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Research paper

Robot Tax and The Indian Perspective

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Abstract

The rapid convergence of Robotics and Artificial Intelligence (AI) is transforming industries, triggering fears of job loss, income inequality, and a decline in tax revenues. In response, the world's policymakers have proposed a 'robot tax', a tax on automation, aimed at offsetting the fiscal impact of declining employment-based tax revenues. Though such apprehensions are legitimate, the article argues that such taxation is a misdirected policy intervention that may curtail innovation, retard productivity, and generate economic inefficiencies. A better approach, however, is to address inherent structural imbalances in the tax system, especially in India, where fiscal policies are grounded in the country's constitutional ethos. India's tax system, both direct and indirect taxation, disproportionately affects labour income while subjecting capital income to very little taxation.

Excessive reliance on indirect taxation increases economic inequality, which disproportionately impacts low-income groups. Meanwhile, corporate tax incentives and relatively lower capital gains taxes help wealth accumulation. Considering the constitutional mandate for social welfare, reforming the tax system to fairly distribute the fiscal burden between labor and capital is crucial. Instead of implementing a robot tax, the article recommends raising capital gains taxes and pursuing progressive tax reforms. Furthermore, complementary policies such as labor market reforms, reskilling programs, and improved social security are essential to support displaced workers and promote technological innovation. A balanced tax policy that accounts for the relationship between labor and capital income in India, consistent with the country's constitutional principles of equity and justice, can enable a smooth shift to an AI-driven economy while fostering economic inclusion.

Keywords: *Robot Tax; Labour Taxation; Capital Taxation; Economic Justice; Progressive Taxation.*

1. Introduction

We are on the threshold of a sweeping technological transformation. The rapid advancement of automation tools such as artificial intelligence, robotics, machine learning, and other cutting-edge computational systems is ushering in structural changes across global economics, societies, and everyday life (Soori, Arezoo & Dastres, 2023). India also stands at the cusp of this revolution, experiencing both the promises and disruptions of such innovation. In recent years, we have already witnessed machines undertaking various tasks ranging from legal analysis and assistance in surgical procedures to managing digital marketing, evaluating insurance policies, interpreting financial data, and operating autonomous vehicles (Rashid & Kausik, 2024). The rise of machines capable of performing high-level cognitive functions poses unique challenges and opportunities for a country as diverse and populous as India (Sunil, 2023). A substantial segment considers it a paradigm shift.

While the rise of automation technologies like robotics and machine learning brings undeniable societal advantages, it also triggers significant economic and policy-related concerns. Among them is the displacement of human labour due to the increased use of robots, leading to growing fears of unemployment and a decline in the share of income tax revenue (Filippi, Bannò & Trento, 2023). As businesses reap more profits from automation, these gains tend to concentrate among a few corporations, potentially worsening the existing disparities in the distribution of wealth and influence (Khogali & Mekid, 2023).

To mitigate these effects, several global policy discussions have turned towards the notion of a 'Robot Tax' (Dimitropoulou, 2024). This concept involves treating robots as taxable entities, thereby subjecting the income derived from their functions to income taxes, much like human labour (Dimitropoulou, 2024). By doing so, the tax seeks to offset job losses, stabilize tax collections, and ensure a level playing field between machines and human workers (Abbott & Bogenschneider, 2018).

However, there are compelling arguments against this approach. Defining what qualifies as a "robot," measuring its productivity, and assessing its taxable contribution are fraught with ambiguity (United Nations Development Programme, 2025). Such challenges make the tax difficult to implement equitably or enforce effectively. Moreover, critics argue that taxing automation could stifle innovation and slow economic growth, outcomes that would be particularly detrimental in developing economies like India, where technology-driven productivity gains are crucial for growth and inclusion (Sinha, 2024).

Nonetheless, even if a direct robot tax may not be optimal, tax policy can still play a vital role in addressing the disruptions caused by automation. In the Indian context, this may include adaptive tax incentives, workforce reskilling initiatives, and regulatory frameworks

that balance technological progress with social equity (NITI Aayog, 2018). One of the most pressing issues lies in the imbalance between how capital and labour incomes are taxed (Singh, 2019). Currently, capital income often enjoys preferential treatment, while labour income, especially through salary taxes (India Briefing, 2025), which in the Indian Taxation system is generally referred to as Income Tax, bears the heavier burden (Mohanty, 2020). As economies, including India's, become more reliant on automation and capital-intensive technologies, this disparity amplifies inequities and weakens the fairness of the tax system (Filippucci et al., 2024).

To address this, fiscal reforms should aim to neutralise the tax treatment of labour and capital. One key adjustment is to reduce the tax load on wages or salaries while increasing it on capital gains and income generated through automated systems (Nathan, 2014). This shift is essential to prevent employers from favouring machines solely due to lower tax liabilities, a concern particularly relevant in India's large labour market. Further, capital income taxation should be re-examined in the context of the automation revolution (Nakatani, 2022). New technologies put growing pressure on income-based tax systems, which remain dominant in many developing countries. Without reform, these systems risk inefficiency and increased inequality (Nakatani, 2022). Adjusting capital tax preferences can help discourage over-reliance on machines while promoting a more inclusive, human-centred economic model (Merola, 2022).

The automation era not only deepens the divide between capital and labour but also opens avenues for tax gaming, where capital is favored over wages (Acemoglu, Manera & Restrepo, 2020). This imbalance is especially troubling in emerging economies like India, where a large portion of the population depends on labor-intensive sectors for livelihood (Press Trust of India, 2023).

While several tax reforms, such as the U.S. Tax Cuts and Jobs Act, have attempted to address these distortions, they often worsen the bias by further privileging capital income (Center for American Progress, 2024). This paper rightly concludes that neither the robot tax nor limited tax reforms alone can comprehensively address the multifaceted issues of automation. Instead, a broader socio-economic strategy is required, one that includes substantial investments in education, human capital, and an improved social safety net to support displaced workers and foster innovation (World Bank, 2025). This broader strategy is crucial in India as well, where the twin challenges of unemployment and underemployment demand a more robust policy mix.

The article proceeds with a structured critique: Part II outlines automation's threats and benefits; Part III explains the shortcomings of robot taxation; and Part IV argues for comprehensive reform, including both tax adjustments and non-tax interventions. It is opined that the adoption of such measures promises to enhance tax equity and system efficiency, especially in rapidly digitising economies like India's.

2. The Socio-Economic Threat

Technological innovations, including AI, robotics, and machine learning, have yielded significant advantages such as improved efficiency, accelerated economic growth, and better living standards (Brynjolfsson & McAfee, 2014). However, these advancements are not without consequences. The global proliferation of automation has raised critical concerns about labour market disruptions, widening income gaps, and declining tax revenues, especially in developing countries with large labour forces like India (Ernst, Merola & Samaan, 2018). Media narratives frequently highlight the fear of large-scale job losses due to automation. Headlines predicting that robots will soon replace millions of workers have sparked public anxiety (Arntz, Gregory & Zierahn, 2016). These fears stem from the visible replacement of human labour in sectors like manufacturing, logistics, and even services.

Yet, experts remain divided. While some believe that the threat of mass unemployment is overstated and that technology will ultimately create more jobs than it displaces (Arntz, Gregory & Zierahn, 2016). Others argue that the short-term effects, particularly in economies like India's with underdeveloped social safety nets and limited reskilling capacity, could be severe (Banerjee et al., 2021). This calls for proactive labour market policies to protect vulnerable workers while transitioning to an AI-driven economy.

2.1. Job Displacement versus Job Creation: A Dual Narrative

Despite fears of automation-driven unemployment, many economists argue that technological advancement will likely result in job transformation rather than total loss. Automation increases productivity, which can drive economic growth, raise labour demand, and create new jobs in both emerging and established sectors (McKinsey Global Institute, 2017). For example, while a McKinsey study predicted that automation could displace nearly one-third of U.S. jobs by 2030, it also suggested that global job creation would likely offset these losses (McKinsey Global Institute, 2017).

Similarly, other research shows that past technological revolutions eventually led to net employment gains, with machines often complementing human tasks instead of replacing them outright (Bessen, 2019). Such findings offer optimism for countries like India, where technology can be leveraged to modernise the labour force rather than shrink it, if policies support reskilling and transition.

However, not all experts share this optimism. Some predict significant short-term labour market disruptions. The World Economic Forum, for instance, estimated that over 5 million jobs could be lost globally between 2015 and 2020 due to automation (World Economic Forum, 2018). With 47% of U.S. jobs considered automatable, similar disruptions are feared in labour-abundant economies like India (John, 2018–2019). These forecasts highlight the importance of adaptive policy frameworks to cushion workforce transitions and ensure inclusive growth. The rapid evolution of artificial intelligence and machine learning has expanded automation's reach into complex, non-routine tasks, roles once thought immune to technological replacement. Jobs such as truck drivers, accountants, paralegals, and telemarketers may face potential automation, raising concerns about the pace and scale of labour market disruption (Filippi, Bannò & Trento, 2023).

This technological acceleration indicates that labour displacement could occur faster than in previous industrial revolutions, posing particular risks for emerging economies like India, where low-to-medium-skill employment remains widespread (NITI Aayog, 2019). Moreover, declining computational costs make automation increasingly affordable, further incentivising businesses to replace labour with machines (Acemoglu & Restrepo, 2018).

Yet, whether these changes will trigger enduring, large-scale unemployment remains uncertain. Some experts foresee long-term job losses, while others argue that the historical resilience of labour markets may prevail, with new job categories emerging alongside automation (Autor, 2015). This ongoing debate highlights the need for India and other such growing economies to proactively invest in reskilling programs and adaptive social safety nets to manage potential disruptions.

Even if the long-term impact of automation on employment remains uncertain, most experts agree that technological shifts will disrupt labour markets in the short term. History illustrates that workers displaced from one sector must transit to new roles in emerging industries, a process often marked by instability (Acemoglu & Restrepo, 2020). In India, where informal employment constitutes a significant part of the workforce, such transitions could exacerbate economic vulnerabilities unless reskilling initiatives and social safety nets are swiftly strengthened (Institute for Human Development & International Labour Organization, 2024). Therefore, policymakers must act proactively to manage the turbulence caused by even temporary job displacements.

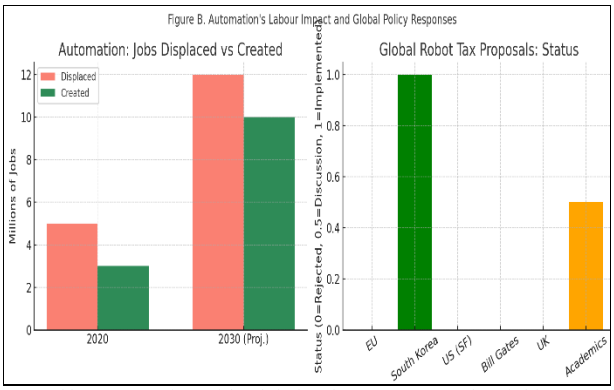

Fig. 1: B → Combines Jobs Displaced vs Created by Automation with Global Robot Tax Proposals, Linking Automation's Labour Impact with International Policy Experiments.

2.2. A Concern of Rising Economic Inequality Hindering Inclusive Growth

Automation's broader economic impact extends beyond employment as it also threatens to intensify income and wealth inequality. As robots replace human labour, the profits generated tend to accrue to capital owners (Le, Nguyen & Vu, 2024). Robots are expected to predominantly replace or suppress wages in low and medium-skill occupations, further widening the income gap between less-educated and more-educated workers (Acemoglu & Restrepo, 2017). Even when these roles are not eliminated, workers are likely to face wage cuts as they compete with machines that are more efficient, cost-effective, and do not require breaks or other benefits (International Labour Organization, 2021). These dynamics place downward pressure on wages, particularly in sectors like India's informal economy, where low-skilled labour is prevalent.

As robots increasingly take over routine tasks, demand for human labour in these areas diminishes, exacerbating economic inequality. This wage suppression disproportionately affects vulnerable groups, risking greater concentration of wealth among a select few (Upreti & Sridhar, 2024).

Moreover, the broader concern is that the economic benefits of automation may accrue primarily to capital owners, not workers, even high-skilled ones (Acemoglu & Restrepo, 2018). Furthermore, wage disparities could deepen within the labour force. Low-skill jobs face increasing downward pressure, while high-skill, tech-oriented positions may see wage premiums rise, concentrating wealth among a smaller elite (Rubery, 2003). This accelerates the shift of income from labour to capital, a trend already visible in many economies, including India, where corporate profits have risen faster than wages (Piketty, 2014). Without robust policy interventions, such as progressive taxation and inclusive growth strategies, automation threatens to deepen wealth concentration and social disparities.

2.3. Loss of Tax Revenue in the Capital-Driven Economy: An Indian Context

As automation reduces human employment, a critical concern for governments is the erosion of tax revenue, particularly from labour income sources. This issue is particularly significant in India, where the formal workforce is limited and a large proportion of employment is concentrated in the informal sector, which contributes minimally to direct tax collections (Ministry of Labour & Employment, 2014).

In India, the tax base relies heavily on indirect taxes, such as the Goods and Services Tax (GST), rather than salary or social security taxes like those seen in Western economies (Rao, 2019). Direct tax contributions, such as income tax and corporate tax, primarily come from the formal sector, which is already narrowly defined. As automation displaces formal labour, this tax base risks further contraction, exacerbating the government's revenue-generation challenges (High-Level Advisory Group, 2019).

Moreover, India does not have dedicated salary-based social security taxes like Medicare or Social Security contributions in the U.S. (Internal Revenue Service, 2025). Instead, the Employees' Provident Fund (EPF) and Employees' State Insurance (ESI) are funded largely by employer and employee contributions, with limited coverage across the labour force (Employees' State Insurance Corporation, 2022). A shrinking formal workforce due to automation would strain these social safety nets, leaving fewer resources for welfare programs unless alternative revenue streams, such as capital gains taxes or corporate taxation, are restructured (Government of India, Ministry of Finance, 2025).

Given these dynamics, India's fiscal resilience in an automation-driven economy depends on recalibrating its tax policies, reducing the over-reliance on indirect taxes, and broadening the capital income tax base (Mishra, 2021). Without such reforms, the displacement of labour by machines could deepen fiscal deficits and weaken social welfare capacity.

Rather than labour, capital income, such as profits from investments or automation technologies, often escapes the heavier tax burdens placed on wages. In the U.S., for example, high-income earners pay additional Medicare taxes on labour income above certain thresholds, but capital gains face comparatively lighter taxation (Hourani et al., 2023).

India faces a similar disparity. While labour income is taxed progressively, capital gains taxes on investments and corporate profits are relatively modest (Bharti, Chancel, Piketty & Somanchi, 2024). For instance, long-term capital gains on equity investments in India are taxed at 10% above ₹1 lakh, whereas salary income is taxed at rates up to 30% (Chokhawala, 2025). Moreover, dividend income and business automation profits often attract lower tax rates or benefit from exemptions, leading to an imbalance between the taxation of capital and labour (Hadzhieva, 2016).

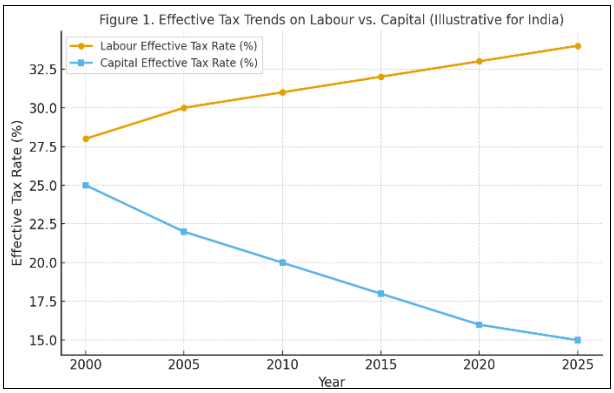

Fig. 2: A → Combines Effective Tax Burden (Labour vs Capital) with Share in National Income, Showing How Labour Is Both More Taxed and Earning Less Share Over Time.

Globally, mechanisms like Section 1411 of the U.S. Surtax on Investment Income attempt to bridge this gap (Internal Revenue Service, 2025). However, India has yet to introduce such targeted capital surcharges that explicitly account for automation-driven profits. As a result, if robotics and AI replace labour, the tax contributions from capital remain disproportionately low, jeopardising fiscal stability.

2.4. Automation's Fiscal Impact on Social Welfare Systems: India's Challenge

Unlike human workers, robots and AI systems do not contribute to employment taxes, which form a crucial revenue source in many economies (Chand, Kostić & Reis, 2021). As automation displaces labour, this shrinking tax base could limit the government's ability to fund essential social programs. While Western countries rely on salary taxes for programs like Social Security and Medicare (Organisation for Economic Co-operation and Development, 2024), India's welfare system faces a similar risk, albeit through different structures. India's Employees' Provident Fund (EPF) and Employees' State Insurance (ESI) schemes, funded via employer-employee contributions, are vulnerable to formal workforce reductions caused by automation.

Though robots do not require retirement or health benefits, government expenditures may still rise. This is because the displacement of human workers will likely increase demands for unemployment support and reskilling programs, both of which require public funding (Evans-Klock et al., 1998). India's skill development programs and social protection schemes (India Employer Forum, 2025) will face mounting fiscal pressure if displaced workers need to be reintegrated or supported over longer periods. In essence, as salary contributions shrink, governments, including India's, must identify new revenue sources (e.g., through capital taxation or automation levies) to sustain welfare commitments. Without this recalibration, budgetary shortfalls could jeopardise long-term economic stability and social cohesion.

3. Transition to The Robot Tax Debate: What India may Imbibe

Amid growing concerns over job displacement, economic inequality, and declining tax revenues, the idea of a robot tax has gained global attention. The following section introduces the robot tax concept, critically analyses its implications, and explores whether such a policy could address the fiscal and social challenges posed by automation.

3.1. What is a "Robot Tax"?

A robot tax, sometimes referred to as an automation tax, is a levy imposed on companies that deploy robots or automated technologies to replace human labour (Abbott & Bogenschneider, 2018). Traditionally, when humans perform work, their income is subject to income tax and salary contributions. However, the same output produced by machines is often exempt from equivalent taxation, creating an uneven fiscal playing field between labour and automation (Jiang, Wang, & Liu, 2024).

On that point, the purpose of a robot tax is to equalise this disparity by taxing the use of robots at a rate comparable to the tax burden borne by human workers. Proponents argue that such a tax could slow the adoption of automation, protect jobs, and preserve government revenues, which are vital for funding social welfare and reskilling programs (Mann, 2019).

In the Indian context, the idea of a robot tax has not yet gained widespread policy traction, but the underlying issues—job displacement, tax base erosion, and rising inequality—are highly relevant (Kar, 2024). With India's large informal workforce and limited social security net, the fiscal risks of unchecked automation could be even more severe (Krishna, 2025). The concept gained momentum internationally when the European Union (EU) proposed treating robots as "electronic persons" for tax and social security purposes (European Parliament, 2020). Under such frameworks, automation-driven profits would face taxation similar to human labour, ensuring that governments continue to collect revenues needed for public programs (Gaetano, 2016).

3.2. Global Experiments with Robot Taxes

While the European Union (EU) initially explored the concept of a robot tax, proposing that companies deploying automation pay similar taxes to those levied on human labour, the proposal was rejected in 2017 (EUnited, 2017). Nonetheless, the idea continued to gain traction globally. Bill Gates publicly endorsed a robot tax to slow automation's pace and offset job losses (Delaney, 2017a). In the United States, proposals such as that in San Francisco suggested that companies should pay salary-equivalent taxes on automated jobs, essentially replicating the taxes lost through workforce automation (Delaney, 2017b). Similarly, South Korea became the first nation to adopt a form of robot tax in 2017, although rather than taxing robots directly, the policy reduced tax incentives for investments in automation technologies (Sung-won, 2017).

These cases reflect a growing global dialogue around automation taxation. For India, which is still early in its automation curve but facing similar risks—job displacement, tax revenue erosion, and inequality (International Labour Organization, 2023)—these global experiments offer valuable policy lessons. As automation accelerates, India's fiscal strategy must proactively consider how to balance innovation incentives with equitable tax structures.

The contemporary debate on robot taxation and automation in India must be situated within both global and national developments. Early techno-pessimist forecasts, such as Frey and Osborne's widely cited projection that nearly half of U.S. jobs were at high risk of automation, set the tone for anxieties about large-scale displacement (Frey & Osborne, 2017). Later empirical work by Acemoglu and Restrepo confirmed that industrial robots had measurable negative impacts on employment and wages in U.S. local labor markets, thereby bridging the gap between speculative models and real evidence of displacement (Acemoglu & Restrepo, 2020). These global concerns found resonance in policy circles when the European Parliament debated civil law rules on robotics in 2017, introducing the possibility of taxing robots to fund welfare (European Parliament, 2017). South Korea's 2017 reform went further in practice, by reducing tax credits for automation investment, a measure often described as the world's first robot tax experiment, offering real-world evidence that fiscal levers can shape automation outcomes (Kang, 2024). Legal scholars have attempted to provide frameworks for such taxation. Abbott and Bogenschneider argued for tax neutrality, suggesting that payroll-like contributions from automated systems could offset declining labor taxes without discouraging innovation (Abbott & Bogenschneider, 2018). Oberson, by contrast, developed one of the earliest doctrinal monographs on "taxing robots," outlining definitional challenges and potential bases for levies (Oberson, 2019). These normative and doctrinal perspectives were balanced by Atkinson's counter-argument that robot taxes could slow productivity growth and worsen stagnation, a position of particular importance for India, which still faces the challenge of raising labor productivity (Atkinson, 2019). Recent global surveys, such as the World Economic Forum's Future of Jobs Report 2023, have updated the debate by emphasizing the simultaneous risks of job displacement and opportunities for reskilling, making workforce transition a central policy question (World Economic Forum, 2023).

Indian sources further contextualize these concerns. The Economic Survey 2024–25 explicitly addressed the risks and opportunities of artificial intelligence (AI) and automation, calling for renewed investment in reskilling and safety nets rather than punitive taxes (Ministry of Finance, 2025). NITI Aayog's National Strategy for AI (2018) and its follow-up Responsible AI papers (2021–2022) similarly positioned AI as a growth enabler, warning that premature fiscal penalties could discourage innovation (NITI Aayog, 2018; NITI Aayog, 2021–2022). The IndiaAI Expert Group Report (2023) projected large value addition from AI adoption but emphasized the necessity of workforce transition programs, suggesting that earmarked levies on digital or capital income could be redirected to training (IndiaAI Expert Group, 2023). Importantly, new empirical evidence is emerging. A SAGE study (2024) using panel data between 2011 and 2021 found that automation risk intensity had increased in India, albeit unevenly across sectors, highlighting why one-size-fits-all robot taxes may be inappropriate (Das et al., 2024). At the global level, ILO and G20 analyses (2025) confirmed that automation disproportionately affects women and youth, an insight supported by Pieters and colleagues' working paper showing that routine-task intensity makes female workers in developing countries more vulnerable to displacement (International Labour Organization & G20 Framework Working Group, 2025; Pieters et al., 2025). Ganuthula and Reddy (2025) similarly demonstrated that India faces "double vulnerability," combining a high share of low-skill employment with weaker AI-preparedness, thereby exacerbating wage inequality and making employment shocks more disruptive than in advanced economies (Ganuthula & Reddy, 2025).

Beyond economics, sociological literature underscores how automation intersects with social hierarchies. Hammer and Karmakar (2021) critiqued NITI Aayog's AI strategy for ignoring informal sector realities, caste-based exclusion, and workplace inequalities, pointing out that the future of work is mediated by social structures, not just economic models (Hammer & Karmakar, 2021). Classic and contemporary deskilling theories similarly warn that automation may erode the quality of work even where jobs are not eliminated (Braverman, 1974). Contemporary case studies reinforce these warnings: recent reports on India's $280 billion BPO sector show AI displacing entry-level call-center jobs by automating translation, quality assurance, and customer interactions, while only workers able to retrain into higher-value roles remain employable (Shih, 2025). The policy debate in India is also becoming sharper. Media outlets such as Outlook Business have highlighted that, given the findings of the Economic Survey 2024–25, a robot tax or equivalent fiscal intervention may soon be politically inevitable if displacement pressures intensify (Outlook Business, 2025). At the same time, interdisciplinary think-tanks like Brookings and Long Finance warn that robot taxes in isolation may stifle innovation, advocating instead for broader fiscal frameworks, including capital-income taxation, sovereign funds, or reskilling levies aligned with digital economy growth (Malde, 2024; Long Finance, 2024). These proposals resonate strongly in India's context, where the challenge is to balance innovation, productivity, and equity.

Table 1: Global Robot Tax Proposals

Country / Actor	Key Idea & Outcome
European Union (2017)	Proposed "electronic persons" status for robots with tax/social obligations. → Rejected by Parliament.
South Korea (2017)	Reduced automation tax incentives (indirect robot tax). → Implemented.
US – San Francisco (2017)	Payroll-equivalent tax on jobs replaced by automation. → Not enacted.
US – Bill Gates (2017)	Publicly advocated robot tax to slow automation and fund welfare. → Not legislated.
UK – Jeremy Corbyn (2017)	Political proposal to tax companies using robots. → Not legislated.
Global Academics (2018–2024)	Research-backed ideas: automation levies, higher corporate tax for automated firms, sector surcharges. → Still under discussion.

3.3. Critiques of the Robot Tax Model

The concept of a "robot tax" has been proposed as a means of offsetting job losses and compensating for shrinking labor tax bases in the age of automation. Globally, it has attracted attention in Europe, where the European Parliament debated the idea in 2017, and in South Korea, where automation-related tax incentives were reduced in 2017. Proponents argue that such measures could fund social protection and reskilling programs. Yet, the idea faces significant criticisms on economic, administrative, and equity grounds. From a productivity perspective, Robert Atkinson contends that robot taxes could slow innovation and worsen stagnation at a time when productivity gains are vital for growth (Atkinson, 2019). This is reinforced by McKinsey's modelling, which suggests that automation is essential to long-term competitiveness and that penalizing it may delay the creation of new categories of employment (McKinsey Global Institute, 2017). From an administrative perspective, Xavier Oberson and Robert Kovacev highlight definitional and enforcement difficulties, particularly the challenge of determining what constitutes a "robot" for tax purposes (Oberson, 2019; Kovacev, 2020). Real-world evidence from South Korea further demonstrates that blunt fiscal measures can reduce investment in automation, with unintended economic consequences (Kang, 2024). Finally, distributional critiques emphasize that robot taxes may not effectively address inequality. Abbott and Bogenschneider argue for tax neutrality between human and robot labor, while Daniel Hemel points out that existing tax codes already favor capital over labor, suggesting that rebalancing existing structures may be more effective (Abbott & Bogenschneider, 2018; Hemel, 2019). Taken together, these critiques indicate that while robot taxes raise important questions of fairness, they are blunt instruments with limited suitability for India's socio-economic context. This makes it necessary to consider more practical alternatives, such as progressive capital gains taxation, sector-specific surcharges, reskilling levies, and wealth taxes, which will be discussed in the following section.

3.4. Critique of the Robot Tax: Pitfall for India

While the robot tax has gained attention as a policy tool to offset the impacts of automation, it faces practical and conceptual challenges. Critics argue that taxing robots as though they were human workers oversimplifies the complex dynamics of labour and technology (Abbott & Bogenschneider, 2018). The following are five major issues that complicate the implementation of a robot tax:

3.4.1. Definitional Ambiguity

A central dilemma in designing a robot tax is:

- How do we define a "robot"? This point is quite far from being straightforward.
- Is a robot any machine that replaces a human job?
- Does it include software algorithms (e.g., AI systems performing legal or medical functions)?
- Does it cover virtual bots or only physical machines?

The European Union's 2017 proposal defined a robot as a system that (European Parliamentary Research Service, 2017):

1) Acquires autonomy via sensors or data exchanges
2) Learns from its environment
3) Has a physical form
4) Adapts behaviours through interaction

However, this definition excludes many labour-displacing technologies, like AI-based financial algorithms (IBM Think, n.d.), while potentially capturing non-replacement tools like smart assistants (Rashid & Kausik, 2024). This ambiguity risks either undermining the tax's objectives or discouraging beneficial innovations.

For India, where digital transformation is accelerating in sectors like finance, agriculture, and services (India Brand Equity Foundation, 2023), defining what constitutes taxable automation is even more complex. Without clear parameters, applying such a tax could stifle emerging AI startups while failing to target large-scale industrial automation (Bryan & Teodoridis, 2024).

3.4.2. Tax Policy Distortion: Why only Robots?

Another critical challenge for the robot tax debate is: Why target robots specifically and not other forms of capital (Kovacev, 2020)? A robot tax essentially functions as a capital tax imposed only on one category of assets—automation technologies—used by businesses (Kovacev, 2020). This selective taxation could inadvertently grant preferential treatment to other capital assets, such as machinery or software that aren't classified as robots but still enhance productivity (Atkinson, 2019).

If the goal is to safeguard tax revenues and minimise labour disruption, critics argue that the tax should encompass all productivity-enhancing technologies, not just robots. Otherwise, robot-specific taxes risk discouraging productive investments that may boost economic output (Atkinson, 2019).

This issue is especially pertinent in India, where sectors like agriculture, healthcare, and manufacturing are rapidly adopting various forms of capital investment, from AI-enabled platforms to smart irrigation systems, that aren't strictly "robots" but have significant labour impacts (CSEP, University of Prayagraj, 2023). Focusing solely on robots misses the broader issue: tax laws favour capital over labour (Menon, 2024). The decline in labour tax contributions relative to capital gains and corporate profits under India's current tax framework underscores the need to rebalance capital taxation, rather than isolating robots as a unique problem (Press Information Bureau, 2024).

3.4.3. Innovation Concerns: Hindering Growth

Taxing robots risks discouraging innovation, a key engine for economic growth and productivity improvements globally and in India (Sinha, 2024). Automation, robotics, and AI technologies contribute significantly to efficiency gains, cost reductions, and quality enhancements across sectors like healthcare, transport, and criminal justice (OECD, 2019). In India, these technologies are integral to programs like Digital India and Make in India, aiming to elevate economic competitiveness (India Brand Equity Foundation, 2023). Over-taxing automation could deter foreign investment and stifle domestic innovation, pushing production abroad to lower-tax jurisdictions and thereby worsening job displacement, inequality, and tax revenue losses (Atkinson, 2019).

Thus, while addressing automation's disruptive impacts is vital, tax policies must balance regulation with fostering innovation (OECD & KDI, 2021). Overly punitive measures, such as a robot tax, may hinder technological progress that could otherwise enhance social welfare and inclusion.

3.4.3. Tax Avoidance and Enforcement Challenges

Another significant critique of the robot tax lies in its vulnerability to tax avoidance. Unlike physical labour or traditional machinery, automation systems, particularly software-based AI, are highly mobile and often operate remotely via the cloud (OECD, 2015). This mobility complicates enforcement, as companies could host automated systems in low-tax jurisdictions while benefiting from productivity gains elsewhere (Acemoglu, Manera, & Restrepo, 2024).

For India, where digital services and cloud computing are rapidly expanding (Jetking, 2025), this issue is especially pronounced. Even with domestic automation in sectors like banking or e-commerce, the intangible nature of software-driven automation makes it challenging to regulate or tax effectively without broader global tax cooperation (OECD, 2015).

3.4.4. Design, Implementation, and Administrative Complexity

Even if policy challenges are addressed, the practical implementation of a robot tax is fraught with technical difficulties (Oberson, 2019; Kovacev, 2020). A robot does not earn income directly, nor does it fit neatly into existing tax frameworks. This raises complex questions like (Oberson, 2019):

- What is the taxable base for automation?
- How do we measure its output?
- Do we tax based on "imputed wages" that displaced workers would have earned?

In India, where tax administration capacity remains uneven, especially across states and sectors, such complexities could lead to compliance issues and ineffective enforcement (Rao & Rao, 2013). Moreover, taxing labour-displacing robots based on hypothetical wages introduces subjective assessments (Ossandón Cerda, 2020, pp. 187–219), which could increase disputes and bureaucratic burdens.
Given India's diverse industrial landscape, ranging from informal sectors to high-tech industries (Chakraborty, 2024), a one-size-fits-all robot tax design would be administratively cumbersome. Simpler alternatives, like broader capital gains reforms or incentives for human-centric job creation, might be more practical and effective (York, Furth, & Davidson, 2022).

3.4.5. Rebalancing Capital and Labour: Taxing Capital in the Age of AI

3.4.5.1. Automation as a Catalyst for Capital Tax Reform

With machines and algorithms taking over jobs that were previously done by human labour, the revenue from capital assets has skyrocketed, sometimes exceeding revenue from labour. This also means that India's taxation systems need to be critically reviewed so that they remain fair and in tune with the new economic realities.
The taxation of capital gains in India has undergone substantial reforms in recent times. As per the Finance (No. 2) Act, 2024 (Ministry of Finance, 2025), a uniform tax rate of 12.5% has been introduced for long-term capital gains on all capital assets (Government of India, 2025), eliminating the indexation benefit that previously allowed for inflation adjustments in asset valuation (Removal of Indexation Benefit on Sale, 2025). This move aims to simplify the tax regime and broaden the tax base.
However, this approach alone may not adequately address the disparities arising from automation-driven income shifts. High-income individuals and corporations, who are more likely to own capital assets and invest in automation technologies, stand to benefit disproportionately under the current tax framework (Effectiveness of Tax Incentives for Venture, 2025). This scenario highlights the need for a more nuanced tax policy that considers the socio-economic implications of automation (Alahakoon & Bandara, 2025).
The current structure of income taxation offers considerable preferential treatment to capital income when compared to labour income. In most jurisdictions, including India, tax provisions such as reduced rates on capital gains, dividend income exemptions, deductions for research and development, and accelerated depreciation have disproportionately benefited capital owners (Ernst & Young, 2025). These provisions subsidise capital accumulation while labour income remains taxed at relatively higher levels on a more frequent basis. The disparity is best illustrated in India, where long-term capital gains above ₹1 lakh are taxed at 10% without indexation advantage, while labour income tends to be in much higher progressive slabs (ClearTax, 2025). While historically justified to stimulate investment, such tax structures are increasingly being scrutinised in the context of rising automation.
As technology replaces human labour in sectors ranging from manufacturing to services, it becomes evident that these tax advantages are reinforcing economic inequalities and accelerating the shift from labour to capital-intensive production (International Labour Organization, 2025). In India's case, sectors like logistics, agriculture, and back-office services are already experiencing early automation trends that predominantly affect low-skilled labour (Bansal, 2025).

3.4.5.2. The Automation Justification

As India's economy becomes increasingly automation-driven, the call to tax capital income more equitably gains renewed urgency (Ministry of Finance, 2025). Historically, capital taxation has been resisted due to fears of distorting savings and investments (ClearTax, 2025). However, this rationale is now outdated. In a context where capital increasingly substitutes labour, and capital income accrues disproportionately to the wealthy, light taxation of capital deepens inequality and weakens fiscal sustainability (Larrain, 2025).
India's tax policies have long favoured capital, through corporate tax reductions, startup incentives, and generous depreciation allowances, leading to capital accumulation without corresponding job creation (Government of India, 2025). The result is a pattern of 'jobless growth'("Near Jobless Growth in India An", 2025). With labour's share in GDP shrinking, over-reliance on taxing wages is unsustainable (Jitendra, 2025). A more balanced approach, taxing capital income such as capital gains (Capital Gains Definition, 2025), dividends (Dividend, 2025), and speculative profits (Income & Taxed, 2025), would align with the principles of both vertical and horizontal equity (Duclos, 2008), while supporting revenue generation for public investments in education, skilling, and infrastructure.
Structural loopholes, like exemptions under Sections 54 and 54F (Ernst & Young, 2025) and tax-free agricultural income (Gupta, 2025), allow high-net-worth individuals to shield capital gains from taxation. Addressing these gaps is key to restoring fairness in the system. Empirical data confirms that capital income is more unequally distributed than labour income, making it imperative for capital to bear a fairer share of the tax burden (Report No 18 of 2019, 2025).

3.4.5.3. Policy Pathways for Fair Capital Income Taxation

To address the challenges posed by the increasing dominance of capital income, particularly from automation, the following policy measures are proposed:

a) Progressive Capital Gains Taxation: Instituting a progressive tax regime on capital gains will guarantee that individuals who are the most beneficiaries of capital income will pay a more equitable portion of capital gains to public coffers. It would entail steep tax rates on large gains in capital, especially those coming from industries most dependent on automation (Progressive Taxation Introduction, 2018).
b) Sector-Specific Surcharges: Implementing surcharges on capital-intensive sectors that have widely embraced automation can assist in redistributing the economic benefits of such technologies. The extra revenue collected can be used to fund social welfare programs and programs for assisting displaced workers (Government of India, 2025).
c) Taxation of Retained Corporate Earnings: Corporate houses tend to withhold profits rather than paying them as dividends, thereby postponing their tax obligations. Having tighter provisions of Minimum Alternate Tax (MAT) or implementing a withholding tax on undistributed profits will ensure that corporations give something to the tax base, even when undistributed profits are not involved (Government of India, 2025).
d) Reintroduction of Wealth Tax: Resurrecting a wealth tax on individuals and entities that have accumulated great wealth through automation and capital investments can help alleviate the increasing wealth inequality. This action would need to be carefully crafted to avoid capital flight and enforcement (Vanvari & TA, 2025).
e) Automation Levies: Taking a cue from environmental taxation, an automation tax can be imposed upon firms whose investments in automation result in huge job losses. The revenue generated can be used for reskilling initiatives and social security programs to help impacted workers (United Nations Development Programme, 2025).

f) Allocation of Capital Tax Revenues to Welfare Programs: Holding a share of the revenue from capital income taxes to augment social security measures like the Pradhan Mantri Shram Yogi Maandhan (PM-SYM) and the Employees' State Insurance (ESI) scheme can act as a safeguard against workers who are affected by automation (Ernst & Young, 2025).

Achieving substantial reform during the age of automation demands a harmonised tax policy, one that encourages innovation as well as fosters social balance (Sinha, 2024). With the rise of automation replacing human workers, retooling the tax system to more equally treat capital and labour incomes is vital to sustainable and equitable development (Mitha, 2025). Internationally, tax regimes are now starting to close this gap. The U.S., for instance, imposed a 3.8% surtax on net investment income (Section 1411) for high-income individuals (What is the 3 8 Medicare, 2025). But it is applied narrowly and does not reflect the entire payroll burden on labour, which can be as high as 15.3% (How Do You Navigate Payroll Compliance, 2025).

Finally, any tax reform will need to align the effective rates and timing of capital income taxation with those of labour. This is crucial not just for revenue stability but also for curing distortionary incentives, facilitating workforce transitions, and ensuring equity in an economy increasingly driven by technology (Joseph E Stiglitz, 2025).

3.5. Additional Policy Options

Despite the robust arguments for reforming the payroll and income tax systems to address the rise of automation, the article acknowledges that tax policy alone is insufficient to remedy the full spectrum of challenges posed by the automation revolution. Although the proposed reforms may increase tax revenues and reduce economic inequality, they cannot fully mitigate job displacement, the contraction of labour demand, or the broader social and welfare ramifications of technological disruption (Jennie E Brand, 2025). Accordingly, the article calls for a broader set of complementary policy tools, particularly in the realms of human capital investment, social protection systems, and innovation policy.

3.5.1. Investing in Human Capital

A critical non-tax policy recommendation centres on enhancing public investment in human capital (Suri, 2025), particularly through education, workforce training, and skills development. This is essential for equipping the labour force to meet the demands of an automation-driven economy (Advaithi, 2025). Mechanisms such as expanding federal education grants (Detailed Demand for Grants for Department, 2025), lowering education loan interest rates (Government of India, 2025), and offering targeted tax incentives for employer-led training (International Labour Organization, 2025) can play a pivotal role. Although such measures may not entirely prevent labour displacement, they significantly increase the chances of successful worker transitions into automation-resilient sectors (Russo, 2025). Contemporarily, wage dynamics are increasingly influenced by both technological shifts and the distribution of skills and education, making a well-educated workforce crucial for adapting to future labour market demands (Robert G Valletta, 2025).

3.5.2. Strengthening Social Safety Nets

To mitigate the disruptions posed by automation, another essential strategy involves bolstering social safety nets (Carnegie Endowment for International Peace, 2025). The proposed interventions include expanding unemployment benefits, taking an example of the US (Shafer, 2025), implementing wage subsidies and insurance (R M Blank, 2025), and funding on-the-job training for high-demand industries (7 Innovative Ways to Unlock Funding, 2025). Enhancing support for Social Security, Medicare, and public infrastructure further strengthens this safety buffer (Press Information Bureau, 2025). Additionally, tax-based instruments like the Earned Income Tax Credit (EITC) (Earned Income Tax Credit EITC, 2025) or a universal refundable wage tax credit (Credits, 2025) are advocated to directly support low-income workers. These measures offer financial cushioning without inducing labor market distortions often associated with blanket automation taxes, and they ensure targeted, effective support for vulnerable populations during periods of economic transition (Macroeconomic Policy and Poverty Reduction, 2025).

3.5.3. Critique of Universal Basic Income (UBI)

Although universal basic income (UBI) (Ernst & Young, 2025) has emerged as a popular proposal in automation policy discourse, the article critiques its practicality and broader implications. While UBI promises financial stability during job losses (Universal Basic Income and the Future, 2025), it raises serious concerns, including unsustainable fiscal costs, potential disincentives to work, especially among higher earners, inequitable benefit distribution, and the inability to replace the psychological and social benefits derived from employment (Cs sz Csongor, 2025). These drawbacks render UBI both politically and economically unfeasible in the current context (Universal Basic Income and the Future, 2025). As an alternative, the article favours expanding targeted social programs that directly support those most impacted by automation (Ernst & Young, 2025), ensuring a more equitable and efficient use of public resources.

3.5.4. Enhancing Innovation Policy

Lastly, the article underscores the necessity of sustaining innovation to realise the broad societal benefits of technological progress (IMD Business School, 2025). While automation can displace jobs, technologies like AI and robotics also hold transformative potential across sectors such as healthcare, transportation, and criminal justice (Rashid & Kausik, 2025). To maximise these benefits, policies should prioritise increased public investment in R&D (Maikel Pellens et al, 2025), innovation-based prize competitions (Nesta, 2025), the removal of unnecessary regulatory constraints(Brookings Institution, 2025), and financial incentives for entrepreneurs and small businesses committed to inclusive job creation (Maricruz Lacalle-Calderon et al, 2025). These measures aim to offer a dynamic, non-punitive alternative to robot taxes, and they allow for flexible adaptation based on real-time labour market responses, supporting both innovation and social inclusion.

4. Conclusion

While automation and artificial intelligence transform global economies, including India's, the goal is not to tax technology itself, like with a robot tax, but to redesign current economic systems to promote fairness, innovation, and sustainable growth. Instead of punitive levies

that could reduce productivity, a more effective approach involves comprehensive tax reforms, particularly the uniform treatment of capital and labor incomes, which could lessen rising inequalities without hindering technological progress.

As India navigates the uncertainties of automation and its impact on the labour market, it is of utmost importance to adopt fiscal policies that ensure equity and social justice. Through the reform of capital taxation and the fortification of social safety nets, India can ensure that the benefits of technological progress are shared widely, thereby creating a more inclusive and sustainable economic future.

For India, the focus should be on investing in human capital, education, skill development, and social protection to prepare its large workforce for the evolving demands of the labour market. Supportive policies, such as promoting innovation and entrepreneurship, can ensure that automation enhances rather than harms economic and social well-being. Such a comprehensive strategy, grounded in structural tax reform and proactive investment in people, is better equipped to address the dual challenges of economic growth and equity in an increasingly automated world.

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