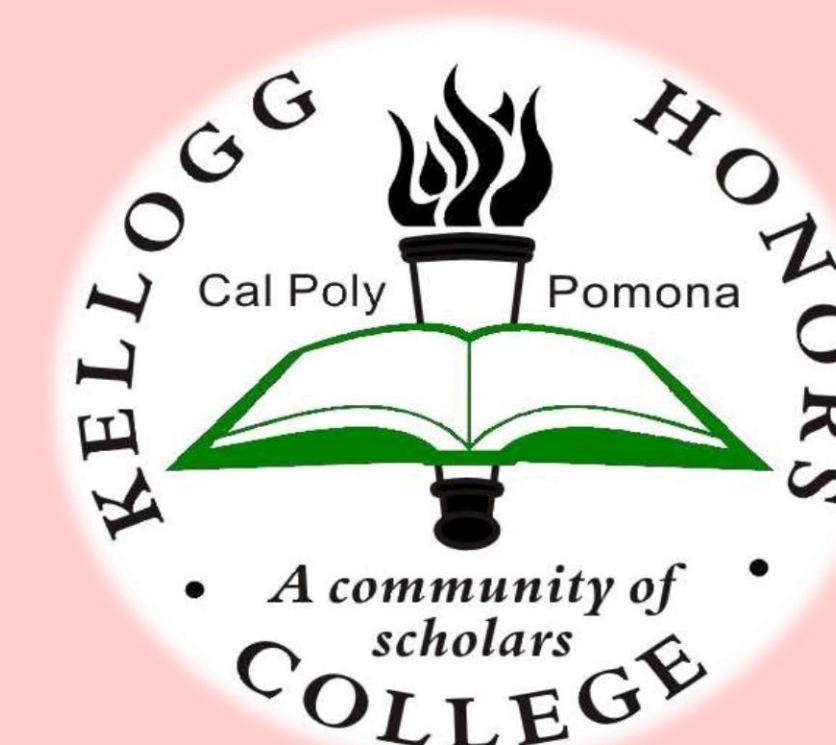


Taxation on Automation



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Abstract

The automation of jobs using robots and other advanced technologies has led to a growing concern about an increase in unemployment while decreasing tax revenues. A majority of federal tax revenue currently consists of payroll taxes and corporate income taxes. To address these concerns, there have been recent calls for the adoption of a robot tax. The robot tax attempts to level the playing field between robots and humans, preserve jobs, and raise additional tax revenues to support displaced workers. However, there are significant difficulties involved in implementing and designing a robot tax that is effective, equitable, and enforceable. Many of these concerns are a symptom of a larger problem. The tax law currently under-taxes capital income and over-taxes labor income. As a result, automation provides another reason to reevaluate the tax preferences for capital income. Congress should reform the current payroll tax system to minimize its burden on labor income and expand its burden on capital income. Non-tax policy measures must also be adopted. These policies should seek to provide a substantial investment in human capital, an adequate social safety net to help displaced workers, and promote innovation.

Concerns on Automation

Loss of Jobs

On one hand, experts argue this fear is overstated.

- ❖ 2017 study by the McKinsey Global Institute forecasts that although automation will likely displace up to one-third of the American workforce by the year 2030, new and additional work will be created in the future globally to offset the impact of automation.

On the other hand, other experts predict that robots will significantly disrupt the labor market in the near future.

- ❖ A study conducted by the World Economic Forum calculates that with respect to the global workforce, “current trends could lead to a net employment impact of more than 5.1 million jobs lost to disruptive labor market changes over the period 2015-2020.”

In sum, it is too early to tell whether this time the fear of long-term structural unemployment is justified. There is a general consensus that robots will significantly disrupt the labor market at least in the short-term.

Increased Economic Inequality

If robots displace primarily lower-skill jobs and increase the demand for higher-skill jobs → income disparity is likely to increase.

- ❖ Even if robots do not eliminate routine and lower-skill jobs, workers in these occupations are nevertheless likely to see a decline in wages.
- ❖ Alternatively, it is also possible that the benefits of automation will not go to labor at all, but rather will go to the owners of the robots – an even smaller group than just highly-skilled workers.

Loss of Tax Revenue

Governments will lose a substantial amount of much-needed tax revenues as more human workers are displaced by machines.

- ❖ Current tax system: a significant source of federal and state tax revenues is borne by workers, not capital.
- ❖ Wages are subject to payroll taxes, which are often remitted directly to the government through wage withholding or quarterly estimated tax payments.
- ❖ Capital income is not subject to these payroll taxes. Instead, the net investment income of high-income individuals is subject to an additional tax of 3.8 percent (“unearned income Medicare tax” or “Section 1411 surtax”).

Thus, the growing shift from labor income towards capital income shows it is critical that we rethink our current tax system and how we fund welfare spending and other social transfers of wealth.

Critique of the Robot Tax: “Vast Oversimplification”

Definition Issues

How do we define a “robot” for tax purposes?

- ❖ The European Union’s defines a robot with the following characteristics: (i) acquires autonomy through sensors and/or by exchanging data with its environment and trades and analyzes data, (ii) is self-learning, (iii) has a physical support, and (iv) adapts its behaviors and actions to its environment.
- ❖ This definition likely excludes many types of labor-displacing automation, while at the same time including many forms of labor-enhancing technologies, thereby undermining the goals of the robot tax.

Innovation Issues

This tax is likely to hinder innovation.

- ❖ A robot tax would increase the cost of robots, therefore reducing the incentive for companies to innovate.
- ❖ New technology is often a major driver for economic growth and progress.
- ❖ Taxing robots would negatively impact a country’s international competitive position → drive production abroad and further exacerbate the loss of jobs, growing inequality and lost tax revenues.

Tax Avoidance Issues

A robot tax may be subject to significant tax avoidance techniques → limiting its effectiveness.

- ❖ Automation of jobs is often created by software that does not require a physical structure, which allows many of these systems to be hosted in the “cloud” or on the internet and accessed remotely.
- ❖ In many instances, this makes it possible to move the “robot” to a no- or low-tax jurisdiction.

A robot tax is also likely to add more complexity into our tax system.

- ❖ There is the increased risk of tax non-compliance as companies may not know how much tax they have to pay and of enforcement difficulties as tax authorities may not be able to verify the accuracy of the asserted tax liability.

Design, Implementation, and Administrative Issues

What is the tax base for the robot tax and how would it be measured?

1. By subjecting “the imputed hypothetical salary the robots should receive from equivalent work done by humans” to same type of income and payroll taxes as labor income.
 - In practice, robots often take over tasks before taking over an entire job, which makes finding a link between the robot and the displaced worker difficult.
 - A robot may complement, rather than displace a human worker, but differentiating between job-enhancing and job-displacing robots is difficult.
2. Impose the robot tax on the amount of income generated by the use of automation.
 - How do we measure the profits or value created by the robot or automation program?
3. Using the ratio of the company’s revenues to the number of employees to compute the tax base for the robot tax.
 - Because productivity is measured as the ratio of economic outputs to labor input, this approach effectively penalizes productivity, which is necessary for GDP growth.

Reference

Mazur, Orly, Taxing the Robots (August 15, 2018). Pepperdine Law Review, Vol. 46, Forthcoming; SMU Dedman School of Law Legal Studies Research Paper No. 401. Available at SSRN: <https://ssrn.com/abstract=3231660>

What is a Robot Tax?

A “robot tax,” also referred to as an “automation tax” is essentially a tax on companies that use robots or automated technologies that replace human workers.

- ❖ When humans perform work, that work is subject to both income and payroll taxes, whereas the same work performed by a robot is not subject to the same level of tax.

A robot tax seeks to level the playing field and tax robots comparably to the humans that they are replacing.

- ❖ According to its proponents, the general idea behind the tax is to help protect jobs against automation by increasing the cost of robots relative to humans and slowing down the adoption of this technology.
- ❖ It also attempts to protect the tax base and provide governments with revenues that can be used to support or retrain displaced workers, foster the creation of new jobs, and provide other social benefits to mitigate economic inequality.

Implementations of a Robot Tax

The first serious proposal to tax the robots originated in the European Union.

- ❖ Although the European Parliament ultimately rejected this recommendation on February 16, 2017, the following day, Bill Gates stated his support for a similar robot tax in the United States.

Similarly, a San Francisco politician, concerned about the growing revenue gap and wealth inequality brought about by automation, proposed that the City of San Francisco adopt an automation tax to replace taxes lost to automated jobs.

- ❖ According to her proposal, companies would pay payroll taxes on machines based on the payroll tax that the job automation replaces.

Meanwhile, South Korea introduced what has been called the first “robot tax.”

- ❖ The provision does not directly impose a tax on robots, but rather reduces tax incentives for investments in automation technology.
- ❖ Thus, it is not technically a robot tax, but seeks to achieve similar policy goals.

Alternative Solutions

Modify the Payroll Tax

Payroll Tax on Labor Income

- ❖ The purpose of the payroll tax is primarily to fund the Social Security and Medicare federal benefit programs. These programs provide economic benefits to retired or disabled workers and their survivors and help fund the nation’s health insurance program for people age 65 or older.
- ❖ Option 1: completely repeal the payroll tax system and replace it with a less labor-focused tax system that could better fund social insurance programs.
- ❖ Option 2: exempt employers from making employment tax payments on the wages and salaries of their employees.
- ❖ Limitation: Significant decline in government revenues and deprive Social Security and Medicare. Adopting any of these changes would require the introduction of a new tax or taxes that can generate substantial revenues to fund Social Security and Medicare or any replacement social insurance program.

Payroll Tax on Capital Income

- ❖ The Section 1411 surtax encompasses all capital income, rather than singling out a robot’s income, which makes it a more workable and equitable tax than that proposed by current robot taxes.
- ❖ Limitation: Because the Section 1411 surtax only applies a 3.8 percent tax to net investment income above a certain threshold, capital income below the threshold is not subject to any Medicare-type tax.
- ❖ If the payroll tax system remains, the Section 1411 surtax should not be repealed.

Tax Capital Income

- ❖ As the relationship between capital and labor becomes further interdependent in economic production, the government’s ability to distinguish between labor and capital income is likely to become more challenging and arbitrary.
- ❖ Congress should eliminate the major tax preferences granted to capital income.
- ❖ Tax all capital more in parity with labor, rather than singling out robots or certain types of capital for taxation as suggested by the robot tax.

Additional Policy Measures

- ❖ Tax policy alone cannot solve all of the issues raised by the robotics revolution. Instead, tax policy needs to be taken into account together with government regulation and targeted government spending.

Increase the Government’s Investment in Human Capital

- ❖ The government could provide additional funds to improve the quality and effectiveness of education and the access to education and worker retraining systems in the form of direct government spending: increasing federally funded education grant programs, reducing interest rates on student loans, and increasing loan limits on federal student loans.
- ❖ Increased tax expenditures related to labor, such as training and hiring incentives for employers and more expansive tuition credits and deductions.

Strengthen Social Benefit Systems

- ❖ Universal basic income: the idea that all citizens, regardless of their employment, wealth, or status, would receive a fixed, periodic sum of money from the government in order to cover basic living expenses.

Measures to Promote Innovation

- ❖ Nontax policy options: increasing government funding for basic research, granting prizes to support specific innovations, reducing ineffective regulatory burdens and creating direct financial incentives for small business entrepreneurs and other job-creating businesses and activities.