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The Robots are Coming: Targets of Automation and its Effect on the Tax Economy

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THE ROBOTS ARE COMING: TARGETS OF AUTOMATION AND ITS EFFECT ON THE TAX ECONOMY

Michael C. Ihe[†]

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I. INTRODUCTION

Amid the global outbreak of the COVID-19 virus, a mayo clinic in Jacksonville, Florida delegated four autonomous, self-driving vehicles to aid in keeping its drivers and patients safe.¹ The self-driving vehicles are not driven conventionally by human workers and the work designated consists of delivering COVID-19 testing kits from the testing facility to the work lab.² In addition, these vehicles are able to

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1. Ashleigh Carter, *Self-Driving Cars Safely Deliver COVID-19 Testing Kits in Florida*, GROUP NINE: NOWTHIS (Apr. 9, 2020, 2:54 PM), <https://nowthisnews.com/future/self-driving-cars-safely-deliver-covid-19-testing-kits-in-florida>.

2. *Id.*

replace repetitive work functions while allowing workers more time to focus on other important tasks, like helping to slow down the spread of the COVID-19 virus.³ The autonomous vehicles are visible in the Jacksonville community and are programmed to avoid busy streets where pedestrians regularly walk.⁴ The Jacksonville mayo clinic is one of many businesses worldwide investing in automation to carry out basic work functions that were once completed by human tax-paying workers. Automation has many increasing benefits to various types of businesses, but at a cost to human workers and the tax economy, in which they are paying into. The future of automation is evolving and expanding throughout the world. The robots are indeed coming, but will Americans be ready?

A. *Automation: How Does It Work?*

Automation is the technique of making a system or process perform automatically.⁵ Through automation, machines are utilized to complete different functions without much human interaction, if any at all. Forms of automation range from electronic communications and manufacturing systems to robotics and adaptive software. Notably, artificial intelligence (“AI”) is a transformative force, within automation, that involves the study of ideas to bring into being “machines that respond to stimulation consistent with traditional responses from humans, given the human capacity for contemplation, judgment, and intention.”⁶ Utilizing automation has played a pivotal role in many of the advancements used in the work force today. Some of the more common benefits due to AI include increased efficiency and greater worker safety.⁷ Worker safety has and continues to be a prevalent factor when evaluating the use of automation in the workforce.⁸ Certain legislation, including the Occupational Health and Safety Act (“OSHA”), have been

3. *Id.*

4. *Id.*

5. Mikell P. Groover, *Automation*, ENCYCLOPEDIA BRITANNICA INC. (May 08, 2019), www.britannica.com/technology/automation.

6. Darrell M. West & John R. Allen, *How Artificial Intelligence is Transforming the World*, BROOKINGS INST. (Apr. 24, 2018), <https://www.brookings.edu/research/how-artificial-intelligence-is-transforming-the-world/>.

7. *OSHA alliance provides important workplace safety updates for technical guide assessing robot systems*, OSHA (Jan. 26, 2022), <https://www.osha.gov/news/newsreleases/trade/01262022> [hereinafter OSHA alliance]; Bryan Christiansen, *The Impact of Industrial Automation on Worker Safety*, AUTOMATION.COM (Sept. 20, 2021), <https://www.automation.com/en-us/articles/september-2021/impact-industrial-automation-worker-safety>

8. *See* Christiansen, *supra* note 7; *see also* OSHA alliance, *supra* note 7.

enacted to promote automation in increasing awareness of safer work environments.⁹ Fortunately, machines do not get sick and can perform under extreme conditions.

B. Risks of Displacing Human Workers & the Industries Most Affected

One of the principal disadvantages from automation, which this article focuses on, has been the impact and displacement of human, tax-paying, workers. Since the year 2000, in the manufacturing industry alone, more than 260,000 jobs are estimated to have been lost in the U.S. as a direct result of automation.¹⁰ According to an Oxford Economics report, there will be more than 1.5 million jobs lost in the U.S. and approximately 20 million lost jobs globally due to automation by 2030.¹¹ Therefore, corporations are willing to invest and displace human tax-paying workers in order to maximize on technological innovation and ultimately their profits.¹² Profits are an essential business objective for most types of business entities. The board of directors of for-profit corporations, for example, have a fiduciary duty to the corporation to act in the corporation's best interest which includes maximizing profits. Violating such a duty could leave the directors open to liabilities. As a result, corporate decisions are dictated by a target of obtaining the greatest amount in profits while using the least amount of corporate resources. Utilizing the foregoing advancements with automation has been to the detriment of human tax-paying workers.¹³

According to Forbes, the five industries that have been affected the most by automation are: (1) healthcare, (2) insurance, (3) market-

9. Christiansen, *supra* note 7; OSHA alliance, *supra* note 7.

10. *How Robots Change the World*, 2019 OXFORD ECON. 1, 21, https://cdn2.hubspot.net/hubfs/2240363/Report%20-%20How%20Robots%20Change%20the%20World.pdf?utm_medium=email&_hsenc=P2ANqtz--S_yv5LZTWzdC5IER_NtSl3PcknlmRKCRLWkiY7DXoc24tLeHNQmxbffluLCA4PrkWMen4_J_hWSH49WG3OQvHF61Jlg&_hsmi=74013545&utm_content=74013545&utm_source=hs_automation&hsCtaTracking=07b1855a-24f4-4b99-bcb8-b0d2a13b715e%7C53b7a48e-9591-4179-8eab-694443190b4f.

11. *Id.*

12. See Harry J. Holzer, Understanding the impact of automation on workers, jobs, and wages, BROOKINGS (Jan. 19, 2022), <https://www.brookings.edu/blog/up-front/2022/01/19/understanding-the-impact-of-automation-on-workers-jobs-and-wages/> (“In general, automation also shifts compensation from workers to business owners, who enjoy higher profits with less need for labor.”).

13. *infra* n. 14.

ing, (4) finance, and (5) the automotive industry.¹⁴ In the healthcare field, AI has been used to automate basic administrative tasks such as sending out prescriptions.¹⁵ In addition, AI helps to facilitate the doctor-patient relationship by “allowing patients to communicate their symptoms to a [machine], book doctor appointments and conduct regular (virtual) check-ins with their medical providers.”¹⁶

Insurance companies use automation to collect data on customers in order to create and customize quotes for insurance coverage within seconds.¹⁷ A McKinsey report predicts that with the advancement of AI, insurance companies will be able to utilize sensors to make claims and adjust policies in real time.¹⁸ Traditionally, insurance claim adjusters have been used by insurance companies to assess the different components of a claim. However, the need for claim adjusters could be eliminated altogether by using automated sensors to reconstruct car crashes to determine liability. It may be more appealing and efficient for insurance companies to have a device that can perform all the functions of an adjuster in real time.

Automation is also transforming how corporations are marketing. AI algorithms use collected data to help corporations determine the best demographics to market to, as well as what type of advertising content is most relevant and engaging to viewers.¹⁹ AI efficiently cuts time on research and reduces the spending of resources in unnecessary areas.²⁰ Such efficiency could be more practical for businesses to use rather than human workers.

Automation is estimated to save financial institutions \$1 trillion dollars by 2030.²¹ Financial institutions are using automation to process data for its clients and combat fraudulent activity.²² Hedge funds are using AI to efficiently input massive amounts of data.²³ In

14. Jeremy Fain, *Five Industries Being Transformed By Artificial Intelligence*, FORBES (Apr. 15, 2019, 8:00 AM), <https://www.forbes.com/sites/forbesagencycouncil/2019/04/15/five-industries-being-transformed-by-artificial-intelligence/#51e390c54c7e>.

15. *See id.*

16. *Id.*

17. *See id.*

18. Ramnath Balasubramanian et al., *Insurance 2030: The Impact of AI on the Future of Insurance*, MCKINSEY & Co. (Mar. 12, 2021), <https://www.mckinsey.com/industries/financial-services/our-insights/insurance-2030-the-impact-of-ai-on-the-future-of-insurance>.

19. *See id.*

20. *See id.*

21. *Artificial Intelligence and the Banking Industry's \$1 Trillion Opportunity*, THE FINANCIAL BRAND, (May 29, 2018), <https://thefinancialbrand.com/72653/artificial-intelligence-trends-banking-industry/>.

22. Fain, *supra* note 14.

23. *See id.*

addition, banks are using AI to manage customer queries remotely.²⁴ Customers can use automation to access their accounts from home instead of visiting a bank and speaking with a teller.²⁵ The conventional financial workers used to assess financial statements or assist customers in local branches may not have a place in the future of automation.

Initially, the automotive industry used automation for manufacturing purposes.²⁶ Today, automation is still used in manufacturing; however, companies are finding ways to use the technology in AI to be even more efficient. Advancements in automation have equipped newer vehicles with sensors that will alert to dangerous situations in real time.²⁷ AI is being used in vehicles to detect and react to different driving conditions, such as stopping at a red light.²⁸ As a result, self-driven cars are creating a space and completely transforming the automotive industry. With the increase of self-driven cars, there will be less of a need for cars services, like taxis and Uber drivers. Automation has transcended into many other industries, not only the above-mentioned, and continues to grow as society advances further in the field of technology.

C. *Effect of Automation in Blue Collar vs. White Collar Industries*

Separate tiers of workers have been affected by automation differently. Initially, automation only had an impact on blue-collar jobs.²⁹ Blue-collar jobs are typically jobs that require less education and more physical work.³⁰ Blue-collar workers are generally minorities and lower income individuals that are usually paid a lower wage as opposed to white-collar workers.³¹ Some examples of blue-collar jobs

24. *See id.*

25. *See id.* (“[B]anks are turning to chatbots to manage customer queries and image recognition to allow people to deposit checks from their mobile phones.”)

26. *See* Fabrice Boisset, *The History of Industrial Automation in Manufacturing*, AUTOMATE (May 24, 2018), <https://www.automate.org/editorials/the-history-of-industrial-automation-in-manufacturing>

27. Ramnath Balasubramanian et al., *supra* note 18.

28. Lance B. Eliot, *Coming Release of Tesla Autopilot ‘Red Light’ Auto-Stopping Could Trigger a Self-Driving Downward Spiral*, FORBES, (Mar. 30, 2020, 11:12 AM), <https://www.forbes.com/sites/lanceeliot/2020/03/30/coming-release-of-tesla-autopilot-red-light-auto-stopping-could-trigger-a-self-driving-downward-spiral/#19ad084713ff>.

29. Sheelah Kolhatkar, *Could New Research on A.I. and White-Collar Jobs Finally Bring About a Strong Policy Response?*, THE NEW YORKER, (Jan. 14, 2020), <https://www.newyorker.com/business/currency/could-new-research-on-ai-and-white-collar-jobs-finally-bring-about-a-strong-policy-response>.

30. *See id.*

31. *See id.*; *see* Mark Muro et al., *What Jobs are Affected by AI? Better-Paid, Better-Educated Workers Face the Most Exposure*, THE BROOKINGS INST. (Nov. 20, 2019), <https://>

include factory workers, machine operators, and construction workers. White-collar jobs often require specialized education and involve more creative thinking and thought-provoking tasks.³² At the time AI was introduced, the technology used in automation was not advanced enough to provide machines with the capability to do the specialized tasks associated with white-collar jobs.³³ Examples of white-collar jobs include doctors, lawyers, and accountants. It is uncertain whether automation will advance to a point of replacing the subjective thought of individuals necessary for certain white-collar jobs. However, it is important to note that automation continues to advance with endless possibilities.

The Brookings Institute conducted a research study using a method created by Michael Webb, a Stanford PhD candidate.³⁴ Webb developed a way to calibrate the possible exposure of different occupations to automation.³⁵ Webb created an algorithm to examine approximately 16,000 AI patents and cross-referenced the patents with different types of employment and descriptions from the U.S. Department of Labor's O*NET database.³⁶ The cross reference correlated the AI patents with different types of employment.³⁷ Webb's study concluded that blue-collar jobs were mainly affected by software and industrial robots.³⁸ Although other factors may have played a part in the displacement of blue-collar workers, Webb was able to confirm the impact of his research on automation by examining the job displacement in blue-collar jobs specifically over the last thirty years.³⁹ When assessing white-collar jobs, Webb concluded AI would have a displacing effect, but was uncertain to what degree.⁴⁰ The Brookings Institute took Webb's research further and determined "that workers with graduate or professional degrees will be almost four times" more exposed to AI than workers with high school degrees.⁴¹ In addition, The Brookings Institute posited that workers with bachelor's degrees will be five

www.brookings.edu/research/what-jobs-are-affected-by-ai-better-paid-better-educated-workers-face-the-most-exposure/.

32. See Kolhatkar, *supra* note 29.

33. See *id.*

34. See *id.*; see Muro, et al., *supra* note 31.

35. Michael Webb, *The Impact of Artificial Intelligence on the Labor Market*, STANFORD UNI. DEPT OF ECON. (Nov. 6, 2019), <https://ssrn.com/abstract=3482150>.

36. *Id.*

37. *Id.*

38. *Id.* at 19.

39. *Id.* at 20.

40. *Id.* at 46.

41. Muro, *supra* note 31.

times more exposed to AI than workers with just a high school degree.⁴² As a result, it is likely that no job, blue-collar or white-collar, will be safe from the impending impact of automation.

D. *The African American Experience in Automation*

When compared to the general population, African Americans are more likely to be adversely affected by automation because they have a 10% higher risk of job displacement as a result automation.⁴³ A McKinsey & Co. report estimates that approximately 4.5 million jobs held by African Americans could be displaced due to automation by 2030.⁴⁴

In the report, researchers conducted a study where they examined “economic intersectionality” by correlation to race, gender, education, and geography; and focused on how each factor may affect the increasing challenges of automation as it relates to the future of the work force for African Americans.⁴⁵ Gender was a distinct factor in determining what group will be affected the most.⁴⁶ African Americans males were overrepresented in the type of jobs most at risk for displacement from automation including: food preparation service workers, retail salespersons, and cashiers.⁴⁷ On the contrary, African American females were overrepresented in jobs that involved “the need for dynamic, physical motions and deep interpersonal connections,” such as nursing assistants and home health aids.⁴⁸ African American women are estimated to be less affected by automation even compared to both Asian and Caucasian men.⁴⁹ The issue, however, still remains that the African American community, as a whole, is at a greater risk to suffer more by the adverse effect of automation in the job market.

42. *Id.*

43. Allana Akhtar, *Artificial Intelligence is Slated to Disrupt 4.5 Million Jobs For African Americans, Who Have a 10% Greater Likelihood of Automation-based Job Loss Than Other Workers*, BUS. INSIDER AUSTRALIA (Oct. 8, 2019, 3:57 AM), <https://www.businessinsider.com.au/mckinsey-finds-black-men-will-lose-more-jobs-automation-2019-10>.

44. *Id.*

45. Amaka Uchegbu et. al, *The Future of Work in Black America*, MCKINSEY & Co. (Oct. 4, 2019), <https://www.mckinsey.com/featured-insights/future-of-work/the-future-of-work-in-black-america>.

46. *See id.*

47. *See id.*; Akhtar, *supra* note 43.

48. Uchegbu et. al, *supra* note 45.

49. *Id.*

E. Possible Effects of Automation on the Tax Economy and Individual Income

Individuals are major contributors to the tax economy.⁵⁰ One of the key determinants of a flourishing economy comes from an increasing national revenue due, in part, to individual income taxes.⁵¹ It would be difficult for an economy to prevail if the amount of individuals paying taxes are decreasing in their contributions, while the corporations paying taxes might carry a heavier burden or vice versa.⁵² Although there are several ways to measure an effective economy, this article focuses on federal revenue.

Two main sources of the federal revenue come from payroll tax and individual income tax.⁵³ Both sources are directly funded in full, or in part, by wages and salaries of individuals.⁵⁴ Generally, households with higher income pay a larger percentage in taxes than compared to households with lower income.⁵⁵ Payroll tax is an additional tax that is based on income.⁵⁶ However, payroll tax focuses on the actual earnings of workers. Payroll tax is more regressive when compared to individual income tax, in that it alternatively “collect[s] a higher percentage of total earnings from lower-income workers than higher-income ones.”⁵⁷ Generally, an individual must be working in order to contribute to payroll tax.

The largest source of federal revenue is individual income.⁵⁸ Individual income tax consists of taxes on wages, investments, business income and capital gains; however, the highest tax burden in the U.S. is derived from labor income.⁵⁹ Displacing workers through automa-

50. See *Policy Basics: Where Do Federal Taxes Revenues Come From*, CTR. ON BUDGET AND POLICY PRIORITIES, https://www.cbpp.org/sites/default/files/atoms/files/PolicyBasics_WhereDoFederalTaxRevsComeFrom_08-20-12.pdf (last updated Aug. 6, 2020) [Hereinafter *Policy Basics*].

51. See *id.*

52. See *id.*; See also Vito Tanzi, Howell Zee, *Tax Policy for Developing Countries*, INT'L MONATARY FUND (Mar. 2001), <https://www.imf.org/external/pubs/ft/issues/issues27/>. (“Good tax policy, therefore, ensures that the top marginal personal income tax rate does not differ materially from the corporate income tax rate.”)

53. *Policy Basics*, *supra* note 50.

54. *Id.*

55. *Id.*

56. See *id.*

57. *Id.*

58. Jay A. Soled & Kathleen DeLaney Thomas, *Automation and the Income Tax*, 10 COLUM. J. TAX L. 1, 19 (2018).

59. *Id.*

tion without finding a feasible alternative could decrease the tax contributions attributed from individuals having employment.

Tax contributions from individual income have been vital to sustaining the federal revenue. In 2019, approximately seventy-seven percent of individuals who filed taxes were projected to pay a payroll tax.⁶⁰ More specifically, individual income tax from wages and salaries have assisted in creating a productive U.S. economy. With the projected increase in the displacement of workers due to automation, payroll tax would be directly affected. When an individual is terminated from work due to the creation of a system or machine, the government does not collect payroll tax. Even if an individual acquires new employment, the time period the individual was not working cannot be collected in payroll tax.

II. PROPOSALS, DEFENSES & CRITIQUES

A. *Shifts in the Tax Burden*

The rate at which corporations are investing in automation compared to the estimated projections of displaced tax-paying workers is a change in society worth noting. Creating neutral tax policies through tax reform is a way to create relevant laws that will assist in the ultimate goal of creating a thriving economy. Shifting the tax burden to focus more on businesses that use automation may be a practical way to protect the economy by proactively regulating the projected elimination of wages and salaries due to automation.

Tax incentives, like tax deductions, are a tool used in the Internal Revenue Code (“the Code”) to motivate a particular economic activity.⁶¹ Tax deductions are used to lower the taxable income before it is subjected to taxation.⁶² The Code defines tax deductions as expenses that are “helpful and appropriate” to a business.⁶³ Currently, there are different tax deductions that may be applicable to both individuals and businesses. After tax deductions, income (of the individual or business) is then taxed depending on what bracket the taxable in-

60. Joseph Zeballos-Roig, *One Jarring Chart Shows How Taxes on Workers Have Essentially Replaced Those on Corporations*, MKT. INSIDER (Dec. 13, 2019, 8:39 AM), <https://markets.businessinsider.com/news/stocks/chart-showing-taxes-on-workers-have-higher-corporations-paying-less-2019-12-1028762171>.

61. See *Tax Deductible Business Expenses*, INC., <https://www.inc.com/encyclopedia/tax-deductible-business-expenses.html> (last visited Feb. 3, 2022) [hereinafter *Tax Deduct Business Expenses*].

62. *Id.*

63. *Id.*

come falls under.⁶⁴ The greater the tax deduction, the lower the tax bracket an individual or business may be placed under. For example, an individual with an annual income of \$50,000 may receive \$20,000 in tax deductions. The deductions can decrease the individual's taxable income to \$30,000. The reduction of taxable income from before to after the tax deductions may allow the individual or business to be taxed at a lower percentage rate. Shifting the tax burden on businesses through a cap on certain business deduction can encourage businesses to observe its use of AI and closely regulate the rate of displacement within the business. Keeping the displacement rate below a certain amount can make businesses eligible for higher tax deductions which could be used to offset or contribute to the employee related deductions businesses already take such as "administrative expenses, business related travel and entertainment, automobile expenses, and employee benefits."⁶⁵ Additionally, the Code is pro-business and has provisions, such as the accelerate depreciation method, that create preferential treatment to businesses.⁶⁶ The accelerated depreciation method was initially introduced as part of the Job Creation and Worker Assistance Act of 2002 and has been expanded by the Tax Jobs and Cuts Act of 2017.⁶⁷ Generally, under the Code, businesses are allowed to deduct the cost and maintenance of equipment purchased for business purposes each year over the lifespan of the equipment.⁶⁸ However, the accelerated depreciation method allows a business to deduct the depreciation value of the equipment entirely up front instead of over the span of several years.⁶⁹ For example, if a business purchases equipment valued at \$200,000 with an average lifespan of seven years, typically under the Code, the business can deduct the depreciation value each year for the seven years. With accelerated depreciation, however, the business can deduct the full \$200,000 in the first year of filing. This type of deduction may be particularly beneficial for businesses that choose to increase their use of automation. The more

64. *Briefing Book: Key Elements of the U.S. Tax System*, TAX POLICY CENTER, <https://www.taxpolicycenter.org/briefing-book/key-elements-us-tax-system> (last visited Mar. 14, 2022).

65. *Tax Deduct Business Expenses*, *supra* note 61.

66. Mashuri Thakur & Dheeraji Vaidya, *Accelerated Depreciation*, WALLSTREET MOJO, <https://www.wallstreetmojo.com/accelerated-depreciation/> (last visited Mar. 14, 2022).

67. Christopher Ingraham, *A \$300 Billion Business Tax Break Meant To Raise Wages Is Instead Helping Companies Replace Workers with Machines, Study Says*, THE WASHINGTON POST (Feb. 13, 2019, 6:00 AM), <https://www.washingtonpost.com/us-policy/2019/02/13/billion-business-tax-break-meant-raise-wages-is-instead-helping-companies-replace-workers-with-machines-study-says/>.

68. *Id.*

69. *Id.*

automated machines used by corporations, the greater the potential for more tax deductions when applying the accelerated depreciation method. In the abstract, the appreciated depreciation method encourages more automation use and indirectly encourages using fewer human workers.

Researchers at Duke University and Grinnell College conducted a study that examined the effects of an accelerated or bonus depreciation on individuals and the economy of different counties.⁷⁰ The study deduced that the counties most exposed to the usage of accelerated depreciation experienced lower compensation for workers.⁷¹ The authors of this study credited the decrease in worker's compensation in part to automation by concluding, "as many jobs lost to automation were well-paid jobs in production, administration, and sales, the rapid decline in these county sub-sectors likely explains some of the later period declines in compensation and compensation per worker."⁷² Furthermore, the author suggest that accelerated depreciation promotes lower work compensation through automation by creating a cheaper method of investing in equipment rather than salary and wages for workers.⁷³ A shift in the Code relating to the appreciated depreciation method could prove useful to influence businesses to regulate the displacement of workers. A possible solution could be to put a cap on the depreciation amount. It may be useful to look at the top five industries, as stated above, most affected by automation and observe the common automation used in those industries; and consequently, exclude the automated machines used from receiving the full accelerated depreciation deduction.

Unfortunately, there are some issues associated with shifting the current tax burdens on individuals verses corporations. First, the shifted tax burden could possibly affect all corporations and not just the ones using automation.⁷⁴ The tax burden may be considered unreasonable for corporations that do not use automation, or use it at a low level. In addition, it may prove difficult to define the automation being used and how it is used by different corporations. As stated, automation comes in various forms and through technological advancements is constantly evolving. There may be several attempts and modifications made before creating a definition that can account for all types of

70. *See id.*

71. *See id.*

72. Ingraham, *supra* note 67.

73. *Id.*

74. Ryan Abbott & Bret Bogenschneider, *Should Robots Pay Taxes? Tax Policy in the Age of Automation*, 12 HARV. L. & POL'Y REV. 145, 173 (2018).

applicable automation. Another issue is the uncertainty as to what degree the tax burden should be shifted. It may be onerous to determine how much of a shift is enough to keep up with and balance the use of automation with the displacement of workers.

When considering the possible indirect implications of a tax shift on the economy, it would also be important to consider what factors could assist in creating a sustainable economy. It would be useful to examine the sources of the federal revenue that would be affected the most by a tax shift. This could help determine how and where to make up for possible deficits from the displacement of human workers. For example, if the Code no longer imposed a payroll tax on employers and employees, this would lighten the burden on individuals, since they would not be paying more tax. However, the payroll tax plays a substantial part in federal revenue and contributes to fund federal programs, such as Social Security, Medicare, and unemployment compensation. Although this shift may be beneficial in some aspects, a plan would need to be in place to set off such a major deficit. Therefore, it is important to gauge the rate of automation used in the U.S. in order to create a potential standard for where businesses need to be for eligibility to receive the maximum amount for certain deductions. Knowing this standard would allow businesses to project the amount of deductions that possibly apply. Additionally, an assessment of the average total amount of deductions through the accelerated depreciation method and the projected automated machines that will be excluded would be necessary to evaluate the impact of such a tax shift.

B. *The Robot Tax*

A tax proposal, called the robot tax, has begun to be implemented to regulate the use of AI from displaced workers.⁷⁵ The robot tax entails a possible tax burden on businesses that use AI in order to regulate the amount of automation a business may use and keep an incentive for businesses to invest in workers.⁷⁶ Essentially, the robot tax is a tax that burdens businesses with high AI usage in an attempt to maintain the contribution in income tax from wages and salaries.⁷⁷ The 2017 McKinsey Global Institute reported that nearly \$2.7 trillion

75. Lewis Silkin, LLP, *Robot Tax: the pros and cons of taxing robotic technology in the workplace*, FUTURE OF WORKHUB (Dec. 4, 2019), <https://www.futureofworkhub.info/comment/2019/12/4/robot-tax-the-pros-and-cons-of-taxing-robotic-technology-in-the-workplace>.

76. *See id.*

77. *See id.*

in annual wages could be disrupted by automation.⁷⁸ This is a major problem that could have a devastating effect on the U.S. economy through a possible decrease in individual income tax from salaries and wages. Thus, a tax regulation on AI could be the solution to combat this wage elimination.

Different countries around the world have either proposed or have begun implementing what has been referred to as a “robot tax.”⁷⁹ The robot tax has been a successful preventative measure in creating funding for the rise in unemployment.⁸⁰ South Korea is the first country in the world to implement a tax on robots.⁸¹ The gradual rate at which workers were being replaced by automation was concerning to the South Korea government, similar to the U.S.⁸² The *Korean Times* defines a tax on robots as a “levy tax on the use of robots for industrial automation.”⁸³ The South Korean government created a policy to reduce tax incentives that can be deducted from a corporation’s taxable income.⁸⁴

An additional method for establishing a robot tax involves creating a tax policy specifically geared toward corporations that use automation. The purpose of the robot tax would be to regulate the inescapable rise of automation and to offset the loss of individual income. In 2019, former New York City Mayor, Bill de Blasio, introduced a robot tax that would require corporations, where workers have been displaced due to automation, “to pay the equivalent of five years worth of payroll taxes up front for each worker whose job was eliminated.”⁸⁵

A possible impediment to robot tax is the extent of its burden on corporations. Opponents to establishing a tax on robots voice a concern about the burden creating a robot tax would have in promoting innovation within a society.⁸⁶ This is because if there is a reduction in the rate corporations allocate expenditures to purchase new automated tech-

78. See Gary A. Bolles, *Unbundling Work: Learning to Thrive in Disruptive Times*, MEDIUM.COM (Feb. 8, 2017), <https://medium.com/@gbolles/unbundling-work-learning-to-thrive-in-disruptive-times-427b172b1470>.

79. Lewis Silkin LLP., *supra* note 75.

80. *Id.*

81. *Id.*

82. Yoon Sung-won, *Korea Takes First Step to Introduce ‘Robot Tax,’* THE KOREAN TIMES (Aug. 7, 2017), https://www.koreatimes.co.kr/www/news/tech/2017/08/133_234312.html.

83. *Id.*

84. *Id.*

85. Catie Perry, *Mayor de Blasio’s ‘Robot Tax’ Aims to Save Workers From the ‘Threat of Automation,’* FOX BUS. (Sept. 5, 2019), <https://www.foxbusiness.com/business-leaders/de-blasios-robot-tax-save-workers-threat-automation>.

86. Lewis Silkin LLP., *supra* note 75.

nology, developers in the technology field may become less willing to develop them.⁸⁷ Opponents argue that a trickling effect could hinder a society's progression and the overall implications and advancements associated with new technology.

Moreover, opponents of a robot tax also have a concern of losing businesses to other countries.⁸⁸ The purpose of for-profit corporations is to maximize profits while using the least amount of resources. Automation increases efficiency and productivity in the workforce, which ultimately leads to greater profits for corporations but at the expense of causing a decrease in the need for workers; thus, a potential tax shift that could damage the economy. However, a robot tax may indirectly counteract the objective of the maximization of profits. For example, imposing a robot tax could cause corporations who use automation to see a reduction in their dividends paid out to their shareholders. A robot tax may compel corporations to move their business to a country or jurisdiction with lighter tax burdens for corporations.

C. *Educating the Masses*

AI education may prove to be another key factor in reducing the rate at which workers will be displaced due to automation. The displacement of workers is not a new phenomenon. As mentioned in the first section of this article, there is a long history of the use of automation in different industries in the workplace.⁸⁹ Fortunately, education has been at the forefront of being able to keep up with technological advances in industries like agriculture by preparing workers for positions beyond their primary field of work.⁹⁰ For example, from the 1900s to the year 2000, "the proportion of the U.S. workforce in agriculture fell from 41 percent to 2 percent, yet agricultural output rose dramatically and there was no long-term increase in the unemployment rate, [rather] a greater proportion of the population participated in the labor force."⁹¹ Although there was a drastic decrease in the percentage of workers in agriculture, the U.S. was able to maintain employment and prevent any oppressive changes in the unemployment

87. *Id.*

88. *See A Robot Tax is a Bad Idea: Automation Actually Saves and Creates Jobs*, AUTOMATE (Sept. 25, 2019), <https://www.automate.org/news/a-robot-tax-is-a-bad-idea-automation-actually-saves-and-creates-jobs>.

89. Fain, *supra* note 14.

90. Drew Hansen, *Amazon Go Doesn't Have to Be the End of the American Dream*, FORBES, (Dec. 19, 2016, 7:39 PM), <https://www.forbes.com/sites/drewhansen/2016/12/19/amazon-go-end-american-dream/#c86a5972b3e8>.

91. *Id.*

rate because AI created a demand of new correlated jobs that were then unimaginable and non-existent.⁹² Children educated between 1900 and 2000 were able to use the skills they learned to find employment in new jobs created by AI, such as computer programmers and radiology technicians, which were beyond their primary field of work.⁹³

Supplemental resources need to be extended in education, especially in computer technology and in trade schools, to ensure the protection of tax-paying employment. A concern when examining the unemployment rate is the lack of individuals with sufficient educational experiences to fill different positions. According to a National Skills Coalition report, fifty-four percent of jobs in the U.S. are “middle-skill jobs” (jobs that require education beyond high school but not necessarily a four-year degree); however, only forty-four percent of individuals that work these jobs are trained to the middle-skill level.⁹⁴

Historically Black Colleges/Universities (HBCUs) should be a focus when considering resources to educate individuals on the advancements of automation.⁹⁵ As previously mentioned, African American males are estimated to be one of the highest groups adversely impacted by automation.⁹⁶ To address this discrepancy, it would be beneficial to establish partnerships between the government, educational institutions, and the communities that HBCUs serve. Trade schools and programs can be created and highlighted at these institutions so minority individuals, most effected by AI, can receive training on certain advancements based on the skills needed in the community job market. Moreover, this causes an incentive for businesses in the community to guarantee employment to individuals that complete the program, reducing the adverse impact to the African American community caused by AI.

III. CONCLUSION

The robots are coming whether the U.S. is ready for them or not. However, automation does not have to be viewed negatively. As seen by the mayo clinic in Jacksonville, Florida, automation can be used to prevent harmful exposure and potentially save lives. Furthermore, the efficiency that automation produces can save a business

92. *Id.*

93. *Id.*

94. *Id.*

95. See *AI at Historically Black Colleges*, GITHUB, <https://charlescearl.github.io/ai-hbcu/> (last visited Mar. 14, 2022) [Hereinafter *AI at HBCUs*].

96. Akhtar, *supra* note 43.

time, money, and additional resources. Automation has the potential to invade many industries and effectively make day-to-day life more convenient. Many corporations all over the world have acknowledged the potential in automation and are planning for the future. Billions of dollars are estimated to be invested in automation to progressively move the workforce forward.

Human workers are essential factors when it comes to stimulating the economy and providing for federally funded programs. Individual income through wages and salaries are one of the key ways in which workers put money back into the economy. Even so, automation is projected to continue disrupting the labor market and displacing workers. This will have an adverse effect on individual income, which is a major source in financing the government and boosting the economy. Therefore, it is vital to not only look at the pros, but to also closely analyze the possible consequences implicated with the upward trend of automation.

Tax incentives may be a tool to influence corporations to retain human capital over automation. If there is a lower percentage of workers, the contribution from individual income may decrease and such contribution would have to be made up elsewhere. If not, there could be possible cuts to federally funded programs such as Medicaid, which is used to assist the medical needs of millions of Americans with low income. Automation can become more beneficial if the U.S. can stay ahead of the potential adverse implications. Individuals contribute a much higher percentage of income to the federal revenue when compared to corporations.⁹⁷ In some circumstances, the Code is pro-business by giving businesses preferential treatment.⁹⁸ It may be advantageous to the economy to shift some of the tax burden as a way to regulate corporations. Countries, like South Korea, are realizing the pros and cons of automation and are addressing its adverse effect on tax-paying workers.⁹⁹ A proactive approach may be to invest further in educating individuals to meet the demands that may arise with automation.¹⁰⁰ It is particularly important to help individuals most at risk of the disadvantages of automation.¹⁰¹ The robots are indeed coming. However, through targeted policies addressing the potential implications of job displacement, the U.S. could be ready.

97. See *Policy Basics*, *supra* note 50.

98. See *Thakur & Vaidya*, *supra* note 66.

99. See *Lewis Silkin LLP.*, *supra* note 75; See *Yoon Sung-won*, *supra* note 82.

100. See *AI at HBCUs*, *supra* note 95.

101. See *id.*; see also *Fain*, *supra* note 14.