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ESSAY ABOUT THE BOOK "The era of digital disruption"

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Chapter: Technological change and employment

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Technological change and employment

Currently, many jobs are threatened by a growing technological change in the form of machines and robots that can perform tasks more efficiently and economically than humans, and therefore, replace them. The unease about this phenomenon is not new. As the authors point out, since the first Industrial Revolution, the introduction of mechanization led to a significant loss of labor in agriculture. However, this change was followed by a structural shift towards the secondary sector, resulting in the creation of new jobs and employment opportunities in the industry. Given the new context we face, where changes are happening at a dizzying pace, the current revolution differs from previous ones in a greater uncertainty and the possibility of observing greater technological unemployment. How significant is this possibility? Will it affect all types of work in the same way? Will the effect be the same in the short and long term?

First, the authors point out an important difference between a time horizon of three or four decades, which is the subject of analysis in his work, and the very long term. In the latter case, it is more likely that technological change will lead to massive unemployment; however, the book presents various arguments to demonstrate that in the coming decades, the chances of this happening are much lower. On the one hand, it supports the predictive economic theory that technological innovations mean an increase in productivity that helps improve worker efficiency, which in turn increases wages, employment, and aggregate demand. Additionally, there is evidence from various countries where productivity has increased while unemployment has simultaneously decreased. For example, between 1900 and 2018 in the United States, a country and period that has witnessed significant technological revolutions, GDP per capita multiplied by 8.8, while unemployment decreased by 0.2%. The authors argue that if unemployment has increased in a particular country, as in the case of Spain or Greece in recent decades, it is due to specific characteristics of their labor markets and not to technological change.

On the other hand, although it is inevitable that some jobs will be lost because they can be performed more economically and effectively by a robot or machine, new

types of jobs are created simultaneously—a phenomenon that is well-advanced in the United States and China. To name a few examples, in the tourism sector, customers are increasingly less attended to in person, and many activities are conducted online, such as booking flight tickets or hotel reservations. While this may result in fewer staff at service counters, there is a growing demand for marketing workers who study customer preferences and create and digitally promote products and services. Entrepreneurs can also build businesses based on the ownership of robots, and the growing availability of databases requires more data scientists. Likewise, technology can be beneficial if the increase in capital efficiency leads to a similar increase in worker efficiency by facilitating their tasks. When these two factors are complementary, labor demand expands. And according to the book, the effect generated by complementarity is greater than the substitutive effect, so the overall economy would benefit from technological innovations. However, the fact that the economy as a whole benefits does not mean that all individuals and economic sectors do. In fact, one of the main disadvantages is that this change is likely to be accompanied by an increase in inequality between social groups and a disparate evolution of labor demand depending on worker qualifications. Polarization is the main phenomenon. That is, machines and robots tend to replace medium-skilled jobs, those characterized by routine tasks, while concentrating employment at the two extremes of qualification: at one end are sectors requiring a high level of knowledge and skills, and at the other, those requiring more non-routine manual labor. This process is known as "routine-biased technical change," which characterizes our era compared to the "skill-biased technical change" prevalent during the Industrial Revolution, whose implication is that low-skilled workers are threatened, while high-skilled workers benefit from increased demand for labor and higher wages.

Furthermore, social concerns are growing regarding the quality of employment, which, although it has increased over an extended time horizon, has recently been declining. In particular, wages, working hours, social protection in markets, and job security have been negatively impacted in some productive sectors. And as a consequence of polarization, a considerable portion of routine workers will inevitably be shifted to non-routine manual tasks, where job quality and remuneration are generally lower.

In conclusion, the book argues that technological change will not cause massive unemployment in the coming decades. However, attention must be paid to certain sectors of society, as while some will benefit from reduced work effort and higher wages, others will face lower demand and lower wages, potentially increasing income inequality. To address these issues, it is important to adopt policies, strategies, and labor regulations that adjust and renew at the same pace as the changing needs of the population.