

Nottingham-World Bank Economics

Essay Competition 2021

“What would be the economic consequences for Malaysia if technology replaces 50% of current jobs in the country? Who would benefit, and who would lose? Would we be better off ultimately?”

INTRODUCTION

There are strong hint and evidence showing that robotics and artificial intelligence will be more advanced and will act as a main source of factor of production in the near future,2030.”The value of Artificial Intelligence (AI) and robotics around the world had grew from \$700 billion in 2017 to \$1.2 trillion in 2018 and is expected to be worth \$3.2 trillion by 2022.”according to an article in future timeline, published in 16th February 2019 (Fox, 2021).The value and significance of technology had been growing dramatically recently and there’s no doubt that it will continue to evolve and displace some of the jobs including high-skilled jobs in different economic sectors worldwide. Closer to our home, Malaysia as an emerging Asian economy to move towards technological driven and high tech-production-based economy, 5 in 10 jobs could be fully displaced or their nature will change completely as it co-exist and work together with automation. This obviously suggests that Malaysia, the 27th most innovative country in the world according to Bloomberg's latest Innovation Index ("The Malaysian Approach for Advanced Technology", 2021) will not be spared for these changes and consequences.

Technology had become commonly used and significant in the modern economy is because it gives big contribution such as higher productivity, efficiency as less mistakes are likely to occur. Therefore, automation and technological advancement becomes the determinant of economic growth. These are the following reasons that technology had brought such huge economic transformation over the years.

(i) The large pertinency of AI in various industries. Automation consists of various sectors such as advanced data analytics and cloud computing. These are not restricted in one industry only as it can carry out multiple tasks. Industries that are largely affected by AI did not only include manufacturing industry, it also played a big role among service sectors including healthcare, transportation, retail and finance.

(ii)The fast pace of progress developed by automation and technology. Nowadays, with the boom of information and communication technology (ICT), large networks of connected communication devices as well as the research and development done by the computing power had shocked the world by their pace of progress.

(iii)The substitution of labour and manual power. Bringing back to Malaysia, there are results showing that the labour productivity had declined from 2.8% to 2% of average growth of real value per added per employee per year (Fig1.2) and much far behind from other Asian countries

(fig 1.1) especially compared to the nearest country, Singapore that record to have the highest growth of labour productivity. As a result, it provides incentives for large firms to invest on technology and automation with a lower average cost and higher productivity compared to workers.

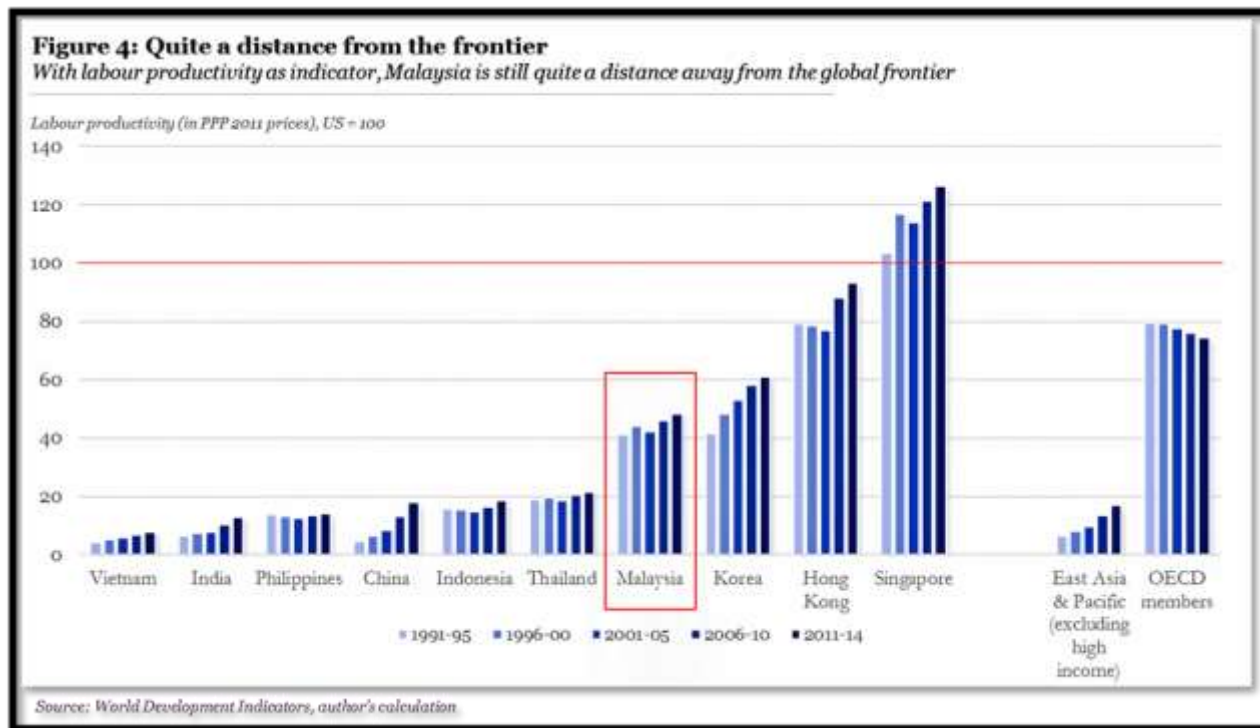


FIG 1.1: The trend of labour productivity in Malaysia.

Source: World development indicators, authors calculation

Technological had put a lot of jobs in various industries at risk, especially in developing countries. Recently, the findings from International Labour Organisation (ILO) study of the five developing countries published in 2016 (2021) showed that “Cambodia, Indonesia, Philippines, Thailand and Vietnam found that 56% of jobs will be displaced by current technological advancements on the next two decades while in developed countries such as USA recorded only 47% of jobs will be displaced.” According to study carried out by Frey and Osborne in USA(2013), *The Times They Are A- Changing?: Technology, Employment, and the Malaysian Economy*, (2021) that evaluated the probability and possibility that jobs being displaced by technology in the future: Jobs are high risk (over 70% will be displaced by automation) are usually involve regular, fixed routine and manual skills such as factory workers in the secondary

sector, clerks, telemarketer, clerks, paralegals in the tertiary sector are considered as high risk occupations. For medium risk occupations (30-70% probability that will be displaced by automation in the future) are mostly in the tertiary or service sector such as helpers, ICT technicians, executive secretaries, mechanics and repairers as these jobs usually combine both technology and manual skills. For low risk occupations (below 30% probability being displaced by automation) are usually non-routine jobs that require more cognitive skills such as social intelligence, creative thinking, high degree of perception or manipulation. For example, counsellors, teachers, engineers, and architects which are high skilled professions are more resistant to the advancement of technology.

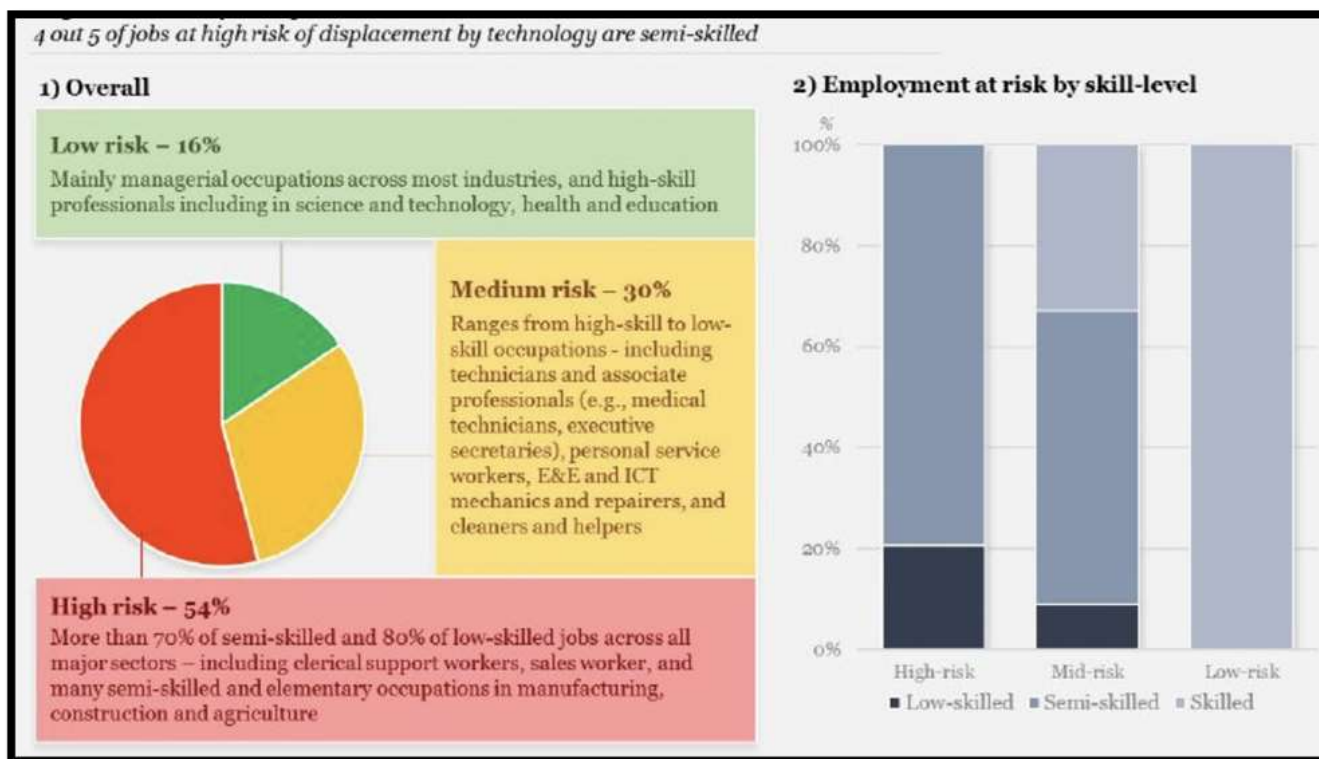


Fig 1.2: Malaysian jobs at risk of automation

Source: Methodology adapted from Grey and Osborne (2013) and ILO (2016), data from ILOSTAT and DOSM, author's calculation

In Malaysia, over 54% of all jobs will be replaced by automation in the following next two decades that the unemployment rate may pinch up to 3.4% to 3.6%. From the second chart in Fig 1.2, more than 70% of medium-skilled and low skilled jobs are at high risk across all the economic sectors. Skilled jobs cannot be spared as well, around 40% of skilled jobs are at

medium risk. Overall, semi-skilled jobs are the most likely being affected, as 4/5 jobs that are high risk of technological replacement are semi-skilled.

With the significant impact of the working population due to technological advancements in Malaysia are not only going to replace jobs and cause high unemployment rate in the next two decades. Moreover, some natures of the jobs are likely to be changed in order to work with artificial intelligence. As a result, the economic environment in Malaysia will face unprecedented stress and benefit as well with the boom of AI and technology.

As a result of high unemployment caused by technology mentioned above, there will be growing income inequality between skilled employees, technology developers and unskilled or semi-skilled workers. Since 90% of semi-skilled and low -skilled workers are Malaysians. It is the fact showing that semi-skilled are most at risk of unemployment, the current form of labour saving technology could reduce the reliance on these workers, leaving them under-employed and without jobs completely in the long run due to hard transition between jobs whilst the high skilled workers are mostly keep their jobs and earnings secure as they will continue earn higher wages due to low supply and high demand of workers. The manufacturers or technology developers will benefit from labour-cost advantage and will continue earn higher profits. With the worsen gap between high-income and low-income earners, this will cause a negative impact on economic growth as many low income/unemployed workers are left behind in the fast pace of technological advancement which the factors of production are not used in full capacity especially labour.

Looking at the good consequences of automation to the whole Malaysian economy, AmBank research had expected that “due to the growing digital economy, which is expected to contribute 20% of the national Gross Domestic Products by 2020.” (“Digital economy and automation to impact Malaysian labour market”, 2021) and the contribution of ICT and other forms of technology had contribute a larger proportion of Gross Domestic Product over the years in Malaysia in the fourth industrial revolution. It is a fact that technology has high productivity as it either complements or substitutes labour: as a factor of production. When technology produces more than labour at the same cost or allow workers to become more productive, it lowers the cost of production and allow mass production which lowers the price at the same

time. So, consumer is likely to spend more and lead to the evolution of consumerism that raises the standard of living, so there will be more money circulating in the economy.

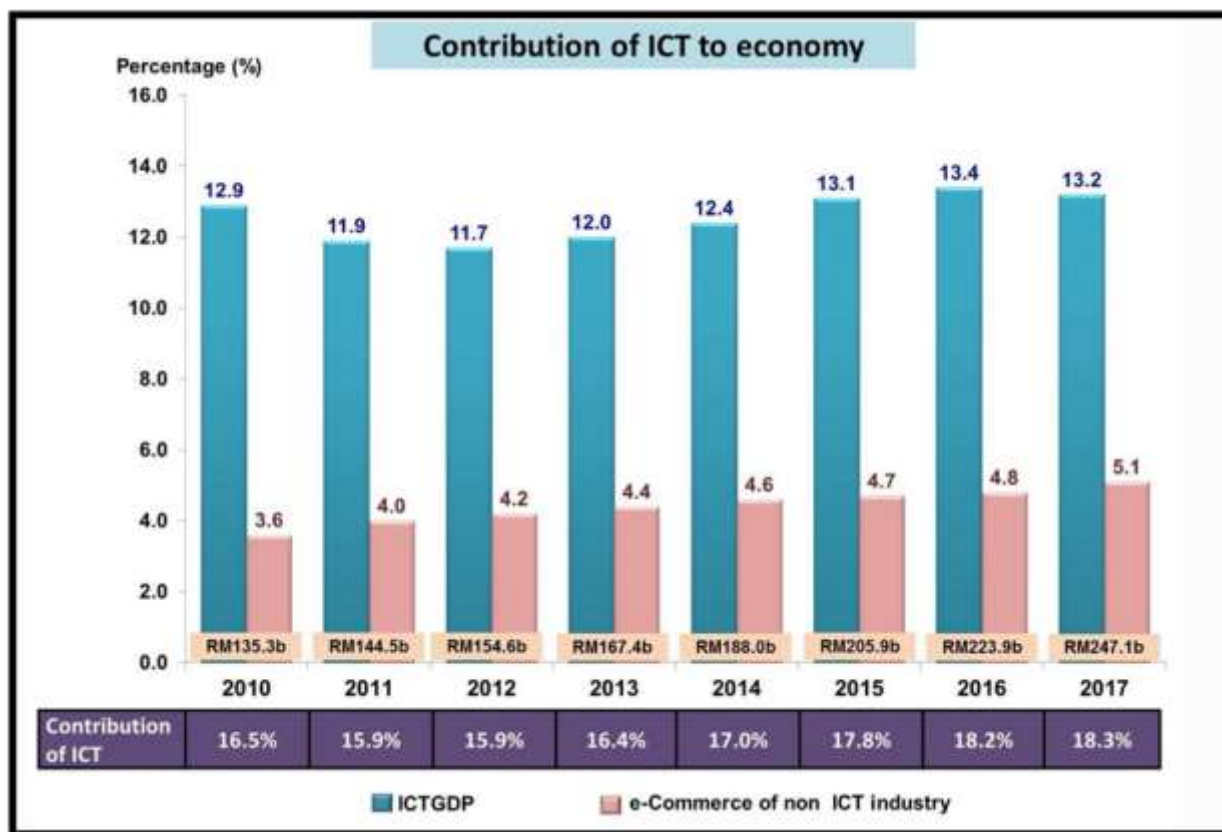


Fig 1.3: Contribution of ICT to Economy

Source: Department of statistics, Malaysia

As mentioned by the high unemployment created (around 50% of traditional jobs being displaced) above, however, technology is a “job creator” at the same time. With the development of machines enhances mass production that will lead to more spending, so more jobs will be created .In order for workers to complement with machines, more new jobs will be created such as computing specialists, energy engineers, social media managers, digital marketers that will compensate for the loss of jobs created when technology was first introduced. However, this takes time for worker to switch between industries and retrained which may happen after a few decades especially for low and medium-skilled workers. For example, in Malaysia, the new development of 5G technology are set to create 39,000 IT-related jobs according to Bursa

Malaysia Bhd. chairman Abdul Wahid Omar (Teo, 2021). The new jobs created by technology will also have high demand in the market in Malaysia as it requires more skills such as creative thinking, the ability to provide strategic advice to companies that exceeds the capabilities of new technology.



Fig 1.4: (Top 10 jobs that will be created and displaced by technology in 2022)

Source: Future of Jobs Report 2018, World Economic Forum

Economic stakeholders being affected by growth of automation.

(Who loses and who benefits?)

Technology has brought possible advantages and disadvantages to the whole world and our economy, which Malaysia, would soon become a high-income country with the adoption of technology.

Not only that, but Communication technology also speeds up globalisation which businesses have strongly benefited from it especially medium and large sized corporations. They are able to introduce e-commerce that attained worldwide exposure and able to enter and compete in a global market. Also, communication technology enables businesses to have virtual conference online with partners across the world. Also, machinery enable businesses to maximise their output level and profits. It also brings benefits to the consumer as well, which the price of goods and services falls due to lower average cost and increase in supply when the productivity increases, at the same time the quality of goods and services had also improved.

However, technology is “job destroyer” as well. Many of the workers with low qualifications are “losers” to the boom of technology, as being displaced by technology will seek new employment using their pre-existing skills but as their skills does not match, they will face limited opportunities which they will soon pursue jobs with lower earning potential, even it means accepting a lower income and living standards.

CONCLUSION

Technology has driven our world, not only Malaysia, to move towards a modern and digital economy that we will be living in the future. It brings both pros and cons to our economy such that it plays a big contribution on economic growth and productivity which Malaysia's digital economy is worth over RM 270 billion of Gross Domestic Products and will increase the living standards permanently but will replace 54% of the jobs at the same time that will cause high unemployment.

All of the economic stakeholders are not spared for these positive impacts and negative consequences that technology has brought to our world. So, would we be better off ultimately? It depends on how we make use of technology, by letting it complement or substitute us and how much we will depend on new technology. It all depends on our own choice and decisions. Nonetheless, technology and the fourth industrial revolution has brought humans and our world into a new era.

(1822 words)

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