wealth equity would be enhanced.

*1. Labor's Use Would Be Buoyed or Stabilized*

Elementary economics teaches that if something costs less, demand is greater.<sup>256</sup> Assuming this axiom's validity, if Congress were to repeal the payroll tax, labor would cost less, making its use more economically attractive. Consider the implications for both employers and employees.

For starters, payroll tax elimination would enable employers to have greater financial latitude to hire more employees. For every \$100 of wages, an employer could secure \$7.65 of savings in the absence of a payroll tax. These tax savings could be used for a variety of purposes, including the retention of a larger labor force. The math is simple: for every thirteen employees that a business currently hires (assuming the same wage), the elimination of the 7.65 percent payroll tax would essentially enable it to hire a fourteenth employee for no additional out-of-pocket cost (i.e.,  $13 \times 7.65 \text{ percent} = 99.45 \text{ percent}$ ).

For employees, the anticipated effect of eliminating the payroll tax is somewhat more indeterminate. On the one hand, payroll tax elimination should reduce the cost of labor, increasing its demand; this increased demand should result in higher wages being paid. On the other hand, assuming revenue neutrality, payroll tax revenue would have to come from an alternative source, such as higher marginal income tax rates and/or the introduction of a new revenue source (e.g., carbon tax). Until Congress identifies this alternative source, the overall net economic effect on employees remains uncertain.<sup>257</sup>

---

states and local governments can much more readily borrow funds secured by lower carrying costs, "This tax exemption of interest income is granted because it is believed that state and local capital facilities will be underprovided if state and local taxpayers have to pay the full cost."). Not all effects of tax reform are easy to predict. Consider the deduction for home interest. I.R.C. § 163(h)(3). While the real estate lobby claims that this deduction entices people to purchase homes, there is scant empirical evidence that this is actually the case. For excellent pieces that present this point of view, see Dennis J. Ventry Jr., *The Accidental Deduction: A History and Critique of the Tax Subsidy for Mortgage Interest*, 73 L. & CONTEMP. PROBS. 233 (2009); Bruce Barlett, *The Sacrosanct Mortgage Interest Deduction*, N.Y. TIMES (Aug. 6, 2013), <https://economix.blogs.nytimes.com/2013/08/06/the-sacrosanct-mortgage-interest-deduction/> [<https://perma.cc/7RMN-LJC2>]

<sup>256</sup> See, e.g., Catherine Rampell, *Why Is Turkey Cheaper When Demand Is Higher?*, N.Y. TIMES (Nov. 19, 2013), <http://www.nytimes.com/2013/11/24/magazine/why-is-turkey-cheaper-when-demand-is-higher.html> ("Consumers might get more price-sensitive during periods of peak demand and do more comparison-shopping, so stores have to drop their prices if they want to capture sales.").

<sup>257</sup> The effect of higher marginal tax rates remains unsettled: on the one hand, there are many economists who contend that higher marginal tax rates drive taxpayers to pursue more leisure-oriented activities (i.e., the substitution effect); on the other hand, there are other economists who argue that higher marginal tax rates lead taxpayers to work more to secure the same net take-home pay (i.e., the income effect). Orley Ashenfelter & James Heckman, *The Estimation of Income and Substitution Effects in a Model of Family Labor Supply*, 42 ECONOMETRICA 73 (1974).

On balance, a reduction or elimination of the payroll tax should have a positive bearing on the economy and, in particular, provide vibrancy to the labor market. As employers ramped up hiring, the nation's workforce would benefit; meanwhile, higher wages combined with a larger tax burden (be it in the form of income tax, carbon tax, or other tax) would essentially leave employees in the same position that they were in prior to the institution of this proposed tax reform measure. Ultimately, an economic equilibrium point would be reached in which labor's use would be either buoyed or, at the very least, stabilized.

Further, Congress could use the projected revenue savings from no longer subsidizing business and investment profits to augment educational opportunities. Study after study reports that the United States is lagging in training the next generation of engineers and scientists.<sup>258</sup> Congress therefore needs to send a signal that this is where the future lies and that, to this end, it is willing to invest in the human capital of its youth. How exactly this objective is achieved is the fodder of a vast array of analysis in the educational arena. Suffice it to say that Congress should be creative in its approaches and utilize the Code as a tool to promote investments in human capital. A myriad of opportunities exists; none of which is the unequivocal answer.

## 2. *Administrative Efficiencies Would Be Gained*

A major contributing factor to the Code's girth and complexity is the preferential tax rate treatment of capital gains. The Code is replete with sections, subsections, clauses, and subclauses that elaborate when and if something is a capital asset and the appropriate tax treatment associated with this label.<sup>259</sup> These are not easy-to-understand provisions; to the contrary, some of the Code's most challenging attributes relate to capital gains treatment and the concomitant computations that these determinations engender.<sup>260</sup>

If Congress eliminated the capital gains tax rate preference, administrative efficiencies would result. If all income was subject to the same tax rates, taxpayers would have an easier time comprehending their tax burden. With a few keystrokes on their computer or numeric entries on their smartphone, taxpayers could quickly secure a good idea of their anticipated annual tax burden. Furthermore, they would no longer have to dwell on whether they should hold onto their capital investments for a particular period of time (e.g., more than one year)<sup>261</sup> or how deductions for certain charitable contributions might be limited.<sup>262</sup> To be sure, even if Congress eliminated

---

<sup>258</sup> See Drew Desilver, *U.S. Students' Academic Achievement Still Lags That of Their Peers in Many Other Countries*, PEW RES. CENTER.: FACTTANK, Feb. 15, 2017, <http://www.pewresearch.org/fact-tank/2017/02/15/u-s-students-internationally-math-science/> [<https://perma.cc/GS5K-VS4V>] ("Recently released data from international math and science assessments indicate that U.S. students continue to rank around the middle of the pack, and behind many other advanced industrial nations."); Katherine Beard, *Behind America's Decline in Math, Science and Technology*, U.S. NEWS (Nov. 13, 2013), <https://www.usnews.com/news/articles/2013/11/13/behind-americas-decline-in-math-science-and-technology> [<https://perma.cc/8CWM-BSSK>] ("America has fallen far from its place as a leader in math and science, experts said during a Science, Technology, Engineering and Math (STEM) Diversity Symposium on Capitol Hill . . .").

<sup>259</sup> See e.g., I.R.C. §§ 1211, 1212, 1221, 1222, 1231, 1234, 1239, 1245, 1248, and 1250.

<sup>260</sup> See generally Samuel A. Donaldson, *The Easy Case Against Tax Simplification*, 22 VA. TAX REV. 645, 713–22 (2003); John W. Lee, *Critique of Current Congressional Capital Gains Contentions*, 15 VA. TAX REV. 1 (1995).

<sup>261</sup> I.R.C. § 1222(3).

<sup>262</sup> I.R.C. § 170(e).

*AUTOMATION AND THE INCOME TAX*

the capital gains tax rate preference for some taxpayers, the Code would remain shrouded in mystery—however, for far more taxpayers, its enigmatic veil would be lifted.

Repealing the capital gains tax preference would also eliminate socially wasteful tax planning resulting from taxpayers and their advisers seeking out strategies to recharacterize labor income as capital gains.<sup>263</sup>

Furthermore, the I.R.S. would be a benefactor of a unified tax rate structure. A by-product of eliminating the distinction between capital gains and ordinary income tax treatment is that fewer resources would need to be dedicated not only to training I.R.S. personnel to identify capital assets but also to uncovering taxpayer-exploitation strategies. In addition, the I.R.S. could redirect resources away from monitoring whether taxpayers were being compliant in this sphere of tax practice and toward other pressing needs (e.g., identity theft and privacy concerns) that are currently besieging the agency and the general public.<sup>264</sup>

### 3. *Wealth Equity Would Be Enhanced*

Over the last several decades, there has been compelling evidence that the vast majority of the nation's income has inured disproportionately to the wealthy.<sup>265</sup> Furthermore, it is likewise clear that the Code has played a contributory role in perpetuating wealth inequity.<sup>266</sup> Indeed, for the wealthiest Americans, only a small portion of income stems from salaries—the majority of income is passive, taxed at preferential rates.<sup>267</sup>

While there is no single panacea for reducing wealth inequality, reforming the Code

---

<sup>263</sup> See, e.g., *supra* notes 185-194 and accompanying text.

<sup>264</sup> See Dennis J. Ventry Jr., *Why Steven Mnuchin Wants a Stronger I.R.S.*, N.Y. TIMES (Mar. 27, 2017), <https://www.nytimes.com/2017/03/27/opinion/why-steven-mnuchin-wants-a-stronger-irs.html>:

Unfortunately, the seemingly endless cuts have compromised the agency's ability to collect taxes, combat identity theft, prosecute tax criminals and deliver taxpayer services. The size of the audit staff has fallen by 30 percent, resulting in a decades-low audit rate of 0.7 percent for individual taxpayers. For large corporations, the number of returns audited in 2016 fell by nearly half compared to 2006, to 9.5 percent from 17 percent. Meanwhile, the enforcement unit lost 7,000 employees. The criminal investigations unit has also suffered staff reductions, resulting in fewer cases, prosecutions and convictions.

<sup>265</sup> See Emmanuel Saez & Gabriel Zucman, *Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data* (Nat'l Bureau of Econ. Research, Working Paper No. 20625, 2014), <https://gabriel-zucman.eu/files/SaezZucman2014.pdf> [<https://perma.cc/495J-52KV>] (“The rise of wealth inequality is almost entirely due to the rise of the top 0.1% wealth share, from 7% in 1979 to 22% in 2012—a level almost as high as in 1929. The bottom 90% wealth share first increased up to the mid-1980s and then steadily declined. The increase in wealth concentration is due to the surge of top incomes combined with an increase in saving rate inequality.”); EMMANUEL SAEZ, STRIKING IT RICHER: THE EVOLUTION OF TOP INCOMES IN THE UNITED STATES, at 1st page. (unnumbered) (2013), <http://eml.berkeley.edu/~saez/saez-UStopincomes-2012.pdf> [<https://perma.cc/P5SS-GZX9>] (“Top 1% incomes grew by 31.4% while bottom 99% incomes grew only by 0.4% from 2009 to 2012.”).

<sup>266</sup> Wojciech Kopczuk, *Recent Evolution of Income and Wealth Inequity, Comments on Piketty's Capital in the Twenty-First Century*, 68 TAX L. REV. 545 (2015); Beverly Moran, *Wealth Redistribution and the Income Tax*, 53 HOW. L.J. 319 (2010).

<sup>267</sup> See, e.g., Sanjay Sanghoo, *Fantasy Cliff: Debunking the Biggest Myths About the Bush Tax Cuts and the Rich*, HUFFPOST (Jan. 30, 2012, 10:45 am), [https://www.huffingtonpost.com/sanjay-sanghoo/bush-tax-cuts\\_b\\_2207472.html](https://www.huffingtonpost.com/sanjay-sanghoo/bush-tax-cuts_b_2207472.html) [<https://perma.cc/CVL7-32TW>] (“Unlike most low or middle income Americans, the rich make a substantial portion of their money from passive income (on average, the top 400 earners in the US make 59 percent of their income from capital gains or dividends versus only 9 percent from salaries), which is taxed at a preferential rate of 15 percent.”).

constitutes a viable starting point. Consider that tax expenditures inure disproportionately to upper-income taxpayers<sup>268</sup> and, furthermore, that the vast majority of business and investment income plus capital gains is earned by higher-income earners.<sup>269</sup> Axiomatically, the converse must be true as well: the less-well-to-do enjoy fewer tax expenditures, and, furthermore, they derive their income primarily through labor. Left untouched, the Code thus appears poised to worsen the existing wealth gap.

To close or, at the very least, reduce the wealth gap, Congress must recognize that technological advances are fundamentally changing the economic landscape. Relative to labor, capital has become the dominant force. In this environment, the use of capital no longer needs to be subsidized; instead, labor in the form of human capital needs to be cultivated. Two ways that this can be achieved are as follows: first, Congress must overhaul the nation's tax expenditures and dedicate a larger proportion to strengthening human capital; second, taxing income at similar rates—no matter how derived—would help narrow existing wealth disparities.

## V. CONCLUSION

When it comes to fundamental tax reform, Congress can no longer afford to ignore the transformation of the nation's economic landscape. Relative to labor, capital has catapulted economic productivity to new heights—a trend that will undoubtedly continue and likely accelerate. And while the interplay between capital and labor has many important public policy implications, perhaps none is as important as the direction that tax reform should take.

For close to a century, Congress has harbored what amounts to a fixation on taxing the income that labor produces. It has proven to be a plentiful “crop” that historically was easy to harvest. But as labor's yields dwindle and, in some cases, entirely dry up, bountiful new crops are emerging in the form of business profits, investment income, and capital gains. Congress must therefore revisit how it tends to these crops and shares in taxpayers' harvest of them. To state the obvious, in the nation's economic field, capital has overtaken labor. The only unanswered question is whether Congress will strategically tend this field and cultivate it to the nation's advantage.

To preserve the Code's sanctity, the conclusion is elementary. Instead of taxing income from labor heavily, business profits and investment income moderately, and capital gains lightly

---

<sup>268</sup> See CONG. BUDGET OFFICE, THE DISTRIBUTION OF MAJOR TAX EXPENDITURES IN THE INDIVIDUAL INCOME TAX SYSTEM 2 (2013), [http://cbo.gov/sites/default/files/cbofiles/attachments/43768\\_DistributionTaxExpenditures.pdf](http://cbo.gov/sites/default/files/cbofiles/attachments/43768_DistributionTaxExpenditures.pdf) [<https://perma.cc/CAZ2-85QT>] (“In calendar year 2013, more than half of the combined benefits of those tax expenditures will accrue to households with income in the highest quintile (or one-fifth) of the population (with 17 percent going to households in the top 1 percent of the population), CBO estimates. In contrast, 13 percent of those tax expenditures will accrue to households in the middle quintile, and only 8 percent will accrue to households in the lowest quintile . . .”).

<sup>269</sup> See INTERNAL REVENUE SERV., CUMULATIVE 2015 FILING SEASON INFORMATION FOR TAX RETURNS PROCESSED BY THE IRS THROUGH MAY 28, 2015, <https://www.irs.gov/pub/irs-soi/15inweek21.xls> [<https://perma.cc/BY8X-W3HX>] (of those taxpayers who have adjusted gross incomes in excess of \$10 million, showing that 39.6 percent of their income was comprised of capital gains). See also Tony Nitti, *Why Republicans Should Embrace a 28% Tax on Capital Gains*, FORBES (Jan. 20, 2015) (“These preferential rates are expected to save taxpayers \$540 billion over the next four years. And of that \$540 billion in savings, approximately 85% of it will inure to the wealthiest 2%.”).

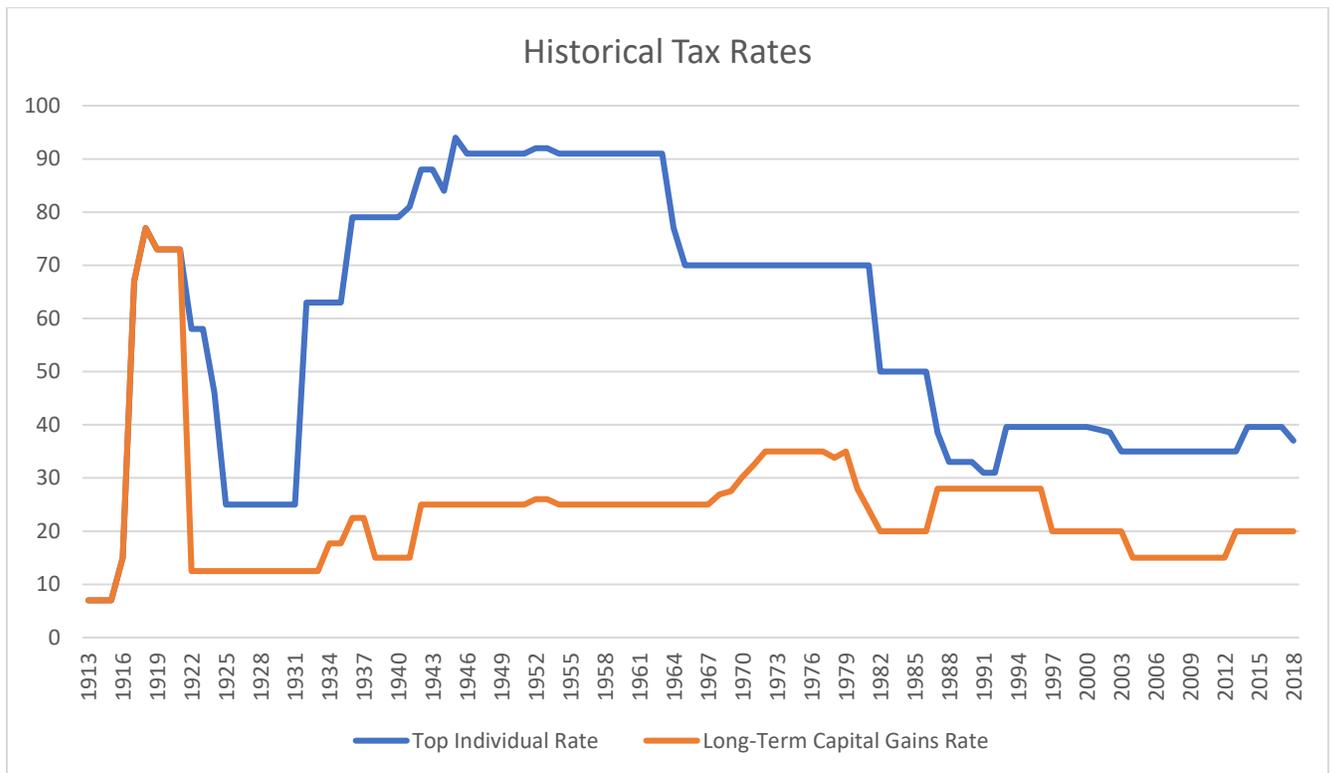
*AUTOMATION AND THE INCOME TAX*

(or not at all), all income—regardless of source—must bear a similar tax burden.<sup>270</sup> Adhering to this straightforward approach would, for purposes of the Code, be in line with restoring the concept of income to its theoretical roots. This would have several virtues, including resurrecting labor’s economic role in the economy, simplifying tax administration, and fostering equity. Transforming the Code into a more efficient revenue-raising tool will strengthen the nation’s fiscal solvency and, thus, ensure the country’s enduring vitality.

---

<sup>270</sup> See RICHARD GOODE, *THE INDIVIDUAL INCOME TAX* 11 (1964) (calling for a system of uniform taxation); Walter J. Blum, *Federal Income Tax Reform—Twenty Questions*, 41 *TAXES* 672, 680–82 (1963) (same). There are commentators who instead advocate for “optimal tax.” See, e.g., Eric M. Zolt, *The Uneasy Case for Uniform Taxation*, 16 *VA. TAX REV.* 39, 41 (1996):

There are at least three reasons [that optimal taxation is better than uniform taxation]. First, advances in economic and political theory throw new light on the design of tax systems and the usefulness of nonuniform taxation. Second, low compliance rates for certain types of income undermine the fairness and efficiency of tax systems where nonuniform tax treatment could significantly improve the ability of the taxing authorities to collect and enforce taxes. Third, the increasing international flows of capital severely undermine the validity of a uniform tax system, particularly in small countries with open economies.

APPENDIX<sup>271</sup>

<sup>271</sup> This chart was prepared with data from CCH, *A Historical Look at Capital Gains Rates*, <https://wolterskluwer.com/binaries/content/assets/wk/pdf/news/ta/historicalcapitalgainsrates.pdf> [<https://perma.cc/56NH-3GU4>], and THE TAX FOUNDATION, *Federal Individual Income Tax Rates History*, [https://files.taxfoundation.org/legacy/docs/fed\\_individual\\_rate\\_history\\_nominal.pdf](https://files.taxfoundation.org/legacy/docs/fed_individual_rate_history_nominal.pdf) [<https://perma.cc/PX24-N92V>].