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Should machines be taxed like people?

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As governments struggle to find new sources of revenue, they are reminded of the possibility of taxing firms for the automation of work. But are robot taxes efficient? **Samiha Chowdhury** *and* **Nikita** *overview the literature and discuss the feasibility of robot taxes as a source of government revenue.*

The UK government is currently in a position that requires additional sources of revenue, evidenced by the financial cuts made across sectors. One prominent example of this is seen in the publication of the NHS England Mandate and the final budget for 2022-23, which showed that the NHS revenue budget will be decreased by £330m and a further funding refusal was issued to the Department of Health and Social Care for ongoing costs related to the COVID-19 pandemic (HSJ, 2022). Healthcare is not the only sector to be greatly affected financially; the education sector is also suffering. Data analysis shows that there has been no overall growth in spending for this sector in the last 15 years, leading to a tightening of educational resources that is "effectively without precedent in post-war UK history" (Institution

for Fiscal Studies, 2021). These budget cuts highlight the dire need for a further source of revenue for the government, with worries that there could be further detrimental cuts in the future if action is not taken immediately.

The implementation of a robot tax could act as a potential solution for the government's financial woes. The term 'robot tax' refers to taxing the existence of robots or the operation of the robot's labour in a company's production and logistics (Bendel, 2019). This idea has resulted from advancing automation and artificial intelligence (AI) in the workplace, given AI is estimated to increase the UK's current GDP by 22% by the year 2030 (McKinsey Global Institute, 2019). However, the robot tax has its pros and cons that may act as a barrier to its implementation in the UK.

Possible effects on employees and taxes

Despite the benefits of technological advancement, unregulated technology may produce "serious social, economic and political harms" (Merola, 2022, pp.2). A growing concern exists amongst wider society that companies will begin to replace a large number of human workers with robots, leading to a potential increase in unemployment. Industry experts have pointed out that the advantages of having AI in the workplace have been acknowledged since the COVID-19 pandemic, like the avoidance of health risks and time off, which can result in higher productivity (Time, 2020). Therefore, employers may increasingly view automation as a more reliable and efficient substitute for human workers. It is predicted that workers with ordinary abilities and low to medium skills are at the most risk of job loss at the hands of increasing AI, which could widen the skilled-unskilled wage gap (Zang, 2018). This increased wage gap will only end up intensifying the effects of the current cost-of-living crisis, as those who already struggle with daily living expenses will be left without an income.

As evidenced in most advanced economies, employers greatly benefit from tax windfalls by using automation and thus evading taxes on human employees (Merola, 2022). According to HM Treasury, income tax and national insurance contributions accounted for more than 40% of total tax receipts in the financial year 2020-21 (ONS statistics, 2021). Hence, employed human workers are a big source of tax revenue and the government will suffer from the loss of tax revenue.

Introducing a robot tax seems like an effective solution for both issues at hand. The tax would penalise companies for using robots by making them pay for their use, leading them to be more reluctant to replace their lower-skilled workers (Falcão,

2018). Research on the effect of automation on the skilled-unskilled wage gap shows that although an acceleration in automation will not necessarily lead to an increase in wage inequality, taxing robots can improve this inequality unconditionally (Zang, 2018). Implementing this tax will also benefit the government by substituting any lost taxes from employees who have been replaced by AI, significantly reducing the potential loss in revenue from the decreased income and payroll tax (Falcão, 2018).

Reducing the pace of development?

Taxing automation might cause a reluctance to use robots in the workplace. Consequently, this may lead to a lack of incentives for companies to invest in new technology, causing a halt in technological advancement and, therefore, economic growth (Gasteiger, Prettner, 2020). This is because globalisation and competition between international markets require countries to keep pace with the development of technology (Falcão, 2018). In the long run, the economies that choose to implement a robot tax may suffer, as companies may no longer have the incentives to invest in innovation. So, the robot tax might negatively impact the income of future workers and leave them in a worse situation than our current one (Gasteiger, Prattler, 2020).

A study by Bogenschneider (2021) produced empirical evidence of a positive correlation between robot density and countries that impose high corporate tax rates, such as Germany and Japan. The study also showed that there is little to no automation used by companies in "tax havens where the value of tax deductions for capital investment is zero" (Merola, 2022, pp.5). The use and increase of automation may not necessarily be halted by the implementation of higher taxes such as robot taxes.

The method of taxation

The implementation strategy will be crucial to mitigate the potential foreseen challenges of robot taxes. There is an ongoing debate about how exactly to tax the use of automation and three main suggestions have been put forward. One proposal is to enforce a higher corporate tax on employers that wish to use robots in the workplace. However, humans and robots often collaborate on tasks and so it would be difficult to measure the work distribution between robots and workers for tax purposes (Merola, 2022). Another option is to make robots subjectable to a lump-sum tax that the employers must pay for their usage (Guerreiro et al., 2020). But this

could have a negative financial impact on small businesses and not a great effect on larger corporations, which would be unjust (Merola, 2022). Finally, there is a suggestion of taxing robots as if they were human workers on a salary (Buttone, 2018). However, this is seen as overly complex to implement as robots are unlikely to replace human employees in every task (Merola, 2022). Therefore, the taxation methods proposed by the experts come with certain complexities that may be far from perfect.

Specific to the case of the UK, some experts have recommended that the government consider initiating a discussion with other countries where the use of AI is also prevalent and create a coordinated strategy for implementing robot taxes (Buttone, 2018). This way, all nations that partake in this may benefit from increased revenue for their government and may avoid capital moving to jurisdictions that will not tax the use of automation (Gasteiger, Prettner, 2020). Alternatively, if an international movement is unfeasible or takes too long to establish, then the UK may consider enacting a robot tax for a selected period, to slowly see its outcome before any positive or negative consequences spiral; academic research proposes taxing robots for three decades (Guerreiro et al., 2020). If this is done, the effect on innovation and displacement of workers can be measured whilst seeing the effectiveness of the chosen method of taxation. This trial can also act as testing grounds if the government is unsure of its impact on the economy, state, and society.

Conclusion

Taxing the use of automation can be a feasible method of increasing governments' revenue. A robot tax may prevent the large-scale displacement of low-medium skilled workers and mitigate the negative effects of automation on the working class and the potential increase in wealth disparity. The government should be mindful of the discussed challenges that come with implementing the robot tax. Nevertheless, the revenue generated can contribute to economic growth and the expansion of government budgets for social welfare, making it worthwhile to spend time thinking of an implementation strategy and battling the foreseen barriers. The revenue could be beneficial to workers who have been displaced by AI and are unable to find new jobs, or it could be redistributed as a universal basic income (Merola, 2022). There is an abundance of ways in which the revenue created by robot tax may benefit the government, showing that it may be an efficient method of aiding our financial crisis.

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Notes:

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