

ECONOMICS

ARTIFICIAL INTELLIGENCE: MACROECONOMIC EFFECTS

Dr. Jörn Quitzau, 03 June 2024

- **The breakthrough in the field of artificial intelligence (AI) heralds a new era. The economy will be one of the winners of this technological disruption.**
- **How the fundamental productivity gains will be distributed among companies and employees is an open question.**
- **Socio-political tensions cannot be ruled out for economic and political reasons.**

By their very nature, macroeconomic forecasts are subject to a number of uncertainties. This is particularly true in a world that is undergoing fundamental change. The use of artificial intelligence will be particularly important for the macroeconomic development in the future. The question has long since arisen: is artificial intelligence more of a curse or a blessing for the economy and society?

Productivity potential: The increased use of artificial intelligence has the potential to boost productivity. Thanks to technological progress, companies will be able to produce more with the existing production factors. This increases the long-term growth potential. However, a look at the details reveals how difficult it is to assess and quantify the consequences of the increased use of artificial intelligence. It is by no means certain that the potential productivity gains can be fully translated into higher output. It is likely that the use of AI will make the world of work more comfortable and pleasant for many employees – just as technological innovations have made working life more pleasant overall in the past. Employees could also benefit from shorter working hours. Some of the productivity gains are therefore likely to benefit the workforce. The other part would increase the output of companies and boost profits.

Employment: In the short term, the use of artificial intelligence will help to alleviate the rampant shortage of labor and skilled workers. It may even be possible to completely overcome the shortage. The short-term labor market effects of the use of AI are therefore highly likely to be positive. The medium and long-term effects, on the other hand, are not clear. Will the AI revolution merely be another episode of structural change in which existing jobs come under pressure (and in some cases disappear altogether) and are replaced by jobs with new job profiles? Historical experience speaks in favor of such a scenario, in which the economy grows and the old jobs are replaced by new, higher-value jobs. From an economic point of view, such a development would be positive. Nevertheless, the structural change would not be smooth. During the transition phase, the qualifications of many workers will be devalued. Some will lose their jobs and entire occupational groups could disappear. The losers of structural change are likely to experience resentment and frustration. This was no different in previous episodes of structural change. However, there are some indications that the AI revolution – unlike in the past – will primarily jeopardize well-paid jobs and highly qualified workers. It could therefore affect a clientele who thought they were on the safe side due to their qualifications and for whom the material loss potential is relatively high. In a negative scenario, it is even conceivable that significantly more jobs will be lost than new jobs will be created in the long term as a result of the digital revolution.

It is also conceivable that the speed of change is so high that the workforce's ability to change cannot keep pace. In this case, new jobs would be created, but they could not be filled due to the workers' lack of qualifications. In such cases, increasing distributional issues and considerable social tensions could be expected.

Price and distribution effects: The added value generated by artificial intelligence will lead to profits for the providers of AI solutions on the one hand and to relief for the users of AI tools (companies, consumers) on the other. Ultimately, the price effects and distribution effects depend very much on the prices of the AI tools used. The cheaper the AI tools are offered, the more users (companies, consumers) and society as a whole benefit. Previous experience with digitalization suggests a price-dampening effect. Digital goods and services are often offered at very low prices or even free of charge. This means that the prices of some services that are still very expensive today could fall considerably or be available free of charge in the future. Consumers could be significantly relieved on the cost side. It remains to be seen whether such relief will be sufficient to adequately compensate those whose jobs and incomes come under pressure due to the AI revolution. In any case, policymakers would be well advised to develop concepts that can cushion (temporary) income losses and enable people to retrain or upskill ("activating welfare state"). Such concepts could become very important to ensure social acceptance of the digital revolution. Finally, there is an indirect effect: if the labor shortage can be overcome, the upward trend in wages would also be contained. The chances are therefore good that the use of artificial intelligence will have an overall dampening effect on the rate of inflation.

Reputational risks: Finally, the dangers of so-called deepfakes should not go unmentioned. For companies, politicians and private individuals, this creates reputational risks that can have considerable personal, financial and political consequences. Ultimately, society as a whole is affected. Social coexistence is based to a large extent on trust. In a world of deepfakes, trust is destroyed and considerable resources must be invested in restoring the credibility of companies, institutions and individuals.

Overall, the increased use of artificial intelligence brings great opportunities for the economy and society. On the other hand, society must be aware of the risks that may be associated with the use of AI. Technological development is progressing at a rapid pace, while government regulations can generally only react with a time lag to undesirable developments that have already occurred. In addition, regulating global phenomena is particularly difficult when countries pursue very different objectives. In summary, it is clear that exciting times are ahead of us.





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