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# THEY TOOK OUR JOBS! THE ROBOT TAX, ITS IMPRACTICABILITY, AND A BETTER SOLUTION

Gilberto Gonzalez\*

Fifty years ago, Americans experienced “a moment of unity” as we watched the Apollo 11 moon landing.<sup>1</sup> Today, smartphones small enough to fit inside our pockets possess higher computing power than the computers NASA used during the Apollo mission.<sup>2</sup> And tomorrow, technology may destroy the unity once created by displacing workers from their jobs.<sup>3</sup> Known as the “Fourth Industrial Revolution,” technological innovations will soon outperform and displace human workers across industries.<sup>4</sup> Hence, the question is not if, but how should society respond to a future where automation employment is the norm?

## I. HUMANS NEED NOT APPLY, THE THREAT OF AUTOMATION

Employment disruption by working machines is nothing new. The industrial revolution reduced manual work,<sup>5</sup> while nowadays, ATMs have reduced the need for bank tellers. However, as technology advances, so does the scope of its

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\* Gilberto Gonzalez is an attorney at Hinshaw and Culbertson. I am thankful to Professor Richard L. Kaplan whose teaching style gave me an interest in tax law. I am also thankful to my dear friend Rumi Lee who assisted me with the South Korean tax research. Lastly, special thanks to the editors of the *University of Illinois Law Review Online* for helping me edit this Article.

1. Over 90% of households watched the broadcasting. Ani Bundel, *The Apollo 11 Moon Landing Was a Moment of National Unity Because Television Made It So*, NBC NEWS (July 18, 2019, 3:19 AM), <https://www.nbcnews.com/think/opinion/apollo-11-moon-landing-was-moment-national-unity-because-television-ncna1030911> [<https://perma.cc/N5U2-YSK4>].

2. Tibi Puiu, *Your Smartphone Is Millions of Times More Powerful than the Apollo 11 Guidance Computers*, ZME SCL: NEWS (May 13, 2021), <https://www.zmescience.com/research/technology/smartphone-power-compared-to-apollo-432/> [<https://perma.cc/KV4E-WRAK>].

3. See Klaus Schwab, *The Fourth Industrial Revolution: What It Means, How to Respond*, WORLD ECON. F. (Jan. 14, 2016), <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/> [<https://perma.cc/6JZL-72YT>].

4. See *id.*

5. For example, the invention of tractors and assembly lines significantly decreased the demand for farmers and factory workers. Cynthia Stokes Brown, *The Industrial Revolution*, KHAN ACAD., <https://www.khan-academy.org/partner-content/big-history-project/acceleration/bhp-acceleration/a/the-industrial-revolution> (last visited June 5, 2022) [<https://perma.cc/TLU3-SACQ>]; *Effects of Agriculture on the Industrial Revolution*, FOUNDS. W. CULTURE, <http://foundations.uwgb.org/agriculture/> (last visited June 5, 2022) [<https://perma.cc/RV29-R4AJ>].

workplace displacement. Breakthrough developments are occurring exponentially, enabling the creation of artificial intelligence (“AI”), machine learning, deep learning, and quantum computing.<sup>6</sup> When put into the workforce, these technologies are known as automation: the “creation and application of technology to . . . control the production and delivery of products and services.”<sup>7</sup>

Automation can now assist, and even outperform, employment tasks in high-skill jobs, including lawyers<sup>8</sup> and doctors.<sup>9</sup> AI can also perform work tasks in the arts, occupations inherently premised on human qualities.<sup>10</sup> Even computer coders are not immune as software programs can now learn to code independently.<sup>11</sup> Human intelligence took thousands of years to evolve, but only a few decades for technology to match it—biology cannot compete against technology.<sup>12</sup>

Indeed, recent studies on this matter conclude that automation will lead to many unemployed people. A 2017 report by McKinsey Global Institute concluded that one-third of most occupations’ daily tasks could be automated by the next decade.<sup>13</sup> In the United States alone, automation could take up to 44% of working hours by 2030.<sup>14</sup>

The unemployment threat posed by automation increases when considering that employers are incentivized to automate their workforce. Most business decisions are driven by increasing profits.<sup>15</sup> Thus, employers will prefer employing machines over humans if it becomes cheaper to do so.<sup>16</sup> Studies repeatedly show

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6. See Schwab, *supra* note 3.

7. *What Is Automation?*, INT’L SOC’Y AUTOMATION, <https://www.isa.org/about-isa/what-is-automation> (last visited June 5, 2022) [<https://perma.cc/H4ND-LANU>].

8. For example, technology is now able to read contracts and spot issues. Jon Porter, *This ‘Robot Lawyer’ Can Take the Mystery out of License Agreements*, VERGE (Nov. 20, 2019, 9:00 AM), <https://www.theverge.com/2019/11/20/20973830/robot-lawyer-donotpay-ai-startup-license-agreements-sign-arbitration-clauses> [<https://perma.cc/YG6B-DJWB>]. Also, companies like IBM offer tech services that assist research and discovery process. *IBM Watson Is AI for Business.*, IBM: WATSON, <https://www.ibm.com/watson/about> (last visited June 5, 2022) [<https://perma.cc/88EY-LJN7>].

9. “Some forecast that medical AI will pervade 90% of hospitals and replace as much as 80% of what doctors currently do.” Chiara Longoni & Carey K. Morewedge, *AI Can Outperform Doctors. So Why Don’t Patients Trust It?*, HARV. BUS. REV. (Oct. 30, 2019), <https://hbr.org/2019/10/ai-can-outperform-doctors-so-why-dont-patients-trust-it> [<https://perma.cc/P5FC-FJVP>]. Technology is presently helping doctors to diagnose lethal diseases such as cancer. Andrew D. Smith, *As Large as Life: Using Artificial Intelligence in Cancer Care*, CURE (Oct. 25, 2019), <https://www.curetoday.com/publications/cure/2019/fall-2019/as-large-as-life-using-artificial-intelligence-in-cancer-care> [<https://perma.cc/X657-L3X5>].

10. For an article written by a robot, see GPT-3, *A Robot Wrote This Entire Article. Are You Scared Yet, Human?*, GUARDIAN (Sept. 8, 2020, 4:45 AM), <https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3> [<https://perma.cc/P87J-UQP2>].

11. Doug Johnson, *To Preserve Jobs for Humans, Some Propose a Robot Tax*, UNDARK (Apr. 27, 2020), <https://undark.org/2020/04/27/robot-tax/> [<https://perma.cc/4TLS-5RYB>].

12. See Lauren Horwitz, *AI vs. Human Intelligence Isn’t a Fair Matchup, Says Expert*, CISCO, <https://www.cisco.com/c/en/us/solutions/data-center-virtualization/ai-vs-human-intelligence.html> (last visited June 5, 2022) [<https://perma.cc/ZMV7-AVV9>].

13. JAMES MANYIKA ET AL., MCKINSEY GLOB. INST., *JOBS LOST, JOBS GAINED: WORKFORCE TRANSITIONS IN A TIME OF AUTOMATION* 103 (2017) (“Up to 33% of the 2030 workforce may need to switch occupational groups.”).

14. *Id.* at 102.

15. See Schwab, *supra* note 3.

16. See Johnson, *supra* note 11.

that implementing technologies in the workplace leads to increases in profits and productivity.<sup>17</sup> Moreover, machines can work 24/7 without demanding overtime, vacations, or benefits. After the increase of minimum wage laws, for example, some fast-food restaurants responded by investing in self-serve kiosks at the expense of cashier employees.<sup>18</sup>

Admittedly, debates continue over the long-term effects on employment from automation.<sup>19</sup> But most experts agree that automation will cause a temporary workforce displacement, with low-skill workers being the most affected.<sup>20</sup> A high unemployment rate, even if momentarily, creates harmful economic impacts for individuals and the nation as a whole. To compare, the unemployment rate was only 10% during the 2008 recession.<sup>21</sup> But the most up-to-date research shows that automation will take up to 44% of working hours by 2030.<sup>22</sup>

Therefore, to prevent harmful economic impacts, the government needs to take early action towards the job displacement created by automation. Advanced planning is necessary. Addressing a high unemployment rate after it happened leads to inadequate policies. For instance, consider the substantial economic impact from the forced unemployment created during the COVID-19 Pandemic by the stay-at-home orders. In the CARES Act, the U.S. government tried to promote the economy by pumping over 2 trillion dollars into the economy.<sup>23</sup> But this rushed approach was criticized as an inadequate and late government action.<sup>24</sup> The high unemployment rate continues, the economic impact persists, and we may be heading into a new recession.<sup>25</sup>

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17. See Sandra E. Black & Lisa M. Lynch, *What's Driving the New Economy?: The Benefits of Workplace Innovation*, 114 *ECON. J.* F97, F113 (2004).

18. See, e.g., Ed Rensi, *Thanks to 'Fight for \$15' Minimum Wage, McDonald's Unveils Job-Replacing Self-Service Kiosks Nationwide*, *FORBES* (Nov. 29, 2016, 1:37 PM), <https://www.forbes.com/sites/realspin/2016/11/29/thanks-to-fight-for-15-minimum-wage-mcdonalds-unveils-job-replacing-self-service-kiosks-nationwide/?sh=362235ff4fbc> [<https://perma.cc/NZT7-TRW2>].

19. See Cynthia Estlund, *What Should We Do After Work? Automation and Employment Law*, 128 *YALE L.J.* 254, 271–75 (2018); T.L. Andrews, *Robots Won't Take Your Job—They'll Help Make Room for Meaningful Work Instead*, *QUARTZ* (Mar. 15, 2017), <https://qz.com/932417/robots-wont-take-your-job-theyll-help-make-room-for-meaningful-work-instead/> [<https://perma.cc/T63G-YMEC>].

20. Jobs more likely to be automated include office support personnel, machinists, and cooks. See MANYIKA ET AL., *supra* note 13, at 102.

21. *Unemployment in November 2009*, U.S. BUREAU LAB. STAT. (Dec. 8, 2009), [https://www.bls.gov/opub/ted/2009/ted\\_20091208.htm?view\\_full](https://www.bls.gov/opub/ted/2009/ted_20091208.htm?view_full) [<https://perma.cc/7YLG-N54C>].

22. See MANYIKA ET AL., *supra* note 13, at 102.

23. Coronavirus Aid, Relief, and Economic Security Act (CARES Act), Pub. L. No. 116-136, 134 Stat. 281 (2020); *CARES Act*, OFF. INSPECTOR GEN. (Jan. 15, 2021, 11:54 AM), <https://oig.treasury.gov/cares-act> [<https://perma.cc/UUC2-KU6T>].

24. See Pamela Foohey, Dalí Jiménez & Christopher K. Odinet, *CARES Act Gimmicks: How Not to Give People Money During a Pandemic and What to Do Instead*, 2020 *U. ILL. L. REV. ONLINE* 81, 82 (2020).

25. See Alan FitzGerald, Vivien Singer, Sven Smit, Heather Hanselman & Daniella Seiler, *The Coronavirus Effect on Global Economic Sentiment*, MCKINSEY & CO. (Mar. 30, 2022), <https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/the-coronavirus-effect-on-global-economic-sentiment#> [<https://perma.cc/8MCH-NZSJ>].

## II. THE ROBOT TAX

A. *Taxation as a Means to Address Unemployment Due to Automation*

A categorical ban on automation should not be implemented because technology carries benefits. Innovations have improved working conditions<sup>26</sup> and reduced job-related deaths.<sup>27</sup> Hence, our society should not aim to directly disallow innovations, but instead, implement them by taking into account their consequences. An early and indirect approach through taxation could properly ameliorate the impact of job displacement by automation.

Indeed, a major tax reform may soon be needed to address the realities of a future where automation is the norm.<sup>28</sup> First, if not changed, present means of taxation will produce a revenue shortage. Federal revenues in the United States largely depend on labor,<sup>29</sup> with estimates showing that up to 80% of revenues are derived from it.<sup>30</sup> Taxpayers pay taxes from their income based on their salary.<sup>31</sup> But robots are not taxpayers.<sup>32</sup> The Tax Code defines a taxpayer as “an individual, a trust, estate, partnership, association, company or corporation.”<sup>33</sup> Consequently, since automation may displace up to one-third of workers,<sup>34</sup> this high unemployment rate will reduce federal revenue.

On the other hand, our tax system imposes a lower tax on capital income.<sup>35</sup> “Taxing capital income’ refers to the taxation of returns from investment[s]” in capital assets.<sup>36</sup> A capital asset includes property used in the business that is not sold to customers.<sup>37</sup> The rationale for the lower tax is that it promotes economic growth by incentivizing taxpayers to acquire production tools.<sup>38</sup> When it comes to automation, automated machines are considered a capital investment,<sup>39</sup> which means that employers investing in automation enjoy lower taxation.<sup>40</sup> However,

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26. *How Technology Has Changed Health and Safety in the Workplace*, CORP. VISION (June 27, 2018), <https://www.corporatevision-news.com/2018-how-technology-has-changed-health-and-safety-in-the-workplace/> [<https://perma.cc/EEZ9-X835>].

27. See, e.g., *Achievements in Public Health, 1900-1999: Improvements in Workplace Safety -- United States, 1900-1999*, CTRS. FOR DISEASE CONTROL & PREVENTION (June 11, 1999), <https://www.cdc.gov/mmwr/preview/mmwrhtml/mm4822a1.htm> [<https://perma.cc/N9EV-AD4F>].

28. See generally Roberta F. Mann, *I Robot: U Tax? Considering the Tax Policy Implications of Automation*, 64 MCGILL L.J. 763 (2019).

29. Over half of tax revenue collected each year comes from income and payroll taxes on labor. See Jay A. Soled & Kathleen DeLaney Thomas, *Automation and the Income Tax*, 10 COLUM. J. TAX L. 1, 20 (2018).

30. See *id.* at 18–19.

31. See I.R.C. § 1.

32 See I.R.C. § 7701(a)(1), (14).

33. *Id.*

34. See MANYIKA ET AL., *supra* note 13, at 103.

35. Compare I.R.C. § 1(a)(2) (tax rate for married individuals up to 39.6%), with I.R.C. § 1(h)(1) (highest tax rate on capital gains 28%).

36. See Mann, *supra* note 28, at 778.

37. See I.R.C. § 1221(a)(1); see also Alicia Tuovila, *Capital Asset*, INVESTOPEDIA (Nov. 12, 2020), <https://www.investopedia.com/terms/c/capitalasset.asp> [<https://perma.cc/8PJ7-VDDL>].

38. See Soled & Thomas, *supra* note 29, at 15–16.

39. See Mann, *supra* note 28, at 781.

40. Robert Kovacev, *A Taxing Dilemma: Robot Taxes and the Challenges of Effective Taxation of AI, Automation and Robotics in the Fourth Industrial Revolution*, 16 OHIO ST. TECH. L.J. 182, 185–87 (2020).

as automation displaces human workers, rather than merely being tools of production, capital becomes labor—labor produced by machines and taxed at a lower rate.<sup>41</sup> Tax policies may no longer be held in the future.

Another reason why a tax change is needed is that current tax laws actually encourage automation employment. Employers can reduce their tax liability by investing in automation in three ways. First is the cost incurred in payroll taxes, widely cited as “the biggest deterrent to hiring.”<sup>42</sup> Specifically, employers pay 7.65% of the worker’s salary as payroll taxes for every worker employed.<sup>43</sup> But because machines are not taxpayers,<sup>44</sup> employers can avoid paying payroll taxes by simply utilizing robots.<sup>45</sup> Second, businesses can deduct from their taxable income expenses paid on machinery if it is subject to “depreciation.”<sup>46</sup> Property is depreciable if subject to “exhaustion, wear and tear, and obsolescence.”<sup>47</sup> Therefore, things like computers or other machinery are depreciable property because they will eventually become obsolete.<sup>48</sup> And third, employers are allowed to deduct from their taxable income “all the ordinary and necessary expenses . . . incurred” in their businesses.<sup>49</sup> So as long as the expenses are reasonable, amounts invested in automation will not be subject to taxation.<sup>50</sup>

With all the current tax benefits, many conclude that most businesses invest in automation “simply because the [T]ax [C]ode is urging them to do so.”<sup>51</sup> In fact, big companies like Walmart and Amazon take advantage of current tax provisions by employing robots.<sup>52</sup> In a future where automation employment is the norm, current taxation means may provide inadequate funds and further increase unemployment.

#### B. *The Robot Tax as a Means to Address Unemployment Due to Automation*

Premised on the reasons explained above, prominent figures and politicians have called for a tax change. They argue that if robots displace human workers,

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41. See Mann, *supra* note 28, at 802–03.

42. Jose Pagliery, *You Make \$70k but Cost Your Boss \$88k*, CNN: BUS. (Feb. 28, 2013, 9:16 AM), <https://money.cnn.com/2013/02/28/smallbusiness/salary-benefits/index.html> [<https://perma.cc/TUM5-A37C>].

43. See I.R.C. § 3101(a), (b); see also Soled & Thomas, *supra* note 29, at 8.

44. See I.R.C. § 7701(a)(1), (14).

45. See Orly Mazur, *Taxing the Robots*, 46 PEPP. L. REV. 277, 306 (2019).

46. I.R.C. § 168.

47. See I.R.C. § 167(c).

48. Any computer is considered a “qualified technological equipment.” I.R.C. § 168(i)(2). Any qualified technological equipment has a recovery period of “5 years.” I.R.C. § 168(g)(3)(C). If a property has a “recovery period of 20 years or less,” a deduction for the entire amount is allowed. See I.R.C. § 168(k).

49. I.R.C. § 162(a).

50. See *id.*; see also Soled & Thomas, *supra* note 29, at 9–10.

51. Eduardo Porter, *Don’t Fight the Robots. Tax Them.*, N.Y. TIMES (Feb. 23, 2019), <https://www.nytimes.com/2019/02/23/sunday-review/tax-artificial-intelligence.html> [<https://perma.cc/AVS5-G4N8>].

52. Nick Wingfield, *As Amazon Pushes Forward with Robots, Workers Find New Roles*, N.Y. TIMES (Sept. 10, 2017), <https://www.nytimes.com/2017/09/10/technology/amazon-robots-workers.html> [<https://perma.cc/XJ4D-R589>]; Chris Westfall, *Walmart Announces a New Addition to Its Workforce: Thousands of Robots*, FORBES (Apr. 9, 2019, 5:25 PM), <https://www.forbes.com/sites/chriswestfall/2019/04/09/walmart-announces-new-workforce-addition-robots-robotics/#2f5eff1816ff> [<https://perma.cc/VZ4Z-2NHE>].

then the robots should be taxed.<sup>53</sup> The idea of taxing robots has likewise prompted robust academic discussions.<sup>54</sup> Most tax proposals primarily focus on addressing various policy considerations.<sup>55</sup> Consequently, a robot tax is not a single approach, but many proposals with each aimed at addressing different goals and policies.<sup>56</sup>

Relevant to this Paper is the issue concerning the high unemployment rate created by automation. One tax proposal primarily aimed at addressing this issue calls for targeted taxation.<sup>57</sup> Under this version of robot taxation (hereinafter “Robot Tax”), a special tax will be imposed on companies that use automated machines.<sup>58</sup> This tax will be based on each employed robot that replaced a human worker.<sup>59</sup> Because payroll tax savings is the biggest incentive to use machines, the tax’s liability should impose a similar liability.<sup>60</sup> Hence, the Robot Tax would be equal to: (number of robots employed) X (average payroll tax paid by the employer per employee).

In theory, the Robot Tax creates disincentives towards automation employment by offsetting current tax benefits when employing automation.<sup>61</sup> Relative to employers, this tax would impose a payroll-tax-like liability when utilizing robots. Through the Robot Tax, employment taxes would have been the same for employers had they employed a human worker instead.<sup>62</sup> Presumably, then, human employees will benefit from employers’ neutral hiring decisions, at least when it comes to tax-related expenditures.<sup>63</sup>

### III. ANALYZING THE ROBOT TAX

The main reason for enacting the Robot Tax is to address the unemployment created by automation.<sup>64</sup> In other words, the Robot Tax’s success depends on whether it could promote human employment and be enforceable. However,

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53. See Kovacev, *supra* note 40, at 183.

54. See generally Ryan Abbott & Bret Bogenschneider, *Should Robots Pay Taxes? Tax Policy in the Age of Automation*, 12 HARV. L. & POL’Y REV. 145 (2018); Estlund, *supra* note 19; Mazur, *supra* note 45; Soled & Thomas, *supra* note 29.

55. See Kovacev, *supra* note 40, at 183–84.

56. For example, automation employment creates two issues: revenue shortage and unemployment. See *supra* Section II.A. Therefore, a tax proposal aimed primarily at addressing the revenue shortage may differ from another aimed at addressing unemployment.

57. See, e.g., Mazur, *supra* note 45, at 296.

58. Rather than analyzing robot taxation in generalities, this Paper analyses one specific proposal cited in Mazur, *supra* note 45, at 296. By doing so, this Paper provides more specific arguments for and against the imposition of a robot tax, a tax which applicability is based on robots.

59. See Mazur, *supra* note 45, at 296.

60. See *id.* at 280. Other similar proposals argued that the tax should be based on the income the robot generates to the employer. See *id.* However, this Paper analyzes the payroll-like alternative because it is difficult to accurately ascertain the income a robot would create. See Debra Salbador, *Taxation and Automation in the Age of Pandemic*, TAX NOTES (Apr. 27, 2020).

61. See Mazur, *supra* note 45, at 306.

62. See *id.* at 280.

63. See *id.*

64. See *supra* Section II.B.

upon a closer inspection, it appears the Robot Tax may promote neither policy. Each is discussed in part below.

A. *Theoretical Flaws: The Robot Tax May Not Sufficiently Promote Human Employment*

One weakness of the Robot Tax is that it may not provide enough incentives to employ humans. As it currently stands, the Robot Tax presumably creates some deterrence against using robots by making employers' hiring decisions neutral.<sup>65</sup> However, merely leveling the playing field as to payroll tax expenses does not create true economic neutrality.<sup>66</sup>

The first reason is that employers would still enjoy other tax benefits. Depreciation deductions and business expense deductions will offer tax savings when utilizing automated robots.<sup>67</sup> Relatedly, it is difficult to measure the total tax savings in the long term because tax laws change frequently.<sup>68</sup> So even if one increases the Robot Tax's effective liability as a means to account for depreciation and deduction savings, this may only be momentary.

The second reason is that the economic benefits of employing automation extend beyond mere tax savings. Mainly, employers will still possess the inherent profits advantages offered by employing automation.<sup>69</sup> It is difficult, and even impossible, to quantify automation's profits because theoretical considerations arise when considering the excess gains that robots create over humans. For example, the increase in automation productivity is likely different among machines and across job sectors.<sup>70</sup> The productivity and profits do not increase proportionally for each robot added.<sup>71</sup> And rather than replacing humans entirely, robots sometimes either complement the work with employees or replace them in part.<sup>72</sup> Consequently, a single and accurate value cannot be set on the Robot Tax to impose an equal liability for employers across the country to have neutral hiring decisions.

Because the Robot Tax tries to discourage a behavior—automation employment<sup>73</sup>—its effectiveness can be analyzed and analogized as a Pigovian tax. A Pigovian Tax creates an economic deterrence to reduce a behavior that harms society.<sup>74</sup> To effectively implement a Pigovian tax, the economic deterrence needs to: (1) locate the specific harmful behavior so that the tax will not be

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65. See Mazur, *supra* note 45, at 280.

66. See *infra* notes 67–93 and accompanying text.

67. Employers can now deduct the entire cost of tangible depreciable machines within a single year. See, e.g., Soled & Thomas, *supra* note 29, at 10.

68 See Andrew Beattie, *A Concise History of Changes in U.S. Tax Law*, INVESTOPEDIA (May 24, 2022), <https://www.investopedia.com/articles/tax/10/concise-history-tax-changes.asp> [https://perma.cc/MSA9-GRQR].

69. See *supra* Part I.

70. See generally INT'L FED'N ROBOTICS, THE IMPACT OF ROBOTS ON PRODUCTIVITY, EMPLOYMENT AND JOBS (2017).

71. *Id.*

72. See Salvador, *supra* note 60.

73. See Mazur, *supra* note 45, at 306.

74. See Tejvan Pettinger, *Pigovian Tax*, ECON. HELP, <https://www.economicshelp.org/blog/glossary/pigovian-tax/> (last visited June 5, 2022) [https://perma.cc/NBT5-T8M9].

imposed on only a few bad actors;<sup>75</sup> (2) differentiate and calculate the particular harm created by each actor;<sup>76</sup> (3) estimate the harm before it happens;<sup>77</sup> and (4) ensure that the harm created by different actors is narrow in spectrum.<sup>78</sup> These principles ultimately determine the effectiveness of reducing the harmful behavior.<sup>79</sup>

The imposition of pollution taxes, for instance, is an effective policy at decreasing carbon emissions.<sup>80</sup> First, carbon emissions are identifiable and measurable through the amount of carbon weight emitted per unit of consumed energy.<sup>81</sup> Second, based on the amounts of pollutants discharged and climate change research, the harm created by pollution can be estimated beforehand.<sup>82</sup> Lastly, the scope of harmful emissions by companies tends to be similar.<sup>83</sup> Data shows that imposing a CO<sub>2</sub> emission tax is correlated with a decrease in CO<sub>2</sub> emissions.<sup>84</sup>

On the other hand, the Pigovian taxes imposed on alcohol consumption are less effective.<sup>85</sup> While alcohol's primary harm is drunk-driving accidents,<sup>86</sup> the overall harmful effects of alcohol are hard to predict.<sup>87</sup> Alcohol consumption and drinkers' behavior vary according to each user, so the harm cannot be measured before consumption.<sup>88</sup> And since few drinkers display aggressive behavior or drive while intoxicated,<sup>89</sup> the harm created by each user is broad in spectrum. Studies show a scientifically inconclusive correlation between alcohol taxes and a reduction in alcohol drinking as to confidently demonstrate that taxing alcohol leads to less consumption.<sup>90</sup>

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75. Victor Fleischer, *Curb Your Enthusiasm for Pigovian Taxes*, 68 VAND. L. REV. 1673, 1690–91 (2015).

76. *Id.*

77. *Id.* at 1693–94.

78. *See id.* at 1697–1702.

79. *See generally id.*

80. *See generally* Christopher R. Knittel & Ryan Sandler, *The Welfare Impact of Indirect Pigovian Taxation: Evidence from Transportation*, (MIT Ctr. for Energy & Env't Pol'y Rsch., Working Paper No. 2013-011, 2013), <https://cepr.mit.edu/wp-content/uploads/2021/09/2013-011.pdf> [<https://perma.cc/KW35-QL4N>].

81. *See* Fleischer, *supra* note 75, at 1691–92. For more about carbon measurement, see *U.S. Energy-Related Carbon Dioxide Emissions, 2019*, U.S. ENERGY INFO. ADMIN., (Sept. 30, 2020), <https://www.eia.gov/environment/emissions/carbon/archive/2019/> [<https://perma.cc/FTT6-UAHT>].

82. *See* Fleischer, *supra* note 75, at 1694; *see also* FRANK ACKERMAN & ELIZABETH A. STANTON, NAT. RES. DEF. COUNCIL, *THE COST OF CLIMATE CHANGE: WHAT WE'LL PAY IF GLOBAL WARMING CONTINUES UNCHECKED* (2008).

83. *See* Fleischer, *supra* note 75, at 1697.

84. *See* Patrik Sundqvist, *Do Energy Taxes Decrease Carbon Dioxide Emissions?* (2007) (Master thesis, Uppsala University); *see also* Emma Newburger, *A Carbon Tax Is 'Single Most Powerful' Way to Combat Climate Change, IMF Says*, CNBC, (Oct. 10, 2019, 10:30 AM), <https://www.cnbc.com/2019/10/10/carbon-tax-most-powerful-way-to-combat-climate-change-imf.html> [<https://perma.cc/JVN2-ULM9>].

85. The main reason is that a higher price on alcohol does not bear a close relationship to the negative externalities generally associated with alcohol consumption. *See* Fleischer, *supra* note 75, at 1706–07.

86. *Id.*

87. *See id.*

88. *Id.*

89. *Id.*

90. The data shows different results according to the type of alcohol. For example, studies show an insignificant decreased beer consumption but an increase in wine and spirits consumption. SEC'Y OF HEALTH & HUM.

The correlation between the Robot Tax and automation employment is like alcohol taxes and alcohol consumption. First, while the specific harmful behavior is easily located, *i.e.*, displacing human employees for robots, calculating the harmful effects of automation are hard to predict.<sup>91</sup> Mainly, automation's long-term effects continue to be debated.<sup>92</sup> Second, the scope of the harm created by employers using automation is likely to be broad in spectrum. Big companies employ robots in a higher proportion than smaller companies.<sup>93</sup> Therefore, a Pigovian tax on automation employment will likely yield an inconclusive correlation between its imposition and the harm it seeks to discourage. It may not provide a sufficient human employment incentive.

### B. *Practical Flaws: The Robot Tax Is Unworkable*

Even if the Robot Tax could impose an adequate economic deterrence to create a neutral hiring decision, practical considerations remain. Below are two concerns that need to be solved before any tax on robots can be effectively imposed and enforced.

#### 1. *Who Will Pay the Robot Tax?*

This answer matters. As with any financial liability, those paying for the Robot Tax will face the biggest deterrence towards the behavior that the tax seeks to disincentivize.<sup>94</sup> Hence, those paying the tax should be the players who contribute the most to the problem—human unemployment.

Most proposals argue that employers should pay for the Robot Tax because they are getting the benefits of employing robots.<sup>95</sup> But if this conclusion is based on who is deriving the benefits from automation, should not this likewise hold the manufacturers of the robots liable? After all, most companies are not in the business of producing and utilizing their equipment.<sup>96</sup> In the future, most companies employing robots will likely buy them from other companies.<sup>97</sup> By creating and selling these machines, these robot-making companies would also be contributing to labor displacement and getting economic benefits. Arguably, the manufacturers could be as responsible as the employers for the high unemployment rate.

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SERVS., U.S. DEP'T OF HEALTH & HUM. SERVS., 10TH SPECIAL REPORT TO THE U.S. CONGRESS ON ALCOHOL AND HEALTH 341 (2020).

91. See sources cited *supra* note 19.

92. See sources cited *supra* note 19.

93. See sources cited *supra* note 52.

94. See Pettinger, *supra* note 74.

95. See generally Abbott & Bogenschneider, *supra* note 54; Estlund, *supra* note 19; Mazur, *supra* note 45.

96. See Martin Luenendonk, *Step-by-Step Guide to Make or Buy Decision*, CLEVERISM (Sept. 19, 2019), <https://www.cleverism.com/make-or-buy-decision-step-by-step-guide/> [<https://perma.cc/WHC4-CPKH>].

97. See Matthew Greenwood, *Manufacturing in America: Where Are the Robots?*, ENG'G (Dec. 30, 2020), <https://www.engineering.com/story/manufacturing-in-america-where-are-the-robots> [<https://perma.cc/75ND-UUMV>].

Moreover, arguing that only the employer (or the manufacturer) should pay for the Robot Tax overlooks the business world's reality. Nothing would prevent an employer from shifting the cost of the tax.<sup>98</sup> In fact, the cost of taxes directly borne by most businesses is eventually passed to individuals in the form of higher prices.<sup>99</sup> Employers could offset the Robot Tax's liability by simply increasing the prices of their goods or services. If so, it will be us—the consumers—who will pay for the Robot Tax.<sup>100</sup> Ultimately, if those creating the harm do not incur the Robot Tax cost, its economic disincentives will not work.<sup>101</sup>

## 2. *What Is a Robot?*

As with any tax, the statutory language is of vital importance to the Robot Tax feasibility.<sup>102</sup> All taxable income is based on the product of the tax rate times the tax base.<sup>103</sup> The tax base is the numerical “representation of that which is to be taxed.”<sup>104</sup> For the Robot Tax, the tax base is the “number of robots employed.”<sup>105</sup> Accordingly, the Code must adequately describe what these “robots” are.

But writing an accurate and not overinclusive definition is problematic. To illustrate, the Merriam-Webster dictionary defines “robot” as “a machine that resembles a living creature in being capable of moving independently.”<sup>106</sup> However, such definition fails to describe the diverse physical characteristic of automated technologies.<sup>107</sup> It describes the human-like robots used in hotels.<sup>108</sup> Now consider advanced AI software. It does not “resemble[] a living creature,” is not “capable of moving independently,”<sup>109</sup> and yet is capable of doing many job tasks.

98. See Kovacev, *supra* note 40, at 207 (“[T]he result of the [robot] tax, had it been enacted, would have been to . . . rais[e] prices on consumers . . .”). A similar rationale may apply to the manufacturers: there will be nothing to prevent them from raising the price of their machines to offset the cost of the tax.

99. See, e.g., JOEL SLEMROD & JON BAKIJA, *TAXING OURSELVES: A CITIZEN'S GUIDE TO THE DEBATE OVER TAXES* 235–36 (5th ed. 2017) (discussing the cost that employers incurred for complying with complex tax laws).

100. Similarly, if the employer pays more for the robots (due to the higher price from the manufacturer), the employer will shift the higher cost to the customers.

101. See Pettinger, *supra* note 74.

102. See Kovacev, *supra* note 40, at 192–95.

103. See Salvador, *supra* note 60.

104. *Id.*

105. See *supra* Section II.B.

106. *Robot*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/robot> (last visited June 5, 2022) [<https://perma.cc/4LWA-ZHS3>].

107. See, e.g., Clinton Nguyen, *Restaurants in China Are Replacing Waiters with Robots*, BUS. INSIDER (July 26, 2016, 1:35 PM), <https://www.businessinsider.com/chinese-restaurant-robot-waiters-2016-7> (robots resembling human characteristics are replacing waiters in China) [<https://perma.cc/58YU-ENRX>]; Cory Scarola, *Six Jobs Automation Will Eliminate*, INVERSE (Mar. 6, 2017, 6:31 AM), <https://www.inverse.com/article/26965-what-types-of-automation-lead-to-job-loss> (assembly line robots that do not resemble human characteristics had decreased the number of factory jobs) [<https://perma.cc/5527-P33D>]; *IBM Watson Is AI for Business.*, *supra* note 8 (AI lacks tangible properties).

108. Tech Insider, *Japanese Hotel Run Almost Entirely by Robots*, YOUTUBE (Sept. 16, 2017), <https://www.youtube.com/watch?v=xmt6OCBeS94> [<https://perma.cc/P9XX-9SFM>].

109. See, e.g., *IBM Watson Is AI for Business.*, *supra* note 8.

Another issue involved when defining “robot” is determining what type of automated machine should be taxed. For example, fast-food restaurants are now equipped with several self-service kiosks, effectively reducing the number of cashiers.<sup>110</sup> But if implemented, is the Robot Tax going to apply retroactively and impose liabilities to employers who were already utilizing automation? And if so, how far back in time will this tax go? Should the Robot Tax apply to factory-line robots that took humans’ jobs decades ago?<sup>111</sup> Moreover, people do not perceive all working machines negatively.<sup>112</sup> Automation tends to increase workplace safety, such as those used in mines,<sup>113</sup> and yet society seems unopposed to their use.

A real-life example on this issue occurred in 2017, when the European Union proposed a tax on robots as an effort to regulate the rise of automation in the workforce.<sup>114</sup> The European legislators attempted to get away with the definitional problem by broadly describing robots.<sup>115</sup> The proposal defined “robot” as having these traits: “(i) acquires ‘autonomy through sensors and/or by exchanging data with its environment’ and the trading and analyzing of the data, (ii) is self-learning through experience and interaction, (iii) has a physical support, and (iv) adapts its behaviors and actions to its environment.”<sup>116</sup> However, the European tax proposal encountered severe opposition, as even the legislators recognized that there is not a commonly accepted definition of robots.<sup>117</sup> The negative momentum resulted in the European tax being firmly rejected.<sup>118</sup>

A sufficiently clear definition that describes a “robot” is important. Clear statutory language is not only constitutionally required<sup>119</sup> but also promotes tax administration.<sup>120</sup> Indeed, the Robot Tax benefits highly depend on its administration; for neither revenue is collected nor policies promoted if the tax is not adequately enforced. Thus, until there is a broad consensus on what a robot is, *i.e.*, what automated machines ought to be taxed, the Robot Tax’s feasibility appears to remain unworkable.

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110. See Rensi, *supra* note 18.

111. See, e.g., Scarola, *supra* note 107.

112. See, e.g., Glyn Jones, *Tech Has Changed the Emphasis from Safety to Health in Mining and Manufacturing*, INFO. AGE (May 10, 2018), <https://www.information-age.com/tech-safety-health-mining-manufacturing-123471874/> [<https://perma.cc/W687-926Z>]; Johnson, *supra* note 11 (“[M]ining was a dangerous career for many people, but now there is a move to let machines handle many of the worst parts while humans work in the office.”); Abbott & Bogenschneider, *supra* note 54, at 147 (“Automation . . . will . . . improve safety and lead to new scientific breakthroughs.”).

113. Jones, *supra* note 112.

114. Georgina Prodhon, *European Parliament Calls for Robot Law, Rejects Robot Tax*, REUTERS (Feb. 16, 2017, 1:03 PM), <https://www.reuters.com/article/us-europe-robots-lawmaking/european-parliament-calls-for-robot-law-rejects-robot-tax-idUSKBN15V2KM> [<https://perma.cc/CW2H-JEB2>].

115. See Mazur, *supra* note 45, at 298.

116. See *id.*

117. “Yet defining robots is no easy task in the absence of any real consensus within global scientific community.” European Civil Law Rules in Robotics: Study of the Legal Affairs Committee, PARL. EUR. DOC. PE 571.379 8 (2016).

118. See *id.*; Prodhon, *supra* note 114.

119. *Hoffman Estates v. Flipside, Hoffman Estates*, 455 U.S. 489, 498 (1982) (“[E]conomic regulation[s] are] subject to a less strict vagueness test . . .”).

120. See DAVID BRUNORI, *STATE TAX POLICY: A PRIMER* 19 (4th ed. 2016).

### C. South Korea as Case Example Against the Robot Tax

In 2017, South Korea introduced the first robot tax.<sup>121</sup> The government enacted the law to curb the “expected human impact of automation.”<sup>122</sup> There is some anecdotal evidence showing that the tax slowed automation investments.<sup>123</sup> However, citing the Korean tax as an analogy to support and pass a similar statute here in the United States may be inappropriate for two reasons.

The first reason is that the Korean tax lacks the enforceability issues involved in the Robot Tax.<sup>124</sup> Showing how the Korean government avoided the definitional problem requires understanding its tax system and what its alleged robot tax really is. The Korean tax system is designed to promote economic growth.<sup>125</sup> Large tax credits are given to companies that invest in technologies.<sup>126</sup> Article 24 of the Restriction of Special Taxation Act (“RSTA”) provides tax credits for investments in “Productivity Increase Facilities.”<sup>127</sup> Qualifying investments include: (1) any facilities for “improvement and automation of processes” and (2) equipment that “belongs to high-technology equipment.”<sup>128</sup> Credits under RSTA used to be were equal to 3% (or 7% for smaller companies) of what a company paid for the qualified machinery.<sup>129</sup> Through its so-called robot tax, the Korean government simply reduced this automation investment benefit as tax benefit was reduced to 1% (or 5% for smaller companies) of the cost paid for the machinery.<sup>130</sup> The Korean tax was simply a reduction of an already existing benefit.

Although to a lesser degree, companies investing in automation nonetheless still received tax benefits by investing in automation. This meant that precisely defining “automation of process” or “high-technology equipment” was irrelevant.<sup>131</sup> Korean taxpayers had monetary incentives to comply with the RSTA, for they would receive tax savings by its applicability.<sup>132</sup> Similarly, because the RSTA promoted economic growth, the Korean government had an incentive for

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121. Yoon Sung-Won, *Korea Takes First Step to Introduce ‘Robot Tax’*, KOR. TIMES (Aug. 7, 2017, 8:47 PM), [http://www.koreatimes.co.kr/www/news/tech/2017/08/133\\_234312.html](http://www.koreatimes.co.kr/www/news/tech/2017/08/133_234312.html) [<https://perma.cc/84VJ-RFGK>].

122. Brandon Vigliarolo, *South Korea ‘Robot Tax’ Is No Tax at All; It’s a Warning of Looming Automation Crisis*, TECHREPUBLIC (Aug. 11, 2017, 7:21 AM), <https://www.techrepublic.com/article/south-korea-robot-tax-is-no-tax-at-all-its-a-warning-of-looming-automation-crisis/> [<https://perma.cc/338D-AKUR>].

123. See Kovacev, *supra* note 40, at 204.

124. See *supra* Subection III.B.2.

125. MINISTRY ECON. & FIN., KOREAN TAXATION, at preface (2020).

126. See Restriction of Special Taxation Act, art. 24 (S. Kor.), translated in Korea Legislation Research Institute’s online database, [https://elaw.klri.re.kr/kor\\_service/lawView.do?hseq=27406&lang=ENG](https://elaw.klri.re.kr/kor_service/lawView.do?hseq=27406&lang=ENG) (last visited June 6, 2022) [<https://perma.cc/GR3A-V336>].

127. See *id.*

128. See *id.*

129. See Greg Nichols, *South Korea Mulling World’s First Robot Tax*, ZD NET (Aug. 9, 2017), <https://www.zdnet.com/article/south-korea-mulling-worlds-first-robot-tax/> [<https://perma.cc/X3F7-2BFU>]; Sung-Won, *supra* note 121.

130. As of 2020, the Korean amendment is still in force. See MINISTRY ECON. & FIN., *supra* note 125, at 223–24.

131. See *infra* notes 132–33 and accompanying text.

132. Tax credits are a significant economic incentive to promote a behavior. See Fleischer, *supra* note 75, at 1688.

its broad application.<sup>133</sup> Consequently, the government's and taxpayer's interests were aligned, making it unlikely that differing interpretations will result.

Economic considerations are the second reason why it may be inappropriate to cite the Korean tax to support the Robot Tax. The economies of South Korea and the United States are different, and thus, their tax policies are too.<sup>134</sup> As noted, Korea decreased the RSTA's tax credits to "help slow down automation in industries."<sup>135</sup> But South Korea is among the "most robotized countr[ies] in the world."<sup>136</sup> The country has a record of 710 robots per 10,000 employees while only having a relatively small population of 50 million citizens.<sup>137</sup> Hence, the tax policy resulted from a need to address the revenues lost by automation—unemployment on a "big enough scale to eat into South Korea's tax revenue."<sup>138</sup>

The United States, however, has a population of over 300 million<sup>139</sup> and possesses a more diverse market.<sup>140</sup> Significant gross outputs are generated every year in various job sectors, mainly from mining, construction, wholesale trades, and professional services.<sup>141</sup> Present data suggest that automation is not likely to overtake significant working hours in those sectors.<sup>142</sup> In contrast, the leading employment sectors that automation will overtake are those where low-skill workers are employed.<sup>143</sup> Taxpayers who make less than \$40,000 a year only contribute 3.7% to the total income tax revenue.<sup>144</sup> Consequently, the revenue lost from job automation in the United States is not "big enough" in scale as the case in South Korea.<sup>145</sup> The different economies and markets where the revenue is taxed in both countries may not support applying the same tax policies.

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133. See MINISTRY ECON. & FIN., *supra* note 125, at 219.

134. See *Country Comparison United States vs South Korea*, COUNTRYECONOMY, <https://countryeconomy.com/countries/compare/usa/south-korea> (last visited June 5, 2022) [<https://perma.cc/D5DM-DGDQ>].

135. See Sung-Won, *supra* note 121.

136. See Porter, *supra* note 51.

137. Erin Winick, *These Charts Show How Asia Is Dominating Industrial-Robot Adoption*, MIT TECH. REV. (Nov. 27, 2018), <https://www.technologyreview.com/2018/11/27/66355/these-charts-show-how-asia-is-dominating-industrial-robot-adoption/> [<https://perma.cc/R44S-GREA>]; *Population, Total - Korea, Rep.*, WORLD BANK, <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=KR> (last visited June 5, 2022) [<https://perma.cc/D6PN-6TEL>].

138. See Vigliarolo, *supra* note 122.

139. *U.S. and World Population Clock*, U.S. CENSUS BUREAU, <https://www.census.gov/popclock/> (last visited June 6, 2022) [<https://perma.cc/CL3F-2F3E>].

140. BUREAU ECON. ANALYSIS, GROSS DOMESTIC PRODUCT BY INDUSTRY, THIRD QUARTER 2019 11 tbl.6 (2020).

141. See *id.*

142. The demand for human labor is likely to increase in the construction sector and jobs like healthcare providers and engineers. See MANYIKA ET AL., *supra* note 13, at 102.

143. See *id.*

144. See Robert Bellafiore, *Summary of the Latest Federal Income Tax Data, 2018 Update*, TAX FOUND. (Nov. 13, 2018), <https://taxfoundation.org/summary-latest-federal-income-tax-data-2018-update/> [<https://perma.cc/C623-43MZ>].

145. See Vigliarolo, *supra* note 122.

## IV. A DIFFERENT PERSPECTIVE, AN ADEQUATE SOLUTION

The arguments against the Robot Tax point to its form,<sup>146</sup> not to the policies it seeks to promote. The issue of mass unemployment due to automation is too much of an issue not to be addressed. So, while the solution to the problem is clear—reducing human unemployment—accomplishing it through the Robot Tax appears complicated.

But that does not mean that we cannot achieve the solution through taxation. The Robot Tax is premised on reducing unemployment by disincentivizing automation employment (in the form of an economic deterrence).<sup>147</sup> However, by changing our perspective on the issue, *i.e.*, how to combat unemployment, we may find a better tax policy. Perhaps, we should instead aim to reduce unemployment by promoting the acquisition of advanced skills among displaced employees.

As shown by history, the demand for working skills changes usually after implementing significant innovations.<sup>148</sup> As automation becomes prevalent, it will undoubtedly overtake many jobs, but it may also create a new type of working demand.<sup>149</sup> So instead of looking at automation as eliminating some jobs, we should look at it as opening new jobs demanding different skills. Therefore, the government should address the problem is by promoting programs that teach and train displaced employees the needed skills for their reintroduction into the workplace.

This alternative could be done through the Tax Code. For instance, the government can provide tax benefits to employers who retain and retrain their employees whose working skills were taken by automation. Analogous tax credits currently exist, for example, the Work Opportunity Tax Credit (“WOTC”).<sup>150</sup> The WOTC gives generous tax credits to employers if they hire an individual from a particular “Targeted Group.”<sup>151</sup> Individuals within the “Targeted Group” include people who are at a disadvantage when it comes to employment, such as ex-felons.<sup>152</sup> A similar rationale may soon apply for low-skill workers because they will be at a disadvantage by the implementation of automated technologies.<sup>153</sup>

Through simple amendments to the WOTC, which add *low-skill workers* within the “Targeted Group,” the government will adequately promote human employment. Certainly, an adequate definition of “low-skill worker” is less complicated than “robot.” The main reason is that research is more concrete on the

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146. See *supra* Section III.B.

147. See *supra* Part II.

148. See, e.g., *Effects of Agriculture on the Industrial Revolution*, *supra* note 5.

149. Automation could increase the working demand in construction, healthcare, and engineering. See MANYIKA ET AL., *supra* note 13, at 102.

150. I.R.C. § 51.

151. *Id.*

152. See *id.*; see also *Work Opportunity Tax Credit*, INTERNAL REVENUE SERV. (Nov. 30, 2021), <https://www.irs.gov/businesses/small-businesses-self-employed/work-opportunity-tax-credit> [<https://perma.cc/SRX9-CVS7>].

153. See MANYIKA ET AL., *supra* note 13, at 102–03.

jobs that automation will take, *i.e.*, low-skill workers,<sup>154</sup> than automation's future qualities and characteristics. The Code could define "low-skill worker" by utilizing the research description of what job positions<sup>155</sup> or job duties<sup>156</sup> are more likely to be overtaken by automation.

Adding to it, mutual interests make it unlikely that different interpretations of "low-skill worker" will ensue. The government would want this credit to apply broadly as its interests include promoting human employment. Businesses will similarly have incentives for compliance as they would want to receive the economic tax benefit.<sup>157</sup> Hence, the government's and taxpayers' incentives are aligned in that each wants the credit to apply. As the Korean "robot tax" shows, similar interests lead to higher compliance. By taking this alternative, the Code will avoid the Robot Tax's definitional problem—its applicability will not depend on vague definitions.<sup>158</sup>

The cost of giving these credits can be funded from a variety of sources. The government can impose a higher corporate tax. Raising corporate taxes to fund these programs is justifiable, as it will target the players that are most likely to automate their workforce: big businesses.<sup>159</sup> In the private sector, most businesses are subject to corporate taxes<sup>160</sup> and employ most of the workforce.<sup>161</sup> What is more, the biggest—and richest—companies are more likely to invest in automation.<sup>162</sup> Multi-million-dollar companies like Amazon and Walmart now possess a high number of automated machines.<sup>163</sup> So this tax proposal would increase the taxes of the players who received the most benefits from society. And by doing so, not only will we promote human employment but also a fairer tax system.

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154. *See generally id.*

155. Research shows that the jobs most likely taken by automation include food preparation, agricultural, and financial workers. *See id.* at 102–03.

156. Research shows that the occupations' tasks with the highest risk of being automated include predictable physical activities and repetitive processing or data collection. *See id.*

157. Tax credits are among the most potent economic incentives used in the Code. *See* Fleischer, *supra* note 75, at 1688.

158. *See supra* Section III.B.2.

159. *See* Greenwood, *supra* note 97 ("Some big manufacturers may be pursuing lights-out factories and other measures to lower their labor costs—but they have the production scale and investment dollars to commit to those projects. . . . Small and medium-sized enterprises (SMEs) aren't making many investments in robotics. . . ."); *see also, e.g.*, Wingfield, *supra* note 52; Westfall, *supra* note 52.

160. For corporate taxes to be imposed on a company, it must be recognized as a "C Corporation." *See* I.R.C. § 1361. Most businesses in the U.S. are "C Corporations." *See* Julia Kagan, *C Corporation*, INVESTOPEDIA (July 4, 2021), <https://www.investopedia.com/terms/c/c-corporation.asp> [<https://perma.cc/Q9MK-9CWH>]; *see also* Scott Shane, *The Average S-Corp Owner Isn't Rich*, SMALL BUS. TRENDS (Jan. 20, 2016), <https://smallbiz-trends.com/2012/12/the-average-s-corp-owner-isnt-rich.html> [<https://perma.cc/ZT6P-8TLR>].

161. *See* Andrew Lundeen & Kyle Pomerleau, *Less than One Percent of Businesses Employ Half of the Private Sector Workforce*, TAX FOUND. (Nov. 26, 2014), <https://taxfoundation.org/less-one-percent-businesses-employ-half-private-sector-workforce/> [<https://perma.cc/L2C8-FZJZ>].

162. *See supra* Part I.

163. *See sources cited supra* note 52.

V. CONCLUSION

Automation may soon create serious unemployment and tax revenue shortage. Sometimes, complicated issues are better addressed with simple solutions. So instead of a direct and targeted tax on automation in the form of an economic disincentive, the Tax Code should instead incentivize human employment. Offering tax benefits to employers who retain and retrain their employees provides a simpler solution. Technology advances are inevitable, but society could advance as well. For this reason, the continuous training of our workforce is preferable.