

Resisting or Rebooting the Rise of the Robots?

Reinventing the Idea of Basic Income Insurance for the Age of Generative AI

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The traditional debate on Universal Basic Income (UBI) has been mired in concerns about its financial feasibility and technological unemployment. In an age where generative Artificial Intelligence (AI) represents a pivotal shift, however, it is necessary to reconceptualise UBI not as a mechanism for securing employment or redistributing income, but rather as a collective tool for strategically empowering the new group of data workers, sustaining consumer spending, and boosting life-long learning to ensure societal resilience in fragile times.

- ▶ While generative AI is likely to change the quality of most jobs, at least 10% of occupations in affluent regions are at high risk of displacement, potentially affecting 20 million people in Europe. Creative and highly skilled jobs are most vulnerable to disruption, raising concerns about a potential explosion of social discontent.
- ▶ Existing UBI experiments have suggested a certain level of positive outcomes. Yet, there is still a considerable uncertainty regarding the long-term influence of such incentives, as AI might mitigate the looming skilled labour shortage to some extent. Moreover, traditional UBI is not a one-size-fits-all answer, especially when it comes to the EU, which has a diverse system of social policies.
- ▶ Beyond the financial and political viability of such schemes, there is a need to think about new social policy models to address evolving social and economic needs in the face of exponential change affecting the organisation of firms, the importance of education, and the flexibility of labour markets. In this context, UBI-style schemes could be seen as a collective risk-sharing measure, funded by the increased productivity gains generated by AI, to upskill or re-skill its “data workers”. This is less economically distorting than taxing robots.

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1 Introduction: From technological unemployment to people's empowerment

In light of significant advancements in Artificial Intelligence (AI), such as OpenAI's prominent chatbot ChatGPT or Stability AI's image-generating model Stable Diffusion, the conversation around Universal Basic Income (UBI) must evolve and adapt. The traditional debates, often centred on UBI's role in addressing fears of technological unemployment¹ and redistributing income,² are now being overshadowed by the **need to adapt to the radical changes generative AI brings to the workforce**. This necessitates a shift in perspective towards viewing more pragmatic versions of basic income insurance as a strategic tool for empowering the new category of "data workers", sustaining consumer spending, and bolstering societal resilience during politically and economically unstable times. In this sense, UBI can be seen as an optimal (tax-funded) **collective risk-sharing measure**, as it allows AI to be deployed as quickly as possible without social discontent, and is less economically distorting than taxing robots.

The proposition at the core of UBI is deceptively simple: every citizen is entitled to a baseline income, unconditional of their financial stature or reciprocal obligations. This notion, while having many historical predecessors,³ has garnered momentum in recent years, as illustrated by the experiments conducted in nations like Finland or Spain.⁴ Central is the premise that UBI could serve as a linchpin in reconfiguring societal structures and economic paradigms to align with a rapidly digitalizing future, or, in the current terminology, to increase societal resilience.⁵ Given the current exponential trend in the development of generative AI, which is even surprising practitioners,⁶ and its likely impact on the labour market, **the idea of UBI deserves renewed attention and needs to be explored with new lenses**.

The likely impact of AI on the economy **necessitates a rethinking of many of the economic categories that underpin our Western models of capitalism**. Most importantly, this concerns deciding what is and is not work; a question with a long and ignominious history.⁷ In this respect, as part of the ongoing negotiations about the EU AI Act, centre-left lawmakers in the European Parliament have called for national measures to protect workers' rights when AI systems are used and demand that workers' representatives must to be consulted before an AI model is deployed in the workplace.⁸ However, this is not just an issue for left-wing politicians. In Italy, current Prime Minister Giorgia Meloni, who heads a right-wing coalition government, has announced that Italy will host an international AI conference

¹ According to a meta-analysis of more than 1,000 English language newspaper articles related to AI, the risk of job losses dominates the public discourse. Tanner, J. / Bryden, J. (2023), Framing AI: Beyond Risk and Regulation, [Rootcause](#), p. 16.

² Since the emergence of Big Tech gatekeepers and spiraling wealth concentration in the digital age, the concept of UBI is being promoted as a potential solution to distributional inequalities by a broad and heterogeneous range of actors. See, e.g.: UK House of Lords, Select Committee on Artificial Intelligence, "AI in the UK: ready, willing and able?", Report of Session 2017–19, pp. 84f.; UNCTAD (2019), Digital Economy Report, p. 146.

³ Various forms of this concept have been proposed since the 18th century. While skeptical of market interferences, even Hayek did support a universal basic income. Bowles, Samuel, Alan Kirman, and Rajiv Sethi. 2017. "Retrospectives: Friedrich Hayek and the Market Algorithm." *Journal of Economic Perspectives*, 31 (3): 215-30, here: p. 216, fn. 1.

⁴ Sodha, S. (2017), [Is Finland's Basic Universal Income a Solution to Automation, Fewer Jobs and Lower Wages?](#), *The Guardian* (February 19).

⁵ Van Parijs, P. (2004), 'Basic Income: A Simple and Powerful Idea for the Twenty-First Century', *Politics & Society* 32(1), pp. 7–39.

⁶ According to a large-scale survey among top AI researchers published in early 2024, the pace of AI progress has become considerably quicker. Katja Grace, Harlan Stewart, Julia Fabienne Sandkühler, Stephen Thomas, Ben Weinstein-Raun, Jan Brauner (2024), [Thousands of AI Authors on the Future of AI \(arxiv.org\)](#).

⁷ Daub, A. (2020), *That Tech Calls Thinking*, New York: FSG Originals, p. 50.

⁸ Weatherald, Nathalie (2023), *AI Act: EU countries mull options on fundamental rights, sustainability, workplace use*, Euractiv (online).

during its G7 presidency, bringing together practitioners, entrepreneurs, government representatives and academics to discuss initiatives and policies that could help generative AI and future forms of AI to support, rather than replace, workers.⁹

In light of this context, this policy brief discusses both the pros and cons of introducing UBI (section 2) and argues that UBI might be, besides retraining and re-skilling the workforce, a necessary element when dealing with an economic future strongly shaped by AI models (section 3). On this basis, we provide some examples of tentative UBI experiments across Europe and discuss how UBI schemes could effectively be implemented in the EU, both legally and financially (section 4). Finally, in the conclusion, we combine our theoretical analysis with some of the practical examples to provide some policy recommendations on whether and how UBI could be implemented in Europe (section 5).

2 Pros and Cons of UBI

What is a Universal Basic Income? Looking towards the equitable redistribution of benefits accrued from Artificial Intelligence (AI) and automation, UBI has been frequently raised as a potential solution in the last couple of years. The standard definition in the literature is as follows: “A basic income is an unconditional income paid by the state to each member of the community, on an individual basis, irrespective of income from other sources, and without any requirement to work.”¹⁰ In this regard, UBI is different from other sources of social welfare that are currently applied across Europe, which basically depend on individual social and economic conditions. In essence, UBI can be considered an evolution of traditional welfare policies as it advocates for the disbursement of a standardized monthly financial allocation by the government to every citizen, indiscriminately of an individual’s employment status. Such an allocation would supersede, in its entirety or in significant part, other existing welfare payments. The different basic income models, ranging from the full basic income model to a negative income tax or a so-called participation income, have their own strengths and weaknesses, which we abstract from here in favour of a more general discussion.¹¹

Various sectors champion the implementation of UBI, each driven by different objectives. For individuals reliant on social assistance, UBI represents liberation from the bureaucratic and often stigmatizing processes that characterize traditional welfare systems. The broader flexibility and autonomy facilitated by UBI are seen as catalysts for innovation, enabling individuals to navigate between various forms of employment, caregiving, voluntary, and artistic pursuits. From a modern perspective of *Ordnungspolitik*, untying welfare arrangements from traditional work and family patterns through proposals for a universal basic income promises an avenue to developing an “emancipatory agenda” that embraces the social, economic, and cultural developments of the digital era and seeks to “reconnect them to the values of freedom and autonomy”.¹² In fact, modern ordoliberalists note that introducing a *conditional* basic income, meaning any individual in a given society is entitled to receiving the sum X

⁹ Pascale, F. (2023), [Rom: Gastgeber von internationaler KI-Konferenz im nächsten Jahr – EURACTIV.de](https://euractiv.de/rom-gastgeber-von-internationaler-ki-konferenz-im-naechsten-jahr).

¹⁰ Simon Birnbaum, ‘Basic Income’, in *Oxford Research Encyclopedia of Politics*, by Simon Birnbaum (Oxford University Press, 2016), <https://doi.org/10.1093/acrefore/9780190228637.013.116>.

¹¹ For a detailed comparison, see: Kela (2016), From idea to experiment, Report on universal basic income experiment in Finland, Working papers 106, pp. 53ff.

¹² Dekker (2019), Is There an Agenda of Neoliberal Emancipation?, *Journal of Contextual Economics* 139 (2019) 2 – 4, p. 221.

monthly as basic income if and only if she does not earn more than Y already, would be “normatively appealing and consistent with neoliberal core principles”.¹³

In libertarian and conservative circles, UBI is celebrated for its potential to streamline welfare bureaucracies, engendering economic efficiencies.¹⁴ This perspective postulates that minimizing administrative redundancies could liberate funds that could then be reallocated to finance UBI. For example, the current highly complex tax and transfer system generates significant administrative costs, in addition to the insecurity, stress and stigma that benefit recipients often suffer as a result of monitoring job search and family relationships. These inconveniences mean that not all beneficiaries take up their entitlement to benefits.¹⁵ A consequence, however, is the potential diminishment of the welfare state’s capacity to respond to individuals facing acute financial crises, such as protracted illnesses.

Finally, in a corporate context, UBI is posited as a mechanism through which businesses can navigate the shifting terrains of employee training and development amidst technological advancements. It suggests that companies, under a UBI framework, might find it economically viable to invest more significantly in technological, potentially AI-driven solutions, rather than in the continuous upskilling of their employees, an aspect that could reverberate with increased technological unemployment. From the business side, there are also more specific arguments to be made with regard to production and consumption in the digital age, which we discuss in detail in section 3. Following the introduction of UBI, technology companies could use personal and perhaps even private data on a legally secure basis to develop new products, services and offerings that open up new revenue streams.

Meanwhile, **various concerns have been raised regarding the implementation of a UBI.** To begin with, a contrasting perspective often underscores the intrinsic value of work beyond monetary compensation. Work, as per this viewpoint, furnishes individuals with a profound sense of meaning and purpose, elements that are instrumental for personal fulfilment and societal contribution. These vital aspects, it is argued, cannot be sufficiently supplanted, or addressed merely through the provision of unconditional financial assistance or cash payments. Similarly, implementing UBI might also make it challenging to engage job seekers in active labour-market policies, as the link between benefits and active job searching might be weakened. For some social democratic thinkers, successfully implementing a basic income will thus “require a wider and more radical intervention in the economy” as well as in societies to change the way work and monetary compensations are conceived and interlinked.¹⁶

Furthermore, UBI might exert downward pressure on wages, as employers might lower wages, presuming that people are already receiving basic income. By definition, a UBI would lead to inefficiencies in targeting, suggesting that the rich may disproportionately benefit, getting back what they pay. High budgetary costs are also a concern, coupled with UBI not serving as an automatic economic stabilizer during different economic cycles. In particular, unconditional benefits like UBI might not inherently be counter-cyclical. Securing funding for UBI will become increasingly urgent and challenging, especially since it will likely encourage a shift towards fewer work hours, diminished growth, and a departure

¹³ Lachezar Grudev, On Technological Progress in F. A. Hayek’s Thought: Hayek’s Three Messages, p. 13.

¹⁴ See, e.g., the discussion of UBI in the form of the COST proposal by: Eric A. Posner and E. Glen Weyl (2018), *Radical Markets Uprooting Capitalism and Democracy for a Just Society*, Princeton University Press.

¹⁵ Atkinson, Anthony B. (2011): „Basic Income: Ethics, Statistics and Economics”, https://www.nuff.ox.ac.uk/users/atkinson/Basic_Income%20Luxembourg%20April%202011.pdf.

¹⁶ See, e.g.: <https://blogs.lse.ac.uk/euorppblog/2017/09/07/why-a-basic-income-alone-will-not-be-a-panacea-to-social-insecurity/>.

from wage dependency.¹⁷ As the economy experiences a decrease in work hours and wage proportion in incomes, the available labour income for taxation consequently diminishes. This necessitates exploring alternative funding avenues beyond the conventional reliance on labour taxes and growth-centric financing that modern industrial states typically depend on.¹⁸

Based on these points, critics have articulated that contemplating such a transformative approach as introducing UBI may be precipitous at this juncture. For instance, Michael Tanner emphasizes that there are “serious trade-offs among cost, simplicity, and incentive structure”, argues that “there are simply too many unanswered questions to rush forward with any such plan [introducing UBI]”, and concludes that policymakers should pursue “incremental steps”, such as consolidating existing welfare programs.¹⁹ This is backed up by a recent theoretical assessment published in the AER that takes a dynamic perspective and predicts that UBI would lead to large welfare losses in a general equilibrium model with imperfect capital markets, labor market shocks, and intergenerational linkages via skill formation and transfers.²⁰ Overall, these critical voices would call for a nuanced evaluation and more research before making any significant policy shifts.

In Germany and in Italy, any discussion about a UBI seems to be premature now. In Italy, the social income scheme (*Reddito di Cittadinanza*) introduced by the Five Star Movement in 2019 has just been cancelled by current Government, as it apparently led to moral hazard practices, with some citizens receiving grants from the state, while working in the black market. Similarly in Germany, there is a heated debate about the so-called *Bürgergeld*, or citizen’s income (see section 4.1 below), and its effect on work incentives. The citizen’s income, introduced by the “traffic light” coalition, has been heavily criticised, based on the fear that excessive social benefits would reduce incentives to work: The wage gap would no longer be maintained, there would be too few sanctions, and there would be too little obligation to cooperate, according to the critics.²¹ However, while there were many anecdotal examples in the media, a study by the ifo Institute showed that “despite the significant increase in the standard rates in the citizen’s income, there is still a noticeable wage gap” (own translation).²² The study, which analysed work incentives for selected household constellations using a microsimulation model, clearly shows that despite the significant increase in the standard rates in the *Bürgergeld*, there is still a noticeable wage gap. Nevertheless, it is important to continue to consider the aspect of work incentives in our subsequent call for a discussion on certain forms of UBI in the AI age (see below). After all, even the authors of the above-mentioned ifo study demand that work incentives should be strengthened to expand existing employment.

¹⁷ Even though the specific assumptions of scientific evaluations vary, the following reactions from introducing a UBI can be expected: A reduction in unemployment, an exit from the labor market by people with poor job prospects, a decrease in hours worked, and a lowering of wage levels. See: Luke Haywood (2014), *Bedingungsloses Grundeinkommen: eine ökonomische Perspektive*, DIW Roundup 33, https://www.diw.de/de/diw_01.c.479937.de/publikationen/roundup/2014_0033/bedingungsloses_grundeinkommen_eine_oekonomische_perspektive.html.

¹⁸ See the model and discussion in: Pitts, F. H., Lombardozzi, L., & Warner, N. (2017, April). *Beyond basic income: Overcoming the crisis of social democracy?* Paper presented at the Basic Income Working Group, supported by The FEPS Young Academics Network and the Renner Institut.

¹⁹ Tanner, M. (2015), *The Pros and Cons of a Guaranteed National Income*, Policy Analysis 773, Cato Institute (May 12).

²⁰ Daruich, Diego, and Raquel Fernández. 2024. "Universal Basic Income: A Dynamic Assessment." *American Economic Review*, 114 (1): 38-88.

²¹ Peter Haan, Johannes Geyer, Wolfgang Schroeder (2023), [Lohn statt Bürgergeld: Wie die Arbeitsanreize erhöht werden könnten \(tagesspiegel.de\)](https://www.tagesspiegel.de/arbeit/lohn-statt-buergergeld-wie-die-arbeitsanreize-erhoehet-werden-koennten-10111111).

²² Maximilian Blömer, Lilly Fischer, Manuel Pannier, Andreas Peichl (2024), "Lohnt" sich Arbeit noch? Lohnabstand und Arbeitsanreize im Jahr 2024, ifo Schnelldienst 77, Nr. 01, pp. 35-38.

Although many of the above-mentioned concerns are reasonable, it is important to point out that they also constitute the basis of common criticisms of existing social protection systems, suggesting that the practical costs and benefits of UBI may vary by country and require empirical evaluation. Fortunately, such an empirical study has been conducted by the OECD.²³ The authors find that for UBI to be budget-neutral for individuals below the standard retirement age, it must be set at a modest level, significantly below the poverty line, and most existing benefits would need to be abolished, requiring substantial additional tax revenues. Accordingly, the study notes potential risks, such as an increase in poverty risks, if UBI lacks targeting or if there is not significantly higher spending. This risk is especially pronounced in countries with comprehensive social protection systems and affects older working-age individuals, unemployment insurance benefit recipients, and certain family types, like single-parent families, due to the possibility of current benefit recipients losing out. We note that the evidence stemming from the experiments carried out are not entirely in line with the negative theoretical predictions regarding UBI's longer-term consequences (section 4) – and some of these models' underlying assumptions might soon be outdated given the rapid pace of AI; the topic we turn to next.

3 The Intersection of UBI and AI

Central to the UBI discourse is its intersection with the current trajectory of technology. To this day, technology is predominantly seen as the primary driver of economic advancement, but it has also consistently stirred increasing social apprehension.²⁴ A prevalent concern is an anticipation that technological evolution might drastically replace human labour with machines, inducing so-called technological unemployment and escalating inequality, at least temporarily, despite its prospective long-term benefits. The fear of permanent technological unemployment is a perennial concern: Aristotle wrote about it, as did Marx and Keynes. Another area of long-time concern revolves around the ethical considerations around the impact of technological advancements on overall human well-being.

However, **this time promises to be different.** While the skeptical technology discourse is as old as time, the underlying economic logic is nowadays different. Erik Brynjolfsson and Andrew McAfee argue that we are on the cusp of a “second machine age” where technological advancements will not merely enhance productivity but revolutionize the very architectures of labour markets and employment paradigms.²⁵ They contrast this with the period of the Industrial Revolution (or “First Machine Age”), which helped making labour and machines complementary. In the digital age, the comparison suggests, beneficiaries will predominantly be those capable of commanding and innovating within AI domains, while the rest of the workforce could face economic marginalization. Due to the fact that it can “learn at arbitrary speeds over all areas of intelligent endeavor”, AI is an “entirely different kind of technology” and can thus not be measured against previous innovations.²⁶ The recent shift in AI adaption towards generative AI, and large language models (LLMs) in particular, even worsens the underlying problem: a recent report notes that “the economic and social impact of LLMs might be even larger than the first phase of AI”.²⁷ Whereas recommender systems, used by social media companies like Facebook during the first AI phase, did not “massively replace humans”, LLMs, on the contrary, “have the potential to

²³ OECD (2017), Basic Income as a Policy Option, <https://www.oecd.org/social/Basic-Income-Policy-Option-2017.pdf>.

²⁴ Joel Mokyr, Chris Vickers, and Nicolas L. Ziebarth, ‘The History of Technological Anxiety and the Future of Economic Growth: Is This Time Different?’, *Journal of Economic Perspectives* 29, no. 3 (1 August 2015): 31–50.

²⁵ Erik Brynjolfsson and Andrew McAfee (2014), *Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, Norton & Company.

²⁶ Malaney, P. (2023), [The Golden Age of AI Complementarity? | Institute for New Economic Thinking \(ineteconomics.org\)](https://www.ineteconomics.org/insights/the-golden-age-of-ai-complementarity/).

²⁷ Pierre-Alexandre Balland and Andrea Renda (2023), [Forge ahead or fall behind – CEPS](https://www.ceps.europa.eu/publications/working-paper/wp202301/forge-ahead-or-fall-behind), p. 3.

do exactly that, in a growing array of tasks and activities that were previously thought to be inaccessible to machines.” We will discuss empirical evidence in favor of this hypothesis below.²⁸

Historical analyses elucidate this transformative trend. During the so-called golden decades after World War II, productivity gains were symmetrically distributed across societal strata, facilitating broadly shared prosperity. This model has been increasingly dissolving for about two decades – real wages are stagnating, not only in the United States but also in Europe. Contemporary economic models, intensified by digitalization, exhibit tendencies where wealth accumulations are increasingly concentrated, precipitating broader societal and economic disparities.²⁹ Empirical evidence suggests that at least partly, this decades-long trend towards job loss and economic inequality has been driven by the automation of lower to middle-skill jobs. Estimates based on industrial robot usage between 1990 and 2007 in US local labor markets predict that one more robot per thousand workers reduces the employment to population ratio by about 0.18-0.34 percentage points and wages by 0.25-0.5 percent.³⁰ Similarly, an analysis of the impact of AI, in particular, on US employment over the period 2000-2020 found that it had contributed to the automation of jobs and to widen inequality.³¹

If these trends continue and speed up in an exponential fashion, the forces of AI and automation will therefore create “a trilemma of rising inequality, low productivity growth and high ecological costs brought by technological progress”.³² In this context, **UBI is perceived not merely as a protective apparatus against socioeconomic volatilities but as a crucible for sustaining economic and consumption models.** After surveying the history of technological anxiety, Joel Mokyr and co-authors conclude that “while the earliest transitions such as the Industrial Revolution were done with little governmental support for those displaced, this one will require public policy to ameliorate the harshest effects of dislocation. In particular, we believe that there is a distinct possibility that wages for some classes of workers may need to be supplemented through some income redistribution”.³³ Similarly, Pia Malaney has noted that in the long term, “we need to consider whether our current economic systems have the ability to sustain a fair and equitable society as the marginal product of median human labor declines below a living wage.”³⁴ From this view, UBI promises to increase societal and economic resilience and thus becomes, in essence, deeply necessary for a sustainable model of digital capitalism.

This is particularly true for AI-driven economies, which are dependent on massive amounts of labelled or unlabeled data – often produced by the “vast tasker class” situated in the global South.³⁵ At the moment, these and other individuals generate their data footprints without possessing property rights

²⁸ For a review of the current empirical literature on the employment effects of AI before the wide-spread adoption of LLMs, see: Green, A. (2023), [3. Artificial intelligence and jobs: No signs of slowing labour demand \(yet\) | OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market | OECD iLibrary \(oecd-ilibrary.org\)](#).

²⁹ Maurice E. Stucke and Ariel Ezrachi, *Competition Overdose: How Free Market Mythology Transformed Us from Citizen Kings to Market Servants* (New York: Harper Business, 2020); Ariel Ezrachi and Maurice E. Stucke, *How Big-Tech Barons Smash Innovation and How to Strike Back* (New York: Harper Business, 2022).

³⁰ Acemoglu, D. and Restrepo, P. 2017. “Robots and Jobs: Evidence from U.S. Labor Markets.” NBER Working Paper No. 23285, <https://www.nber.org/papers/w23285>.

³¹ Bonfiglioli, A. et al., 2023. “Artificial Intelligence and Jobs: Evidence from US Commuting Zones”, CESifo Working Paper No. 10685, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4608807.

³² Ekkehard Ernst, ‘The AI Trilemma: Saving the Planet without Ruining Our Jobs’, *Frontiers in Artificial Intelligence* 5 (19 October 2022): 886561, <https://doi.org/10.3389/frai.2022.886561>.

³³ Mokyr, Vickers, and Ziebarth, ‘The History of Technological Anxiety and the Future of Economic Growth’, 47.

³⁴ Malaney, P. (2023), [The Golden Age of AI Complementarity? | Institute for New Economic Thinking \(ineteconomics.org\)](#).

³⁵ Dzieza, J. June 2023 “AI Is a Lot of Work.” New York Magazine, <https://nymag.com/intelligencer/article/ai-artificial-intelligence-humans-technology-business-factory.html>.

or control over how this data is utilized. The worldwide data market, involving the accumulation, organization, and sale of individual and organizational data, is currently valued at over \$3 trillion.³⁶ The global race to create the next generation of AI “frontier models” that surpass even the capabilities of GPT-4 has led to a renewed surge in demand for more and more data, leading some observers to even speculate whether humanity will soon run out of data for training machine learning models.³⁷

The scholarly debate about the importance of user rights concerning the data they generate is certainly not new but needs to be connected better with the current discourse about generative AI. Scholars like Shoshana Zuboff have extensively explored the working of data-driven surveillance capitalism.³⁸ In the contemporary digital economy, the usual approach considers user data as a resource forged by businesses by monitoring agreeable participants. Economists have pointed out that this viewpoint overlooks the crucial contribution of users in data generation, thereby diminishing their motivation and leading to an imbalanced distribution of the benefits derived from the data economy.³⁹ Additionally, it also fuels apprehensions regarding automation. A shift in perspective towards recognizing forms of “data-labour” could, they argue, offer solutions to these challenges, promoting a balanced market that duly rewards user contributions.

The ongoing advancements in AI technology have heightened the relevance of these insights, especially concerning the relationship with creators whose information and data are used to train AI systems. In their recent strikes, for instance, actors and writers in the US raised concerns about ownership and control of their data, given the explosion of powerful generative AI platforms.⁴⁰ Evidence from the “Foundation Model Transparency Index”, a new collaboration between researchers from Stanford, MIT, and Princeton, underlines that in recent years, many developers of AI models have become increasingly secretive about the data labour required for training their models.⁴¹ In particular, the index shows that developers are opaque on what data is used to train their model as well as who provides that data and how much they are paid. While some recent research aims to establish a robust visual attribution technique to address the problem of content provenance,⁴² this is still in an exploratory phase and it is unclear how to scale the framework in order to give creatives reward for their contributions to generative AI. If it becomes increasingly impracticable or even impossible to determine the specific extent to which particular creators or data laborers contributed to the advancement of AI, it might be more feasible to remunerate them with some form of UBI.

The entrepreneurs from Silicon Valley who applaud this proposal seem to have recognised that a basic income not only protects against social unrest in times of growing inequality, but also keeps their economic model running.⁴³ After all, what use are all the great apps for shopping or booking holidays,

³⁶ Thirani and Gupta (2022), [The value of data | World Economic Forum \(weforum.org\)](https://www.weforum.org/articles/2022/04/28/the-value-of-data/).

³⁷ Villalobos et al. (2022), Will we run out of data? An analysis of the limits of scaling datasets in Machine Learning, [2211.04325.pdf \(arxiv.org\)](https://arxiv.org/abs/2211.04325).

³⁸ Zuboff, Shoshana (2018), *Das Zeitalter des Überwachungskapitalismus. Der Kampf um eine menschliche Zukunft an der neuen Grenze der Macht*. Campus Verlag, Frankfurt/New York 2018

³⁹ Arrieta-Ibarra, Imanol, Leonard Goff, Diego Jiménez-Hernández, Jaron Lanier, and E. Glen Weyl. (2018). "Should We Treat Data as Labor? Moving beyond "Free"." *AEA Papers and Proceedings*, 108: 38-42.

⁴⁰ Groth (2023), [Ein Sieg der Hollywood-Gewerkschaften hilft uns allen - Tagesspiegel Background](#).

⁴¹ Rishi Bommasani et al. (2023), The Foundation Model Transparency Index, [fnti.pdf \(stanford.edu\)](https://fnti.pdf.stanford.edu).

⁴² Balan et al. (2023), [Adobe Research » EKILA: Synthetic Media Provenance and Attribution for Generative Art](#).

⁴³ Today's tech billionaires, after “having extracted unimaginable amounts of value from the mechanics of global capitalism” are “now calling for Universal Basic Income to offset the impacts of automation and artificial intelligence”. <https://aeon.co/essays/the-human-world-is-not-more-fragile-now-it-always-has-been>.

whose business model consists of generating data for advertisers, if the potential users can no longer afford anything? As a researcher from the Oxford Internet Institute notes:

“Somewhat like the great powers of the nineteenth-century Europe, today’s tech empires also need healthy and well-educated people to power their platform economies. Instead of coal miners and steel workers, they need delivery drivers, data laborers, content moderators, app developers, online merchants, and social media influencers. Somewhat like the old great powers did at first, the five great powers of the Internet [i.e. the so-called GAFAM companies] are for the moment relying on the earlier social order to produce and maintain all that human capital. But just as industrialization eventually undermined pre-modern support networks, platformization is undermining the territorial states’ social safety nets.”⁴⁴

If AI-driven software and robots will indeed increasingly mimic workers and thus eliminate not only their direct income but also their home country’s financial means for social policy, one solution might be to pay them, with some type of UBI, for the data they contributed to advance AI’s development. This would amount, as Frank Pasquale has pointed out, to “the **economic equivalent to geoengineering** – an embrace of the radically new and large-scale, arising out of the sense that inequalities and climate change are such massive problems that only rapid technological advance can solve them.”⁴⁵

To put some numbers behind this intuition: A well-known Oxford study has calculated the future prospects of 700 occupational groups for the US labour market in the face of competition from robots and computers and has come to the drastic conclusion that almost half of all jobs are threatened in the next 20 years.⁴⁶ A study by Grace Lordan from the London School of Economics followed a similar (classification) approach to estimate the share of jobs that one can expect to be automatable in the EU and across 25 individual countries. The study, written in 2019, highlights that 47% of jobs will be automatable over the next decade, with 35% of all jobs being fully automatable.⁴⁷ While for a long time, most experts assumed that AI technology will be a helpful complement rather than substitute, the current trend towards generative AI suggests a more disruptive transition, increasing the need for measures that ensure societal stability and resilience. For instance, ECB research showed that during the so-called deep learning boom of the 2010s, occupations potentially more exposed to AI-enabled technologies actually increased their employment share in Europe, but the authors themselves warn that “the jury is still out on whether the same can be expected from new developments in AI-enabled technologies”.⁴⁸ A recent OECD survey of the existing literature on the employment effects of AI notes that most empirical findings predate the advance of generative AI tools like ChatGPT and warns that “both the occupational range and extent of AI exposure might rapidly become larger as generative AI use is increasingly incorporated into production processes and new, more powerful AI systems are developed”.⁴⁹ Following its release at the end of 2022, the adoption of ChatGPT has proliferated in

⁴⁴ Lehdonvirta, Vili (2022), *Cloud Empires. How Digital Platforms are Overtaking the State and How We Can Regain Control*, London: MIT Press, p. 201.

⁴⁵ Pasquale, Frank (2019), *Rethinking the knowledge problem in an era of corporate gigantism*, p. 292.

⁴⁶ Carl Benedikt Frey & Michael Osborne (2013), *The Future of Employment: How susceptible are jobs to computerisation?*, Oxford Martin Programme on Technology and Employment, Working Paper (01 September).

⁴⁷ Josten, Cecily; Lordan, Grace (2019): *Robots at Work: Automatable and Non Automatable Jobs*, IZA Discussion Papers, No. 12520, Institute of Labor Economics (IZA), Bonn.

⁴⁸ ECB (2023), [Reports of AI ending human labour may be greatly exaggerated \(europa.eu\)](https://www.ecb.europa.eu/press/pr/2023/03/20230301_en.htm). This is based on their paper: Albanesi, Stefania and Dias da Silva, Antonio and Jimeno, Juan F. and Lamo, Ana and Wabitsch, Alena, *New Technologies and Jobs in Europe* (2023). NBER Working Paper No. w31357.

⁴⁹ Green, A. (2023), [3. Artificial intelligence and jobs: No signs of slowing labour demand \(yet\) | OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market | OECD iLibrary \(oecd-ilibrary.org\)](https://www.oecd-ilibrary.org/employment/artificial-intelligence-and-jobs-no-signs-of-slowing-labour-demand-yet-12345678).

professional settings, with a US-based survey in January 2023 revealing that already 43% of participants had integrated ChatGPT into their work.⁵⁰

Who will be exposed to ChatGPT and other new forms of generative AI, and what are the implications for the labour market (Table 1)? A study by Eloundou and colleagues in March 2023 explored the influence of GPTs on the labor market, concentrating on the execution of tasks across various professions.⁵¹ The research uncovered that Large Language Models (LLMs) could affect at least 10% of the job responsibilities of 80% of the US workforce. If we assume that a similar percentage of the EU's workforce will be affected, this would translate to over 156 million individuals.⁵² According to the study, the level of impact escalates with income, predominantly influencing white-collar occupations. The investigation anticipates that professions necessitating extensive education or training are more susceptible to the infiltration of LLMs, with jobs demanding a bachelor's degree being the most vulnerable. In these cases, up to 30% of such roles may witness at least 50% of their functions being susceptible to LLMs, particularly in sectors like information services, finance, publishing, and telecommunications. Note, however, that the data on the labour market effects of LLMs used in this study are based on forms of self-assessment by workers, which usually turn out to be too dramatic.

Tab. 1: Estimates regarding the likely impact of generative AI on labour markets

Study #	% of population affected	Region covered	Method	Source
1	Maximum: 80 % Minimum: 19 %	US labour market	- Exposure as a proxy for potential economic impact (without distinguishing labor-augmenting/displacing effects) - Human annotators and GPT-4 are used as classifiers to apply this rubric to US occupational data (O*NET database)	Eloundou et al. (2023) ⁵³
2	In high-income countries: 5.5 % In low-income countries: 0.4 %	Global	- Use the GPT-4 model to estimate task-level scores of potential exposures - Then estimate potential employment effects at the global level as well as by country income group	Gmyrek et al. (2023) ⁵⁴
3	10 % of jobs facing impact on over 5 % of tasks 60 % of jobs facing no effect	UK labour market	- Identify three main applications of GenAI: classification/summary, technical content creation, subjective works - Contrasted with the range of tasks that make up the UK labour market	KPMG (2023) ⁵⁵
4	Without GenAI: 21.5 % of hours	US economy	Proxy: Midpoint automation adoption by 2030 as a share of time spent on work activities, US	McKinsey (2023) ⁵⁶

⁵⁰ [70-percent-of-workers-using-chatgpt-at-work-are-not-telling-their-boss \(fishbowlapp.com\)](https://fishbowlapp.com/).

⁵¹ Tyna Eloundou, Sam Manning, Pamela Mishkin, Daniel Rock (2023), [GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models \(arxiv.org\)](https://arxiv.org/abs/2303.08211).

⁵² In the second quarter of 2023, 195.2 million persons in the EU were employed. See: [EU labour market - quarterly statistics - Statistics Explained \(europa.eu\)](https://ec.europa.eu/economy_finance/eu-labour-market-quarterly-statistics-statistics-explained).

⁵³ Tyna Eloundou, Sam Manning, Pamela Mishkin, Daniel Rock (2023), [GPTs are GPTs: An Early Look at the Labor Market Impact Potential of Large Language Models \(arxiv.org\)](https://arxiv.org/abs/2303.08211).

⁵⁴ Gmyrek, P., Berg, J., Bescond, D. 2023. Generative AI and jobs: A global analysis of potential effects on job quantity and quality, ILO Working Paper 96 (Geneva, ILO).

⁵⁵ KPMG (2023), [Generative AI and the UK labour market \(kpmg.com\)](https://www.kpmg.com/au/issuesandinsights/articlespublications/generative-ai-and-the-uk-labour-market).

⁵⁶ McKinsey (2023), [Generative AI and the future of work in America | McKinsey](https://www.mckinsey.com/industries/technology-and-digital/our-insights/generative-ai-and-the-future-of-work-in-america).

	worked by 2030 With GenAI: 29.5 % of hours worked by 2030		Midpoint automation adoption is the average of early and late automation adoption scenarios	
5	20% of workers are very/extremely worried about job loss	7 OECD countries	- Self-reported numbers from workers in finance and manufacturing - Time frame: next 10 years	Lane et al. (2023) ⁵⁷
6	Globally: 40% of workers exposed Advanced economies: 60% exposed, 33% threatened	142 countries using the ILO employment database	- Index of potential AI complementarity - Reflects an occupation's likely degree of shielding from AI-driven job displacement and, when paired with high AI exposure, gives an indication of AI complementarity potential	IMF (2024) ⁵⁸
Consensus estimate	Around 10 %	Europe	Extrapolation based on comparative analysis of existing studies ("meta-analysis")	Own estimate

Source: cep research; own composition. For the individual data sources, see column "Source".

For comparison, we therefore conducted a meta-analysis of further existing studies that aim to estimate the labour market effects of generative AI (Table 1). This survey covered different methodologies, while mostly focusing on advanced economies such as the US, the UK, and other OECD countries. This makes them suitable points of comparisons for Europe's advanced economies. Based on this, we derive a consensus estimate. The latest study, dated January 14, 2024, was carried out by personnel from the International Monetary Fund (IMF), arguing that in developed countries, around 60% of jobs are susceptible to AI, primarily due to the dominance of jobs that involve cognitive tasks.⁵⁹ Among these, roughly half (33%) might experience adverse effects from AI, whereas the others could see improved productivity due to AI implementation. Nevertheless, the IMF researchers point out that increased economic growth and labor demand could potentially offset the issues arising from AI substituting for some labor tasks. This outcome, however, hinges on the way AI is adopted over longer horizons. Taken together, the studies suggest that the greatest impact of modern AI technology is likely to not be job destruction but rather the potential changes to the quality of jobs; nevertheless, on average, at least 10% of jobs seem to be at high risk of being entirely displaced, particularly in high-income regions like Europe. Again, **if we assume that this percentage of the EU's workforce will be affected, this will translate to around 20 million individuals facing the threat of being replaced by AI in the short run.**

Indeed, **the impact of AI on the labour market is already beginning to be felt, as some recent examples in the media suggest.** Overall, the tech sector saw a significant increase in employee layoffs in 2023, with 1,186 tech companies laying off more than 262,000 employees.⁶⁰ At the time of writing (15 January), a further 7,528 employees had been made redundant since the start of 2024. In addition to geopolitically induced economic shifts and necessary organisational restructuring, AI has played a significant role in this process, according to technology expert Azeem Azhar.⁶¹ For example, in areas such as Google's ad sales, AI's ability to automate certain tasks appears to have played a significant role in

⁵⁷ Lane, M., M. Williams and S. Broecke (2023), "The impact of AI on the workplace: Main findings from the OECD AI surveys of employers and workers", OECD Social, Employment and Migration Working Papers, No. 288, OECD Publishing, Paris.

⁵⁸ Mauro Cazzaniga et al. (2024), [Gen-AI: Artificial Intelligence and the Future of Work \(imf.org\)](#).

⁵⁹ Mauro Cazzaniga et al. (2024), [Gen-AI: Artificial Intelligence and the Future of Work \(imf.org\)](#).

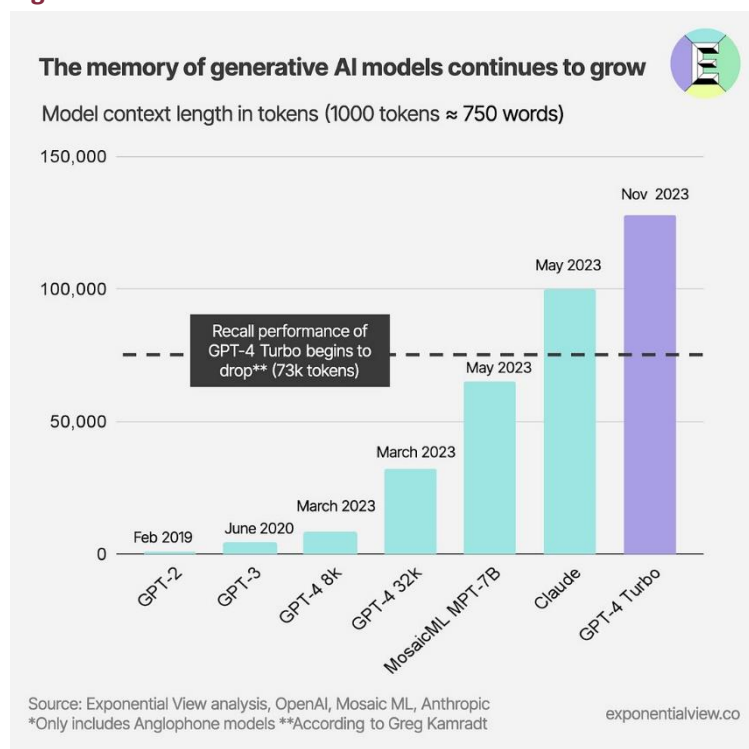
⁶⁰ Numbers taken from: [Layoffs.fyi - Tech Layoff Tracker and Startup Layoff Lists](#).

⁶¹ Azeem Azhar and Nathan Warren, Exponential View newsletter, No. 456, 14 January 2024.

the decision to reduce headcount.⁶² Similarly, Duolingo, a language learning platform, has reduced its contractor workforce by 10%, citing the efficiencies created by using AI in content creation.⁶³ When Springer CEO Mathias Döpfner announced a radical reorganisation of the Bild newspaper in mid-2023, which would see 200 employees laid off, he said that it was “unfortunately necessary to part with colleagues whose tasks are being replaced by AI and/or processes in the digital world, or who do not fit into this new set-up with their current skills”.⁶⁴ The software company SAP is currently planning an AI re-organisation with a total investment of two billion euros, which will result in 8,000 job changes.⁶⁵

Further advancements in generative AI will speed up this process of job replacement, as evidenced by OpenAI’s recent introduction of so-called GPTs, which enable the creation of specialized ChatGPT instances tailored to specific jobs, skills, or subjects, thereby enhancing flexibility and customization in AI tools.⁶⁶ This innovation, which allows business users to save, reuse, and share custom ChatGPT tools within a library, capitalizes on ChatGPT’s ability to mimic various personas (a feature that previously required pre-prompt roleplay), with significant implications for the technology’s labour market impact. Moreover, the company revealed an expanded context window for GPT-4, now capable of handling 128,000 tokens, equivalent to the length of a novel.⁶⁷ This increase in context window size, which follows a clear exponential trend (see Figure 1), allows for more extended and more practical interactions – again, this will increase the scope of jobs that can be affected by generative AI.

Fig. 1: Recent increases in LLM context window size



Source: Taken from Exponential View (12 November 2023).

⁶² [Google Plans Ad Sales Restructuring as Automation Booms — The Information.](#)

⁶³ [Duolingo Cuts 10% of Contractors as It Uses More AI to Create App Content - BNN Bloomberg.](#)

⁶⁴ [Bild-Zeitung entlässt mehr als 200 Mitarbeiter: KI hält Einzug \(faz.net\).](#)

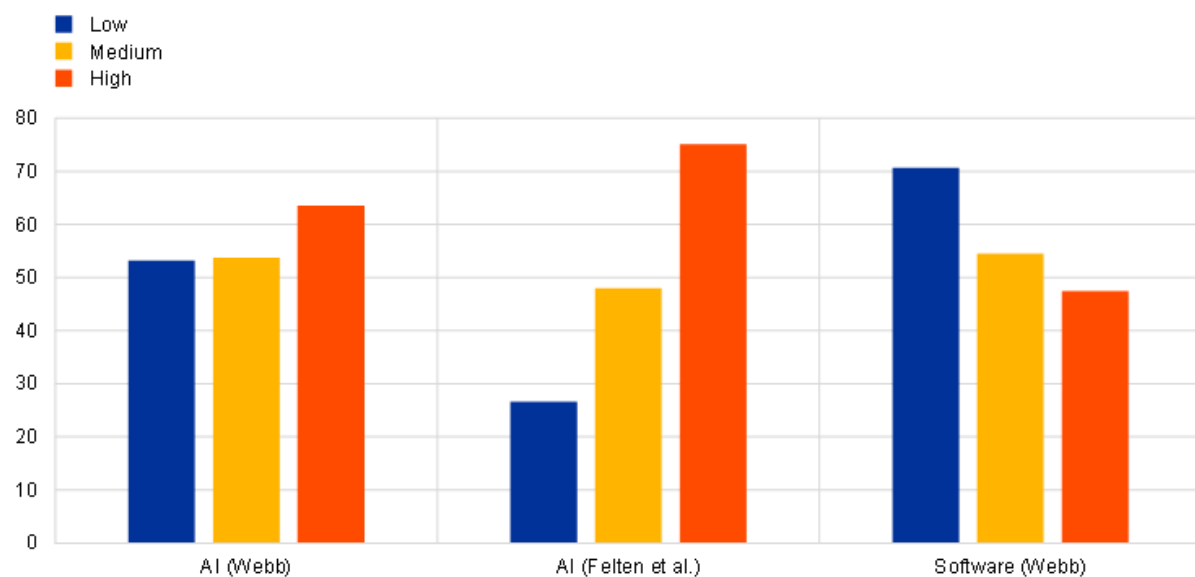
⁶⁵ See: [SAP plant Großumbau für Geschäfte mit künstlicher Intelligenz - DER SPIEGEL.](#)

⁶⁶ [Here's how to create your own custom chatbots using ChatGPT | ZDNET.](#)

⁶⁷ [OpenAI DevDay: GPT-4 Turbo, Custom ChatGPT and API Updates \(aibusiness.com\).](#)

Several other studies on specific tasks or jobs provide further indications of generative AI's probable labour market effects in the near-term future and help to understand **which part of the workforce will be most affected**. A study investigating the impact of generative AI on mid-level professional writing tasks indicates that using ChatGPT significantly enhances overall productivity by reducing the time taken and improving the quality of writing tasks.⁶⁸ Additionally, ChatGPT use increased job satisfaction and confidence in one's abilities, while also raising negative awareness about automation technologies. Similarly, the implementation of a generative AI-based conversational assistant in customer support has led to a 14 percent average increase in productivity, particularly benefiting novice and low-skilled workers by disseminating the tacit knowledge of more experienced workers.⁶⁹ Additionally, this use of AI assistance resulted in enhanced customer sentiment, reduced managerial intervention requests, and improved employee retention. Likewise underlining the notion that generative AI tools already represent significant skills, a controlled experiment showed that developers completed tasks 55.8% faster with AI assistance.⁷⁰ However, it also indicated that such tools could facilitate individuals in transitioning into software development careers, showcasing that there might be positive counter-effects on labour market outcomes. Finally, a recent study on the effects of LLMs on consultants' performance found that generative AI enabled consultants to complete 12.2% more tasks related to creative product innovation and development, 25.1% faster, and with a 40% increase in quality.⁷¹

Fig. 2: European exposure to AI technology by education level



Source: Albanesi et al. (2023). Note: Education groups are defined as the subsample of occupation-sector cells whose average educational attainment is in the lower, middle, and upper third (tercile) respectively of the national education distribution.

If these early studies on the impact of generative AI on the labour market are any indication of the future, it means that the current digital transformation may partially compensate for job losses but

⁶⁸ Noy and Zhang (2023), Experimental Evidence on the Productivity Effects of Generative Artificial Intelligence, [Noy_Zhang_1_0.pdf \(mit.edu\)](#).

⁶⁹ Erik Brynjolfsson, Danielle Li, Lindsey Raymond (2023), [Generative AI at Work \(arxiv.org\)](#).

⁷⁰ Sida Peng, Eirini Kalliamvakou, Peter Cihon, Mert Demirel (2023), The Impact of AI on Developer Productivity: Evidence from GitHub Copilot, [2302.06590.pdf \(arxiv.org\)](#).

⁷¹ Dell'Acqua, Fabrizio and McFowland, Edward and Mollick, Ethan R. and Lifshitz-Assaf, Hila and Kellogg, Katherine and Rajendran, Saran and Kray, Lisa and Candelon, François and Lakhani, Karim R., Navigating the Jagged Technological Frontier: Field Experimental Evidence of the Effects of AI on Knowledge Worker Productivity and Quality (September 15, 2023). Harvard Business School Technology & Operations Mgt. Unit Working Paper No. 24-013.

not at the individual level. **This will lead to social tensions; not least because the kind of workers who will be affected – so-called white-collar jobs – have historically not been subject to widespread “technological unemployment”.** In fact, it is not even the typical white-collar tasks such as data entry and administration that are most susceptible to disruption. Instead, creative, high-level tasks such as consulting, managing, and marketing are facing significant changes.⁷² Research by Hui and colleagues, focusing on a freelance knowledge worker platform, revealed that generative AI reduces overall demand for knowledge workers of all types, who saw a decline of 2% in advertised jobs and a 5.2% drop in monthly earnings.⁷³ Crucially, **the most skilled employees were particularly affected.** Similarly, ECB researcher found that around 25% of all jobs in these European countries during the deep learning boom of the 2010s were in occupations highly exposed to AI-enabled automation and their evidence supports the case that AI-enabled technologies is in competition with high-skilled jobs (Figure 2).

In line with this concerning evidence portrayed here, a recent AI task force by the British government described a scenario of increased UK joblessness and poverty by 2030, ahead of an AI safety summit that was held at Bletchley Park in November. This scenario aims to capture the effect of AI systems “starting to provide effective automation in many domains” in the coming years, and predicts that “[b]y 2030, the most extreme impacts are confined to a subset of sectors, but this still triggers a public backlash, starting with those whose work is disrupted, and spilling over into a fierce public debate about the future of education and work.”⁷⁴ When concluding this global summit, Elon Musk told UK prime minister Rishi Sunak that there “will come a point where no job is needed” and described AI as the “most disruptive force in history”.⁷⁵ This understanding of the “AI timeline” is not just advertisement, propaganda, or driven by Musk’s need to be at the center of attention, but shared by many experts: according to a recent paper that asked 2,778 AI researchers for their predictions on AI progress, the chance of unaided machines outperforming humans in every possible task was estimated at 10% by 2027, and 50% by 2047.⁷⁶ The latter estimate is significantly earlier than that reached in a similar survey at an earlier point in time and thus evidence of the dramatic speed in this domain.

The notion of a rather disruptive transition into the AI-powered economy is also supported by recent changes in the literature on technology in economics.⁷⁷ Economists have so far assessed the introduction of new technologies on the labour market mainly with three models: The Skills Biased Technological Change (SBTC) model represents the classical race between technology and education as a relationship of supply and demand. Routine Biased Technological Change (RBTC) or the “Task Polarisation Model” was developed from this canonical model but differs in that it determines the impact of innovation at the task level. The third and most recent model is that of **labour replacement and reintegration**.⁷⁸ In this framework, automation always reduces the labor share in value added and may reduce labor demand even as it raises productivity. Still, these effects of automation are counterbalanced by

⁷² Green, A. (2023), [3. Artificial intelligence and jobs: No signs of slowing labour demand \(yet\) | OECD Employment Outlook 2023: Artificial Intelligence and the Labour Market | OECD iLibrary \(oecd-ilibrary.org\)](#).

⁷³ Hui, Xiang and Reshef, Oren and Zhou, Luofeng (2023), The Short-Term Effects of Generative Artificial Intelligence on Employment: Evidence from an Online Labor Market, [CESifo Working Paper no. 10601](#).

⁷⁴ [AI task force sets out scenario of increased UK joblessness and poverty by 2030 \(ft.com\)](#).

⁷⁵ [Elon Musk tells Rishi Sunak AI will render all jobs obsolete \(ft.com\)](#).

⁷⁶ Katja Grace, Harlan Stewart, Julia Fabienne Sandkühler, Stephen Thomas, Ben Weinstein-Raun, Jan Brauner (2024), [Thousands of AI Authors on the Future of AI \(arxiv.org\)](#).

⁷⁷ The following classification is based on the literature review in: Schneider, Benjamin & Vipond, Hillary, 2023. "The past and future of work: how history can inform the age of automation," LSE Economic History Working Papers 119282.

⁷⁸ Acemoglu, Daron, and Pascual Restrepo. 2019. "Automation and New Tasks: How Technology Displaces and Reinstates Labor." *Journal of Economic Perspectives*, 33 (2): 3-30.

the creation of new tasks in which labor has a comparative advantage. Although the debate has now moved away from the SBTC model, many policy recommendations continue to focus on training and “upskilling” vulnerable workers. However, this is not the solution if the newer RBTC and labour displacement models are correct. In these paradigms, the introduction of new technologies creates demand for new skills or categories of skills, while destroying demand for other skills. Based on this insight, some economic historians have recently argued that there are indeed several historical examples of rapid devaluation of human capital following technological disruption,⁷⁹ suggesting that this could happen again in the case of ChatGPT and Co – further supporting the case for UBI-style schemes.

In the current context of demographic change and skills shortages across Western supply chains, it is important to consider the argument that AI could also help address the current shortage of workers or professionals. In particular, 75% of EU companies have difficulty finding workers with the skills they need.⁸⁰ According to a survey of C-level executives, many companies see generative AI as a solution to these labour shortages.⁸¹ On closer inspection, however, this belief is often based on loose and not entirely accurate qualitative analogies with past technological revolutions. For example, a report by Wells Fargo Economics notes: “Making the widespread displacement of jobs the base case risks us joining a long historical record of commentators who have rung the alarm bell about surging unemployment due to new inventions that seemed unbelievable to the humans of the time.”⁸² The report argues that past technological revolutions, such as the global adoption of the internet (or the steam engine), have contributed to higher employment trends in the long run.

However, in contrast to these optimistic predictions based on historical intuition, the few existing empirical studies, which we have reviewed in this section, show that generative AI will be very different, in the sense that this technology is much more substitutive (rather than complementary) in its labour market effects. Even if AI could help alleviate some specific skills shortages and increase productivity in the medium to longer term, it is likely that “the positive short-term impact will be insufficient to completely address the significant gap”, according to one AI expert.⁸³ Similarly, Mustafa Suleyman, co-founder of Deepmind, argues that “new jobs won’t come in the numbers or timescale to truly help”. He adds that “the number of people who can get a PhD in machine learning will remain tiny in comparison to the scale of layoffs” and that “demand will create new work, but that doesn’t mean it all gets done by human beings”.⁸⁴

In light of these assessments and the new evidence emerging on generative AI’s labour market impact (see above), UBI-style schemes might be seen as a crucial measure for fostering societal harmony and thus enabling a fast roll-out of this important technology. Re-conceptualised as a tax-financed collective risk-sharing strategy, UBI stands out where private insurance schemes fall short, offering some minimal financial security that cushions the workforce against the disruptive forces of automation and AI. This approach aligns with Rawlsian principles, particularly the concept of making decisions from an original position “behind the veil of ignorance”, where societal measures are designed without

⁷⁹ Humphries, Jane; Schneider, Benjamin (2021). Gender equality, growth, and how a technological trap destroyed female work. *Economic History of Developing Regions*; Humphries, Jane; Schneider, Benjamin (2020). Losing the thread: a response to Robert Allen. *The Economic History Review*.

⁸⁰ [A ‘skills-first’ strategy for a resilient European labor market – POLITICO](#).

⁸¹ [AI could solve the labour shortage crisis but executives are wary over privacy, new survey finds | Euronews](#).

⁸² [Wells Fargo - Panic or Panacea?: The Economic Impact of Artificial Intelligence \(bluematrix.com\)](#).

⁸³ [We Can’t Find Enough Skilled Workers: Can Automation Fill The Gaps? \(forbes.com\)](#).

⁸⁴ Suleyman (2023), *The Coming Wave*, London, p. 180.

the coronavirus outbreak across Member countries.⁹⁰ SURE provided financial assistance in the form of loans to help Member Countries developing short-time work schemes and similar measures. Certainly, SURE is far from being an example of UBI, but it still represented an important step for the EU in implementing measures to protect citizens and mitigate negative socio-economic consequences.

Similarly, the EU has been attempting to develop the idea of a “European Minimum Income Scheme” in order to make sure that all European citizens could have access to a minimum level of resources in time of economic hardship. To date, minimum income schemes across the EU member countries are very different in terms of their coverage and benefits granted. According to EU data, around 35% of those working citizens who are at risk of poverty are not covered by national benefits or the amount granted by national countries is below the poverty line. At the same time, there is a lack of well-developed policies to allow citizens in a state of need to receive benefits and access the labor market.⁹¹ In line with the European Pillar of Social Rights Action Plan⁹², in January 2023, the Council has provided some recommendations on adequate minimum income ensuring active inclusion, building on a previous Council recommendation (92/441/EEC) and on the Commission Recommendation (2008/867/EC)⁹³ with the aim to define common criteria for social protection and inclusion measures for citizens excluded from the labour market. At the same time, during the Conference on Minimum Income and Social Inclusion Policies in the Framework of European Social Protection held in October 2023,⁹⁴ the German Permanent Secretary of State for Labour and Social Affairs, Rolf Schmachtenberg, called the EU member countries to coordinate their social protection policy in order to overcome the shortcomings of the European labour market. Such an initiative seems to be supported by Belgium which holds the EU presidency in the first trimester of 2024 and will provide some focus on social protection schemes at the EU level. Yet, when it comes to UBI itself, there is no European capacity to develop such a social policy at the moment.

Nonetheless, there are several existing examples of Member countries implementing forms of UBI, even for a short period of time to test its efficacy (see Table 2 below). Most notably, in 2017 Finland conducted an UBI experiment for two years by providing a monthly basic income of 560 euro to 2000 citizens, aged between 28 and 58, randomly selected across those receiving unemployment benefits. Such a sum was guaranteed even if the latter would have found some form of employment. The decision to implement such an experiment was taken during the Government led by former Prime Minister Juha Sipilä, who aimed not just to reform the Finnish social security schemes by cutting red tapes and adapt social support to a changing working environment, but to test whether different models of social benefits could work and be implemented at national level.⁹⁵ For this reason, an experimental form of UBI was implemented for two years from 1 January 2017 to 31 December 2018. Yet, the coalition

⁹⁰ See: [SURE \(europa.eu\)](https://ec.europa.eu/sure/).

⁹¹ See: European Commission, Employment, Social Affairs & Inclusion, <https://ec.europa.eu/social/main.jsp?langId=en&catId=1092>.

⁹² See: European Commission, The European Pillar of Social Rights in 20 principles, https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-20-principles_en.

⁹³ See: Commission Recommendation of 3 October 2008 on the active inclusion of people excluded from the labour market (notified under document number C(2008) 5737), <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=celex%3A32008H0867>.

⁹⁴ See: Aranjuez Declaration, 16 October 2023, <https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/inclusion/Documents/2023/161023-AranjuezDeclaration.pdf>.

⁹⁵ Kangas, Olli, Signe Jauhiainen, Miska Simanainen, and Minna Ylikännö (2019) The Basic Income Experiment 2017–2018 in Finland: Preliminary results. Helsinki: Ministry of Social Affairs and Health.

government formed with the populist right wing True Finns (now Finns Party), and other parties, made increasingly difficult for the leading Centre Party to maintain the experiment.⁹⁶

When it comes to other European countries, political debates about UBI started in Spain in 2014 as the topic was introduced by the left-wing party Podemos during the electoral campaign for the European Parliamentary elections. As in other countries, the idea was then abandoned, as its opponents were afraid it could reduce the incentive to work, promote “social parasitism”, and increase the number of welfare migrants.⁹⁷ However, a temporary form of social protection, called Ingreso Mínimo Vital, was approved in 2020 and aimed at providing financial support to families in need, preventing the risk of poverty and social exclusion and improving their opportunities for social and employment inclusion.⁹⁸ This was certainly a revolution in Spain, which is characterized, like Italy, through a mixed form of welfare state model, whereby social services that are financed through taxes (e.g., education, health) are normally and informally complemented by forms of social helps granted by families’ linkages.⁹⁹

The Spanish IMV was similar to the one introduced by the Five Star Movement in Italy in 2019. The so-called Reddito di Cittadinanza was aimed to help people in overcoming social exclusion and poverty by providing forms of financial helps, which were however related to unemployed citizens that did not have access to any other benefits. Such a form of social schemes was not an UBI in the strict sense and since the amount provided by the Reddito di Cittadinanza was quite low, namely an average of 500 euro per months,¹⁰⁰ it was often accompanied by an increase of work in the black market. Detractors of the scheme, which was cancelled in July 2023 by the new Italian government led by the far-right coalition of Brothers of Italy, the League, and Forza Italia, maintained that the provisions somehow undermined citizens predisposition to work, as they could receive help from the State without being pushed to find an employment. Yet, in four years, the Reddito di Ciottadinanza, which costed 28.7 billion euro, benefited more than one million Italian families.¹⁰¹

Even Germany has a similar social scheme, called *Bürgergeld*, which was approved in 2022 to replace the ‘Basic Income Benefit’ (*Grundsicherung*) in order to encourage beneficiaries to actively seek employment. The German initiative provides an average of 410 euros, depending on the social conditions of the claimant, but it is designed to cover housing and heating costs. Moreover, it is set to allow beneficiaries to retain 30% of the benefit if their salary is lower than €1,000 per month.¹⁰² In France, citizenship income scheme is known as *Revenu de Solidarité Active* (RSA)¹⁰³ and has the aim of

⁹⁶ Jimmy O’ Donnell (2019), Why Basic Income Failed in Finland, The Jacobin, <https://jacobin.com/2019/12/basic-income-finland-experiment-kela>.

⁹⁷ Perkiö, J., Rincón, L., & van Draanen, J. (2019). Framing basic income: Comparing media framing of basic income in Canada, Finland, and Spain. In The Palgrave international handbook of basic income (pp. 233–251). Palgrave Macmillan.

⁹⁸ La Moncloa (2020) El Gobierno aprueba el Ingreso Mínimo Vital, <https://www.lamoncloa.gob.es/consejodeministros/resumen/Paginas/2020/290520-cministros.aspx>.

⁹⁹ Guerendiain-Gabás, I., Gil de Montes, L., Bobowik, M., & Arnoso-Martínez, M., Spanish Government, Minimum Vital Income, <https://www.seg-social.es/wps/portal/wss/internet/Trabajadores/PrestacionesPensionesTrabajadores/65850d68-8d06-4645-bde7-05374ee42ac7?changeLanguage=en>; Guerendiain-Gabás, I., Gil de Montes, L., Bobowik, M., & Arnoso-Martínez, M. (2023). Support for unconditional basic income in Spain: A materialist or post-materialist issue?. *Political Psychology*.

¹⁰⁰ See data on the Italian Istituto Nazionale Previdenza Sociale, <https://www.inps.it/it/dati-e-bilanci/osservatori-statistici-e-altre-statistiche/dati-cartacei---rdc.html>.

¹⁰¹ See data on the Italian Istituto Nazionale Previdenza Sociale, [Portale Inps - Dati cartacei - RDC](https://www.inps.it/it/dati-e-bilanci/osservatori-statistici-e-altre-statistiche/dati-cartacei---rdc.html).

¹⁰² Corner (17 October 2023), Germany calls for EU-wide “Universal Basic Income” to be approved <https://thecorner.eu/news-europe/germany-calls-for-eu-wide-minimum-living-income-to-be-approved/111396/>.

¹⁰³ See French Government : [RSA CAF : conditions, montant, simulation | Mes-Allocs.fr](https://www.mesallocs.fr/).

economically support those who have no income or live below the poverty line. Certainly, there are many other examples of forms of social policies introduced by Member countries' governments. Yet, apart for Finland, the above experiments are not complete examples of UBI as often recipients need to be unemployed to be entitled to receive any financial aid. The relevance that UBI could play to increase social and economic welfare, however, is not completely denied. For instance, in 2020 the German Institute for Economic Research and the start-up *Mein Grundeinkommen* launched a pilot project to transfer approximately €1,200 to 120 people monthly for three years.¹⁰⁴ Similarly, in January 2023, Catalonia has launched an UBI pilot project whereby 5,000 citizens from across Catalonia and from two selected villages will receive 800 euro each month for two years to study UBI's impact on communities.¹⁰⁵

Tab. 2: Examples of Member States' UBI initiatives and social policies

Period	Country	Policy measure (UBI or Social Policy)	Description
2017-2018	Finland	UBI	560 euro to 2000 citizens, aged between 28 and 58, randomly selected across those receiving unemployment benefits
2020	Spain	Social benefit: Ingreso Mínimo Vital	Provides financial support to families in need, preventing the risk of poverty and social exclusion and improving their opportunities for social and employment inclusion
2019- 2023	Italy	Social benefit: reddito di cittadinanza	Provides financial support to families in need, preventing the risk of poverty and social exclusion and improving their opportunities for social and employment inclusion
2020	Germany	Social benefit: Bürgergeld	provides an average of 410 euros, depending on the social conditions of the claimant, but it is designed to cover housing and heating costs. Moreover, it is set to allow beneficiaries to retain 30% of the benefit if their salary is lower than €1,000 per month
2008	France	Social benefit: Revenu de Solidarité Active	Provide an average of 607,75 € to economically support those who have no income or live below the poverty line.
2023	Catalunya	UBI	5,000 citizens from across Catalonia and from two selected villages will receive 800 euro each month for two years to study also the impact of UBI on communities.
2020-2023	Germany	UBI	pilot project to transfer approximately €1,200 to 120 people on a monthly basis for three years

Source: cep research & individual studies by MS.

To sum up, UBI remains a subject of debate in Europe and its social, political, and economic context are deemed to be uncertain. European detractors of UBI maintain it could not just have negative effects on work incentives but providing citizens with more purchasing power would result in increasing inflation and rising costs of production. This would result in lower real wages that would reduce the standard of living overall. Although there is little evidence to support this view, as UBI could hardly be

¹⁰⁴ See project webpage : <https://www.pilotprojekt-grundeinkommen.de/english>.

¹⁰⁵ See: the Major.EU (2023) Catalonia's Universal Basic Income try out to start on 1 January 2023, <https://www.themayor.eu/en/a/view/catalonia-s-universal-basic-income-tryout-to-start-on-1-january-2023-10914>.

more inflationary than any other unpredictable market trends, it is evident that the rationale behind UBI extends beyond the moral imperative of assisting individuals in financial distress. It also encompasses the need to explore innovative solutions to address challenges posed by automation and evolving labor markets, as argued in the previous section, thereby testing the human capacity to adapt. In this respect, it is very difficult to empirically evaluate UBI or predict its future effects, as older market categories on labor policies are hardly applicable anymore in the age of generative AI.

An important finding is that the UBI experiment in Finland proved its detractors wrong. Indeed, the unconditional guaranteed income provided did not reduce citizens' incentives to work; on the contrary, it had a positive impact on employment.¹⁰⁶ Moreover UBI benefited citizens well-being in multiple dimensions, starting from health to their trust in national institutions, increasing social solidarity, and reducing poverty stigma. Nonetheless, it seems that the result of the experiments did not lead to the adoption of the project at national level because of political reasons. Namely, UBI was perceived by some actors as a way to undercut the income-based unemployment system controlled by trade unions and employer associations. Moreover, for trade unions, UBI was too expensive, and it would have resulted in an increase of the national budget deficit, likely necessitating an increase in taxes.¹⁰⁷

4.2 How to finance UBI in the EU?

We can learn from previous European experiences with test schemes that the success of implementing UBI largely depends on building public support and achieving political consensus. Indeed, a well administered UBI could simplify existing welfare programs, resulting in a less bureaucratic burden for the state that needs to provide different forms of social benefits, leading to lower healthcare and social service costs. More importantly, as shown in section 3, UBI can be a helpful tool to increase economic and social resilience in the age of highly disruptive AI. However, the amounts paid out in the existing test schemes throughout Europe also demonstrate that scaling any form of UBI on a continental level will require large amounts of funding. From a European perspective, what could be possible sources of funding? This question is becoming increasingly important in the context of high public debt following the Covid-19 pandemic and the investments that climate change will require. The remainder of this section therefore discusses three possibilities that stand in varying degrees of abstraction to the spread of AI: an AI tax benefiting data workers such as artists, a more general tech levy at the EU level, as France has long called for, and finally, as the most general proposal, a global wealth tax.

In September 2023, a faction of French MPs proactively curated legislation addressing the complexities of copyrights in the age of AI, showing how national policy adaptation in individual EU member states could be leveraged in support of UBI.¹⁰⁸ The draft, yet to be ratified at the time of writing, grapples with the challenge posed by AI's propensity to generate new content by leveraging pre-existing artworks. It articulates that the copyright of an AI-generated artwork should vest in an artist who has substantively contributed to the AI's creation, or alternatively, the artists who served as inspirations for the AI. However, problems arise in scenarios where discerning specific artistic influences on the AI becomes impractical. To navigate this, the proposed legislation advocates for the imposition of a tax

¹⁰⁶ Tera Allas, Jukka Maksimainen, James Manyika and Navjot Singh (2020), An experiment to inform universal basic income, McKinsey, <https://www.mckinsey.com/industries/social-sector/our-insights/an-experiment-to-inform-universal-basic-income>.

¹⁰⁷ Jimmy O' Donnell (2019), *Why Basic Income Failed in Finland*, The Jacobin, <https://jacobin.com/2019/12/basic-income-finland-experiment-kela> Why Basic Income Failed in Finland (jacobin.com).

¹⁰⁸ The law can be found (in French) here: [Proposition de loi n°1630 - 16e législature - Assemblée nationale \(assemblee-nationale.fr\)](https://www.legislation.gouv.fr/proposition/2023-09/PL1630).

on AI companies. The revenue accrued would be entrusted to a national agency tasked with the equitable remuneration of artists, a mechanism reflective of practices adopted in the French music industry. This innovative fiscal approach could potentially be harnessed as a viable financial conduit to support the realization of a European form of UBI in the age of AI.

Another avenue would be to target the digital sector in its entirety, i.e., independent of the degree to which specific AI models have been implemented. Over the past decade or so, dozens of digital tax measures have been proposed or implemented that aim to reform the low tax rates available in some countries and the ability of Big Tech multinationals to earn income without having a physical presence or to shift income to low-tax jurisdictions.¹⁰⁹ For several years now, French President Emmanuel Macron has pushed the EU to work towards levying such an EU-wide digital tax on big tech multinationals.¹¹⁰ In this context, EU leaders initially agreed, in principle, to introduce a digital levy targeting substantial tech entities as part of a broader strategy to augment budgetary resources essential for pandemic recovery.¹¹¹ This inclination towards taxing significant tech giants, such as Amazon and Facebook, emerges from a heightened imperative for such prosperous digital companies to contribute a fair share of revenues generated within the jurisdictions they operate. These proposed tax adjustments coincide with a larger, ongoing discussion led by the Organisation for Economic Co-operation and Development (OECD), advocating a two-pronged approach to ensure that corporations pay taxes where substantial economic profits are generated, and establishing a baseline for minimum taxation to mitigate the erosion of tax bases across jurisdictions. However, the path towards implementing such a digital tax in Europe is fraught with complexities, such as potential retaliatory trade tensions, the need for a universally agreeable framework, and ensuring that the tax structure does not unduly hinder innovation and economic activity. These difficulties became apparent in July 2021, when the EU froze its digital tax plan to tax online tech giants after receiving pressure from the US.¹¹²

Finally, one could rely on income generated by a global wealth tax. A Paris-based, EU-funded research lab has recently released a comprehensive report advocating for the imposition of a global minimum two-percent annual wealth tax on the world's 2,756 richest individuals.¹¹³ Highlighting the prevailing inadequacies in the taxation systems, the report underscores that these affluent personalities effectively pay insubstantial taxes, at rates ranging from 0-0.5 percent, relative to their vast fortunes, primarily by leveraging personal holding companies to circumvent income tax liabilities at the margins of legality. The proposed tax reform seeks to target the wealth, rather than the income, of these billionaires, aiming to remedy systemic imbalances and foster a more equitable taxation framework, which is in line with the requirements for the AI age outlined in the previous section. The research estimates that the implementation of this innovative tax model could potentially generate a substantial revenue influx, approximating €236 billion, thereby contributing to a fairer global economic landscape as well as providing the necessary funding for an ambitious UBI scheme. While the EU has been taking over some competences on some aspects of social policy, introducing UBI at the EU level would mean that

¹⁰⁹ Faulhaber, Lilian V. (2020). Taxing Tech: The Future of Digital Taxation, SSRN, <https://ssrn.com/abstract=3460741>.

¹¹⁰ [France's Macron: we want an EU-wide digital tax on big tech | Reuters](#).

¹¹¹ The following summary of the EU's digital tax plans is based on: De Mooij, Ruud, Alexander Klemm, and Victoria Perry, eds. 2021. Corporate Income Taxes under Pressure: Why Reform Is Needed and How It Could Be Designed. Washington, DC: International Monetary Fund.

¹¹² See: Abdel-Sadek (2021), [Big Tech and Digital Taxation reforms in the EU and MENA : EuroMeSCo – Euro-Mediterranean Research, Dialogue, Advocacy](#).

¹¹³ Annette Alstadsæter, Sarah Godar, Panayiotis Nicolaides, and Gabriel Zucman (2023), Global Tax Evasion Report 2024, [Global Tax Evasion Report 2024 - Eutax \(taxobservatory.eu\)](#). See also: [Global 'billionaires tax' could raise €236bn, report finds \(euobserver.com\)](#).

member countries should reform the treaties to provide the EU institutions with the power to implement such a revolutionary social policy. At the moment, the governing treaties do not provide the EU with the authority to intervene over social policies, which are traditionally considered the domain of member states. At the same time, there would be the need of a significant political consensus, which is hardly achievable considering the different economic standard and trends at the EU level. In this respect, it could be easier to hypothesise the creation of UBI within the eurozone, whereby countries share at least the same currency. Yet, the same amount of euro devolved to someone in Germany would not equal to someone living in Slovakia, as the cost of life is higher in Germany. Hence, even if adopted at the EU level, UBI should be adapted to the country it is destined to. Finally, UBI would require member countries to harmonize their national legislation on social policy. Indeed, UBI would somehow replace all other forms of welfare related to unemployment or social benefits, which differ a lot from country to country. In reality, of course, this seems highly unlikely or even impractical. More research is needed on the interactions between UBI and decreases in expenditures from other programs.¹¹⁴

Tab. 3: Estimating the total cost of a European-wide UBI scheme

Country	Cost of Living in 2017	UBI amount per citizen per month	UBI amount x one citizen x one year	Population ¹¹⁵	Cost of UBI per country
Ireland	157,19	582,45 €	6.989,46 €	5.194.336	36.305.593.738,14 €
Luxembourg	156,4	579,53 €	6.954,33 €	660809	4.595.484.321,26 €
Finland	151,13	560,00 €	6.720,00 €	5563970	37.389.878.400,00 €
Netherlands	137,57	509,75 €	6.117,05 €	17811291	108.952.632.272,13 €
Belgium	136,89	507,23 €	6.086,82 €	11754004	71.544.482.781,73 €
France	135,27	501,23 €	6.014,78 €	68070697	409.430.581.559,17 €
Austria	134,56	498,60 €	5.983,21 €	9104772	54.475.803.404,69 €
Germany	127,47	472,33 €	5.667,96 €	84358845	478.142.338.733,86 €
Italy	124,24	460,36 €	5.524,34 €	58850717	325.111.095.733,06 €
Spain	113,82	421,75 €	5.061,01 €	48059777	243.230.998.861,25 €
Cyprus	108,2	400,93 €	4.811,12 €	920701	4.429.599.549,42 €
Portugal	106,46	394,48 €	4.733,75 €	10467366	49.549.863.500,95 €
Greece	104,66	387,81 €	4.653,71 €	10394055	48.370.918.223,62 €
Slovenia	103,47	383,40 €	4.600,80 €	2116792	9.738.929.574,36 €
Malta	101,71	376,88 €	4.522,54 €	542051	2.451.446.360,43 €
Estonia	96,58	357,87 €	4.294,43 €	1365884	5.865.696.787,92 €
Slovakia	93,82	347,64 €	4.171,71 €	5428792	22.647.341.121,93 €
Latvia	89,68	332,30 €	3.987,62 €	1883008	7.508.727.704,60 €
Lithuania	79,09	293,06 €	3.516,74 €	2857279	10.048.305.153,57 €
Total amount per year					1.929.789.717.782,08 €

Source: Own composition & Eurozone index of the cost of life.

¹¹⁴ See: Hasdell (2020), What we know about Universal Basic Income: A cross-synthesis of reviews. Stanford, CA: Basic Income Lab, [Umbrella Review BI final.pdf \(stanford.edu\)](#).

¹¹⁵ [Statistics | Eurostat \(europa.eu\)](#).

Yet, for the sake of argumentation, let's imagine an EU where UBI has the political consensus, where Treaties can be changed (which is becoming increasingly likely in context of the planned EU enlargement), and national laws are harmonized. How much would a fully-fledged UBI cost?¹¹⁶ To roughly estimate the cost of UBI, we consider the Eurozone index of the cost of life,¹¹⁷ calculated in 2017, and the amount of UBI provided in Finland in the same year (560 euro * 12 months) and adjust it to other eurozone member countries' cost of life (Croatia is not included). Then, to reach a simplified back-of-the-envelope-estimate, we multiplied the sum with the number of citizens within the eurozone countries in 2017, namely around 345 million. According to this calculation, the total cost would be around more than 1,229 billion euro a year, around 17% of the eurozone GDP (Table 3).¹¹⁸

In 2017, eurozone governments' total expenditure on social protection, covering sickness and disability, old age, survivors, family and children, unemployment, housing, R&D, social protection and social exclusion, amounted to 28.8%¹¹⁹ of the Eurozone GDP (11,224,918 million euro), namely around 3232 billion euro.¹²⁰ In this respect, introducing UBI by replacing most of these existing social policy schemes would be, on a purely theoretical level, economically sustainable – especially, if partially financed by the above-mentioned new forms of taxes as it would replace only some of the social services costs. This is necessary, as the above-mentioned study conducted by the OECD notes that additional tax revenues must be found, and overall spending increased, if an increase in poverty risk is to be avoided.¹²¹

Our hypotheses and back-of-the-envelope-calculations are backed up by a recent study conducted by the DIW Berlin, which uses a microsimulation model to analyse the fiscal and distributional effects of introducing a UBI in Germany.¹²² The study proposes a UBI of 1,200 Euros per month for adults and 600 Euros for children under 18, with total annual costs estimated at 1.1 trillion Euros, or about a quarter of the German economy's output. This UBI would replace all social benefits, leading to savings of 100 billion Euros annually, resulting in a net expense of around one trillion Euros. The study suggests this amount could be largely financed through a uniform 50% tax on all labour and capital incomes, supplemented by a standard VAT and a CO₂ tax. The model predicts significant financial relief for the lower 70 to 80 percent of income earners, including the middle class, while the top 10 percent earners would experience a 15% income reduction. Therefore, this UBI model would lead to substantial redistribution effects in society and reduce economic inequality. From the calculations, it becomes clear that **introducing such a scheme is financially feasible in a basic sense**. While the tax model proposed by the DIW would leave a financing gap of almost 200 billion euros, this could be covered by one of the special taxes mentioned above, for example on digital giants such as Google.

¹¹⁶ We are well aware of the vast economic literature on how to finance a UBI, but for the sake of argument we will limit ourselves to a brief back-of-the-envelope estimate, which is not intended to provide a holistic answer. The interested reader is referred to the recent literature review by: Conesa et al. (2023), [A quantitative evaluation of universal basic income](#), Journal of Public Economics. For the intrinsic uncertainties related to estimating UBI costs, see: Blum et al. (2023), The New Ordoliberalism - A Case for UBI?, [2023-12-07 New Ordoliberalism A Case for UBI Working Paper Draft.pdf \(uni-freiburg.de\)](#), esp. p. 27.

¹¹⁷ Data taken from: Cost of living in Eurozone, TheGlobalEconomy.com.

¹¹⁸ Here is the formula for calculating the cost of UBI, whereby X is UBI amount in each Eurozone country, F is Finland annual UBI amount in 2017 (560*12), Yf is the cost of living in Finland in 2017, Yn= Cost of Living in each Eurozone country in 2017, Pn= Population in each country: Annual UBI per citizen in each country= $F/Yf=X/Yn$, $X= F*Yn/Yf$ and Cost of annual UBI = Sum of $(X*Pn)$.

¹¹⁹ [Statistics | Eurostat \(europa.eu\)](#).

¹²⁰ [Government expenditure on social protection - Products Eurostat News - Eurostat \(europa.eu\)](#).

¹²¹ OECD (2017), Basic Income as a Policy Option, <https://www.oecd.org/social/Basic-Income-Policy-Option-2017.pdf>.

¹²² Stefan Bach and Mark Hamburg (2023), Simulationsanalysen zur Finanzierbarkeit des bedingungslosen Grundeinkommens, DIW Berlin: Politikberatung kompakt 195, [Steuerwandel \(diw.de\)](#).

But beyond taxes, UBI could also be interpreted as an investment by these digital giants in upskilling or reskilling data workers. Since AI needs data to function, and data is provided by citizens, such a scheme could be interpreted as an AI investment in its workers, and therefore could be funded by AI-generated increased productivity gains. By allocating a portion of UBI as vouchers for the reskilling of the traditional labour force, one could empower these workers to adapt to the evolving job landscape. Financing could come from the substantial productivity gains attributed to AI advancements, effectively translating the AI-induced economic expansion into a tangible and direct benefit for the workforce. Instead of introducing a mere safety net, as proposed in the traditional and now outdated debate about UBI, this approach would rather envision a form of dividend or return on the collective AI capital stock. If all data workers assume a stakeholder role in the AI-driven economy, this would foster a more inclusive and participatory economic model and reinforce the social contract in the age of AI.

5 Conclusion: Navigating fragile times

Generative AI technologies are not only transforming the nature of jobs but also pose a significant risk of displacing jobs, particularly in affluent regions where up to 10% of jobs, affecting nearly 20 million individuals in Europe, could be at risk. This displacement is likely to be more pronounced in creative and highly skilled sectors, potentially leading to social unrest. Against this backdrop, the implementation of UBI test schemes has shown promising results in fostering positive employment and welfare outcomes, challenging the longstanding skepticism about UBI's feasibility and practicality. The prospect of a pan-European UBI is further supported by the argument that it could be financially sustainable by repurposing certain existing social expenditures and introducing innovative digital tax strategies. However, the dearth of comprehensive empirical evidence on UBI's long-term effects on work incentives, coupled with AI's potential to alleviate the impending skilled labour shortage, underscores the urgency for further research before rolling out any extensive UBI programs across Europe.

In the AI era of exponential change, which is reshaping business models, the essence of education, and the dynamics of labour markets, a more agile approach to social policy is imperative. Rather than resorting to taxes on automation and robotics – which could lead to welfare losses and inefficient resource allocation – a reimagined form of basic income insurance might serve as a more effective buffer during periods of technological upheaval and help to compensate for the lack of aggregate demand in our increasingly digitized economies. It would also provide an efficient mechanism to relocate jobs and businesses more flexibly, as demanded by the globalised economy and the technological disruption brought about by generative AI models. Finally, it would remunerate useful activities, such as data-producing private activities, that are currently unpaid. This can best be imagined with digital commons such as open-source software. Here, society derives great benefit from the activities of a few volunteers who use their time and knowledge but are not paid for it by anyone, although everyone benefits. Incidentally, the same applies to modern generative AI tools such as ChatGPT, which are trained based on private text data, without citizens being remunerated by OpenAI.

Indeed, to be a viable means, UBI needs to be reinvented and become not just a means of support, but rather a collective risk-sharing measure to help citizens up-skill or re-skill. If we frame UBI from this perspective, it could also be argued that the latter could be financed by the increased profits generated by AI, as every citizen is an AI worker, providing the data needed for digital industry and robots to function. In summary, we propose that in the age of generative AI, UBI should not be discussed as a purely general socio-political instrument, but as a possible conceptual response to specific characteristics of digital exponential technology and its systemic effects on education and the labour market.

An accelerated introduction of robots makes sense given the shortage of skilled labour but is problematic in the current system. In contrast, a kind of UBI-style safety net can (partly) solve the problem and, according to our hypothesis, ensure its own financing by enabling accelerated uptake of AI solutions. This would support a more inclusive and resilient society in the face of rapid technological advances and geopolitical stress.



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