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The Economics of Technology

# Introduction

World has moved towards technology age with most of the processes becoming digital. Technology has transformed not only businesses but also the way economies work. The number of businesses is increasing day by day as technology has made it very easy for entrepreneurs to set up operations online. This in return helps the whole economy of any country. Technology has also helped the businesses to reach regions outside their countries as well. Therefore, technology is attributed to increasing sustainable development of economy. All the products that are produced can be easily developed and people’s inventions can be brought in the market. (Farid) It is an emerging subject in the modern world as people are realizing the importance of technology in economy.

# Macro-economic Factors

## Real GDP per capita

The real GDP per capita of US of 2018 as calculated by The World Bank in 2019 is $62,641.051 as compared to real GDP of 2017 that was $59,927.93. (The World Bank) This increase is contributed to increased investment in the technology sector. As more means of production are introduced, the output is evidently increased. Increase in production and outputs result in increase of GDP per capita. US is one of the high-income developed countries that have been implementing technology in its production processes. Solow model explains that investing more capital results in increased production and the GDP per capita rises. (Zhao) Information Technology has also greatly affected the increase in GDP per capita. As US is a high-income country, the impact is more than the low-income countries. (Toader, Firtescu and Roman)

The GDP per capita rate of UK in 2018 was $42,491 as compared to GDP per capita rate in 2017 which was $39,932.06. (The World Bank) UK has increased its GDP per capita value since last year. It is said that UK has been increasing its investment in the technology sector. UK’s economic growth is believed to be increased due to the implementation of artificial intelligence in its businesses. Due to this implementation, demands can be stimulated among the consumers increasing sales of businesses. UK has been making advancements in its technology industry as a means to enhance its economic growth. The increase in GDP is due to this implementation. (Flinders)

Unemployment Rate

The unemployment rate increased to 3.6% till the third quarter of 2019. There was an increase in number of unemployed persons by 86,000. (Trading Economics) The unemployment rate of men was 3.9 while unemployment rate for women was 3.8 in 2019. The rate of unemployment of UK decreased from 3.9% to 3.8% in 2019. The rate of unemployment for women was 4.1 while unemployment for men was 4.2 in 2019. (The Guardian)

It is believed that technology will be one of the reasons why unemployment will increase in the world especially in the developed countries. The reason for this is that businesses have started to realize that automation in the operations can decrease the long-term costs. Artificial intelligence has been introduced and is being widely practiced in the business world. This is due to the reason that this technology has many applications. It is being used in the services sectors, in the operations, etc. There is a belief that this technology will replace many jobs. These are being used in the customer services, HR recruitment, etc. Similarly robotics are also being used in businesses. Many factories have automated their operations in order to make use of resources and decrease the danger of defects. The repetitive tasks can be performed better by robots than humans. (Ahmed)

The introduction of machinery made the operations easier in the past. Labor market could use heavy machinery to make sure that construction could be done easily. Similarly, the production of goods could be aided by machines. However, it is seen that many jobs that humans could perform are being employed to technological machinery. However, this means that humans will be required to work highly specialized jobs such as managing these machines. This means that the people who are not highly skilled are at risk of losing their jobs. This further adds to the problems of unemployment because a number of people will lose their jobs in this way. While automation and technology will not affect the whole labor market, experts believe that there is a chance that 30 million people in US will be unemployed due to technological advancement. (Market Watch)

Technology and implementation of machines has also caused underemployment. Banks and financial institutions have introduced machines such as ATMs, cash machines, kiosks, etc. in order to make their operations accurate and error-free. These machines have their own disadvantages such as technology failing, networks being hacked, etc. Even then institutions focus on the benefits of these machines. This is the reason many people who were skilled in the financial institutions are being forced to work jobs that are not according to their skills. Similarly, in many other industries this problem is prevailing.

Inflation

The inflation rate in US rose to 1.8% in October 2019. It is found that technology has resulted in lower level of inflation in US due to the advantages of technology. (Lv, Liu and Xu)

The inflation rate in UK fell to 1.5% in October 2019. When production levels increase, the prices are pushed down because there is an abundance of supply in the market. As discussed above, there are many advantages due to which businesses have used technological equipment in their operations. Although this has resulted in unemployment (to some extent) in the economy, there are benefits to the business side of economy. These benefits are that the production can be done in mass volume, without errors and efficiency can be increased as these machines perform the tasks that they are programmed to do. As machinery is adopted in the businesses, there is no need for humans to be working those jobs. This reduces the cost of wages and other compensations that are provided to the workers. This results in decreased cost of production in the bigger sense. Although investments in technology are very high, the long term costs that the companies have to face are lower. The production in US has increased rapidly in the past few decades due to implementation of technology. When production increases, supply is increased which ultimately decreases inflation. Similarly, unemployment is developed due to technology which also results in decrease in inflation as purchasing power of consumers is diminished.

# Conclusion

This research study focuses on the impact that technological advancement has on different factors of macro-economics. This research will help in strengthening the concepts about technology in economy further by focusing on two countries, USA and UK. It has been established that the advancement in technological trends have affected the factors in economy. Technology has the most impact on unemployment and it is seen that this impact is negative. GDP per capita has increased in both of these countries due to implementing technology. The impact of technology on inflation is usually negative as production is increased that results in lower prices of the commodities as supply is increased and demand is pushed up.

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