ECOSOC

STUDY GUIDE

BOĞAZİÇİMUN 2021

Letter from the Secretary-General

Dear Participants,

It is an uttermost pleasure and honour to announce that the third annual session of Boğaziçi Model United Nations will be held from Friday, March 12 to Sunday, March 14, 2021, in an entirely online format. During these unprecedented times, the spirit of Model United Nations has never been this much value to our world. From pandemics to financial crises, the hardships our world is facing undoubtedly requires international cooperation and collaboration. Ever since our establishment in 2017, we have been pursuing the goal of enriching and enlightening the young minds with international politics. Despite the handicaps, we will continue moving forward in our mission, because this year, our world needs these young minds more than ever.

Unfortunately, the only safe way to establish this important dialogue between young minds is doing so in a virtual format. While we cherish the opportunities provided by the physical space at our campuses, the ongoing COVID-19 pandemic makes it highly unsafe to gather large numbers of people from around the world in an indoor setting. Thus, the conference, including the formal and informal committee sessions, will be conducted via Zoom and other online platforms. As with the previous iterations, the procedure of our conference will be majorly based on the Harvard MUN procedure.

This year, our academic and organization teams devoted months to properly convert the indispensable traditions of Model United Nations into an online environment, aiming to appropriately facilitate the Harvard MUN procedure. In light of our efforts, we are excited by the innovations demanded by this unique iteration of the conference. In order to make use of these innovations, our academic team prepared three unique committees to touch base with the core issues recurring for a long time. Each individual committee will endorse the future diplomats of today in order to have them resolve the longstanding conflicts via diplomatic negotiations.

Ultimately, I would like to conclude my letter with a quote from Guy Gavriel Kay: “A hand fought best when it made a fist.” That said, never forget that the United Nations became a thing once the nations were united. Let us all unite and fight for a new world to do away with evil. Let this spirit of union bridge the gaps, once again.

With solidarity!

Ümit Altar Binici

Secretary-General of BoğaziçiMUN 2021

Letter from the Under-Secretary-General

Esteemed participants,

I would like to start by welcoming you all to the third annual session of Boğaziçi MUN. My name is Didem Özçakır. I am currently studying both economics and political science and international relations at Boğaziçi University thanks to our double major program. I am the under-secretary general of ECOSOC and I am more than excited to have this committee with my academic assistant Selin Ayaz.

Economics is the thing that I love the most in my life, thus preparing this guide and being the USG of this committee is a real pleasure for me. While preparing this guide I tried to keep it as simple as possible. I strongly advise you to read the guide carefully because it not only gives some ideas about our committee, but it also gives some fundamental ideas about the science of macroeconomics. The knowledge of economics will help you everywhere in your life, you will more easily understand the news and debates. Experience talking, learning about economics is one of the best things that you can do to keep yourself busy in the midst of a global pandemic.

Besides, I am writing this study guide at a house in İstanbul that is full of my closest friends, who are constantly partying. Whenever you feel like you got bored and do not want to keep on reading, please remember how much effort I gave and do not give up.

Lastly, I would like to thank our secretary general Ümit Altar Binici and Deputy Secretary General Şebnem Yaren. Being a USG in Boğaziçi MUN has been my dream since the starting point of my 6 year long MUN journey. They made this dream come true. I also would like to thank my academic assistant Selin Ayaz for her support and most importantly for her friendship.

If you have any questions, please do not hesitate to contact me from dozcakir@gmail.com I wish you all a fruitful conference in which you will improve your general knowledge.

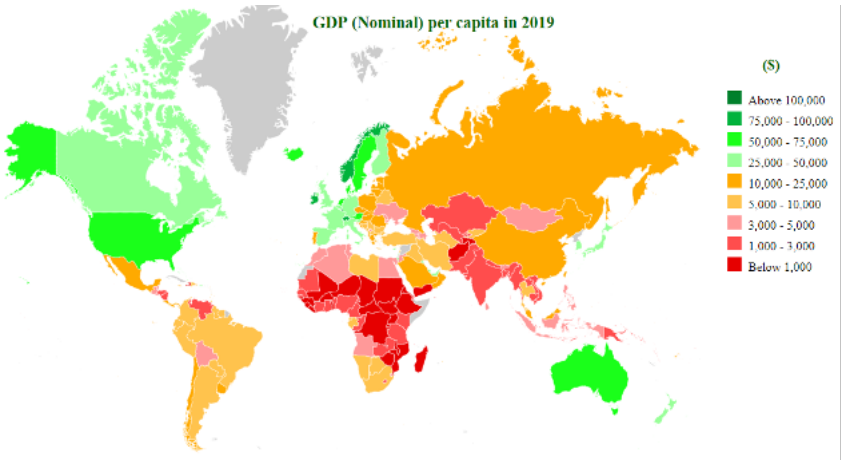
Best regards,

Didem Özçakır

Table of Contents

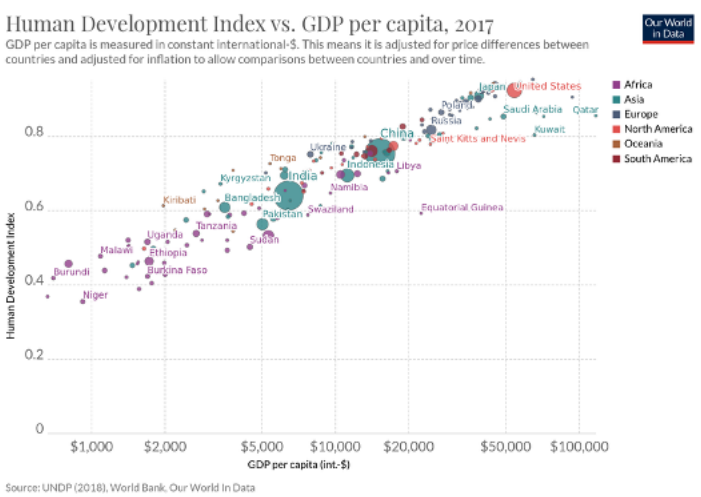
I. Introduction

Economic growth is one of the most important topics in macroeconomics and countless research has been done regarding the topic. The reason why it is popular is because it directly concerns billions of people's life standards'. Most recent and widely accepted growth theory suggests that increases in the level of technology is the *only* source of continuous economic growth, thus our agenda poses utmost importance for wellbeing of nations. Below is a map showing the GDP per capita levels of different countries to make you understand how economic growth increases overall welfare.



We can examine the issue from a different point of view as well. Most of the Model United Nations conferences are about trying to solve societal problems such as education, health and security. The index that shows a nation's overall status in these societal areas is called the Human Development Index (HDI). One of the best things about economic growth is that there exists a positive relationship between the HDI and GDP per capita of nations. In other words, increasing the GDP per capita level of nation can serve as a fundamental solution that will substantially improve all the other problems a nation faces. Below is a chart showing this positive relationship. (GDP per capita is at natural logarithm scale, so interpret the data according to that.)

Before starting, it is important to clarify a very important point. When one thinks about technology, it is natural to first think about sophisticated robots and AI. However, our committee's scope is not limited to this. Better methods in agriculture, faster ways of construction, better infrastructure or more efficient production techniques in factories are all examples of usage of technology.



In this study guide we will first start by examining the fundamentals of growth theory and show that usage of technology and increases in productivity is the only source of continuous economic growth. Then we will keep on going with examining the theory of institutions to understand why some nations are successful in creating ever growing economies whereas others are not. The last part will be about some brief policy recommendations to serve you as a starting point during your brainstorming. In your research, please keep in mind that our agenda item is directly related to the Sustainable Development Goal 9, first 3 targets. There are guidelines and real resolutions that are created by the real ECOSOC for this exact agenda item, they might be useful for you. You can also consider different sectors separately during your research, debate and resolutions.

II. How Do Economies Grow?

A. Modeling the aggregate economic activity in a country

Gross domestic product (GDP) is used to measure the aggregate economic activity within a country. If two chocolate bars each worth 10 dollars are sold, this raises the GDP by 20 dollars. The same logic applies for each and every transaction within a country and we get the overall GDP. GDP per capita is the total GDP divided by a country's population, thus it gives how much GDP we have per one person. GDP per capita is the tool that is widely used to measure the life standard in a country.

We also have real and nominal GDP. We get real GDP by adjusting the nominal GDP for prices. In other words, real GDP takes changes in prices into account while calculating the GDP, thus it is a better variable for measuring life standards. When

we talk about continuous economic growth, we are thinking of the constant increases in real GDP per capita.

When we talk about continuous economic growth, we are thinking of constant increases in real GDP per capita.

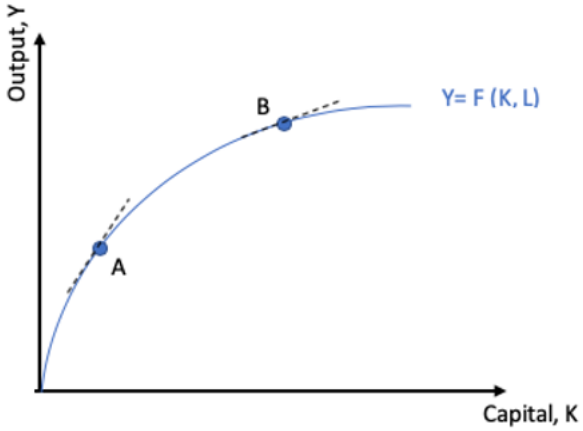
The total GDP of a country can be found by adding up all the transactions that occur within the country. These transactions can be classified in five different categories. Consumption is the first category, and it refers to the things that households buy, such as clothes and chocolate bars. The second category is investment, and it refers to the inventories and machinery that are bought by firms and used for production. Construction and items such as cars and washing machines that are bought by households are generally considered under investment as well. In our dailylife we generally use the term investment as buying gold, stocks, bonds or dollars. In macroeconomics, investment never refers to this. The third category is government expenditures. It refers to the things that are bought by the government. The fourth and fifth categories are about international trade: imports and exports. We can summarize the GDP of country as the following:

$$GDP = Consumption + Investment + Government + (Exports - Imports)$$

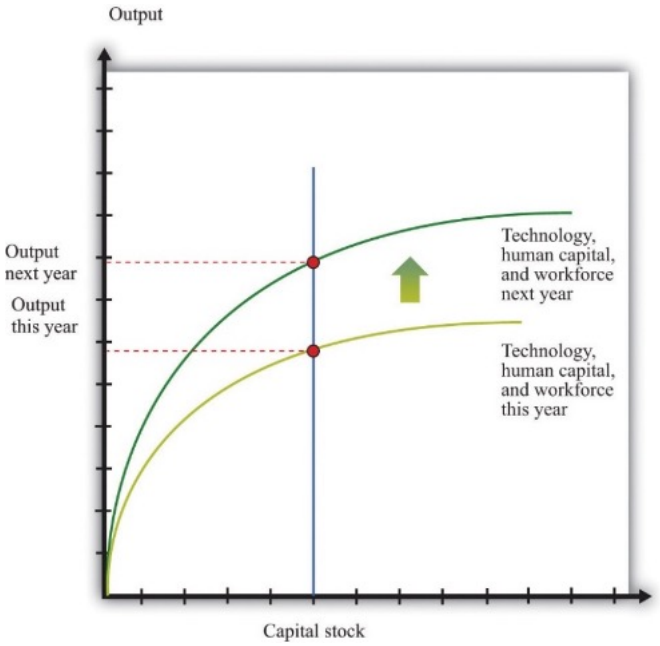
All of these can be separated to its own subfields; however, we will only focus on the investment part. We will also not focus on the exports and imports part since fundamental growth theory is constructed within a closed economy. As you might have noticed, the application of technology concerns investment. You get more sophisticated equipment for your factory to make your production more efficient. The logic is very simple: Let's consider you first had 10 people producing 100 units. You make some investment to your factory to make your production more efficient. The same 10 people can now produce way faster, thus they will produce 200 units now. Before you got more sophisticated equipment, each worker had only 10 dollars for themselves, assuming the good was sold for 1 dollar. After the investment in technology each worker now has 20 dollars each. This is the most basic example for how technology makes real GDP per capita grow over time.

Investment is used for production and the overall production is studied using production functions. While considering production functions, we mainly assume that production takes place with two inputs: capital and labor. (Capital denoted by K and labor denoted by L from now on.) The level of technology is denoted with A, and it multiplies all of the function. Thus, the production function takes a form such as:

$$Production(GDP) = A \times f(K, L)$$



There are two important properties of this function. When you fix one of the inputs to a certain level and demonstrate the relationship of the other one with output you get the above graphic. This graphic show that the more you increase the input, the slower becomes the increase in output. This is called marginal diminishing returns. Increasing labor force or the same capital level increases output, but at a diminishing rate. However, increases in technology multiplies the whole function, so the law of marginal diminishing returns does not apply here.



The overall lesson from here is that, even before starting to examine growth theory we can see that increasing technology level is the most *efficient* way for growth. The shape of the function states that increasing your capital level by two will increase the output by only 1.5, however increasing technology does not have such limitations. You can increase technology by 2 and the output can even grow by 5.

You might ask yourself why the function exhibits such a shape. Eventually this is an assumption, but it is backed up by empirical data. Imagine you had 5 computers and 4 engineers. The fifth one will increase your overall output. Employing the sixth one will also increase the output, but since the number of computers is limited, it will not do as much good as the fifth one. You need to increase both the labor and capital simultaneously to not be a victim of marginal diminishing returns.

B. Technology is the only source of sustainable economic growth: Solow Growth Model

Although it is far from being perfect, the Solow growth model serves as the fundamental growth theory in macroeconomics. We start by modifying our production function a little bit. If you divide both sides of $Y = A \times f(K, L)$, with L, you get a new function $y = A \times f(k)$. This new function relates capital per worker (k) to output per worker (y). The function's shape is the same with the aforementioned general production function.

We will put this aside for now and bring in another building block of the Solow model. Let's assume that an individual's consumption equals a certain fraction of their current disposable income. An individual saves up a certain fraction and consumes the rest of their disposable income. Thus we can write *consumption=(1-saving rate)×income* or in a shorter way $c = (1 - s) \times y$. (Although it is not explained here, an individual's output equals their real wage.)

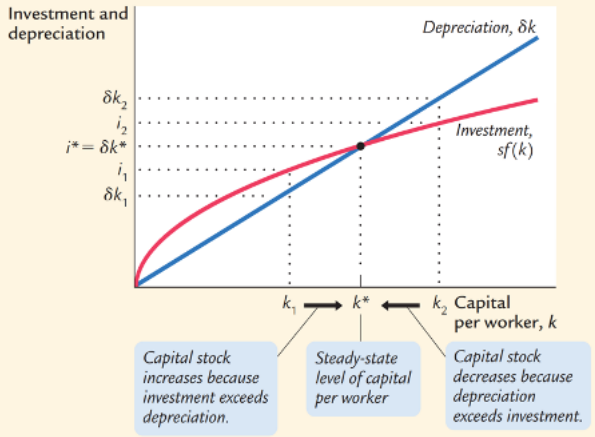
If we consider an economy where we do not have any government purchases for simplification, we get the following identity: $y = (1 - s) \times y + i$ where i equals investment. A bit of rearranging mathematically gives us $i = s \times y$. Verbally this means savings in an economy equals investment. This might look a bit confusing at first, but it is simple. You can either consume or save your income. Besides, the total income Y also comprises of consumption and investment in a world where we do not have any government purchases. Thus, investment should be equal to savings.

Another way to imagine this is through the banking system. When you save, you put your money at a bank account. The bank gives out loans to people using this money that you gave and pays you some interest. This means your savings are being used for investment and they should be equal. We can also write $i = s \times f(k)$ where f(k) is the production function and equals total output.

Another building block of the Solow model is depreciation. Your existing capital tears down and gets old in time, and this is called depreciation. You make some investment and your machinery eventually tears down in time, so you need to make new investment. This depreciation and tearing out is linear, so a certain fraction of our s×f(k) depreciates each year. We can write *depreciation = depreciation rate × capital* or more easily *depreciation=d×k*.

Each year the change in the total capital stock of the country can be calculated with this information. The capital stock increases by s×f(k), which equals investment, and decreases by d×k, which equals depreciation. The economy will reach a steady state at the point where depreciation equals investment. One more unit of investment after this point will depreciate so it is useless to make any investment. Before this point, people have an incentive to make investment because it will not depreciate yet and will make returns.

FIGURE 8-4



Investment, Depreciation, and the Steady State The steady-state level of capital k^* is the level at which investment equals depreciation, indicating that the amount of capital will not change over time. Below k^* investment exceeds depreciation, so the capital stock grows. Above k^* investment is less than depreciation, so the capital stock shrinks.

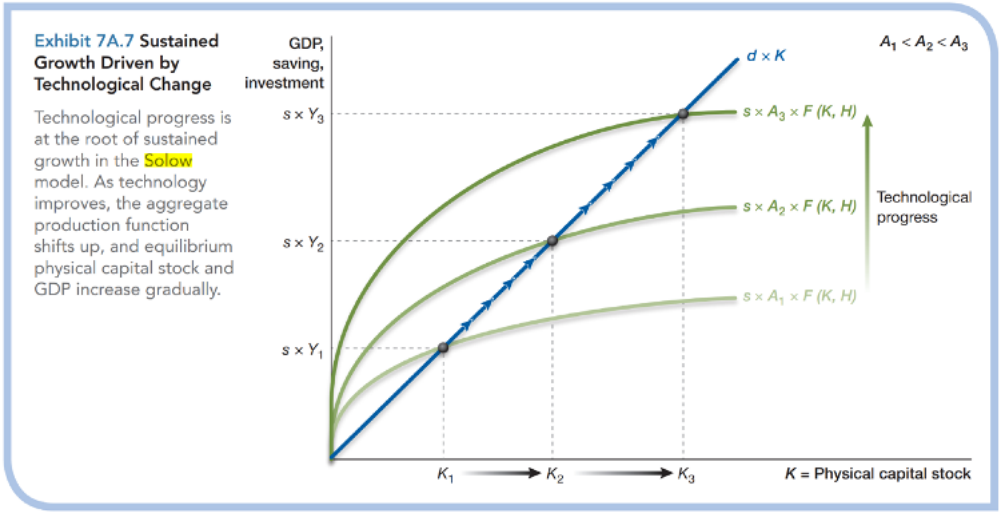
After an economy reaches its steady level the change in output is zero, thus there is no continuous economic growth after this point. However, when we look at empirical data we see that there exists continuous growth of GDP. This

difference exists because our model so far does not take into account population growth, changes in saving rate, human capital and *changes in technology level.*

Starting with population growth, it can explain the growth in overall GDP but does not account for increases in real GDP per capita. In other words, a country has to grow to reach the new steady state with their new population, thus overall GDP has to change. However it would be illogical to say GDP per capita will increase only with increasing population.

Changes in saving rate also increases real GDP per capita in the long run. We can find the optimal saving rate that maximizes consumption and there exists policies to change the saving rate, however these are not about our agenda item. If you want to know more about this for your general knowledge feel free to email me, I would be more than happy to help.

The last and most important point is about the effects of technology. As mentioned before, increases in technology means you are multiplying the production function with a scalar, meaning that all of the function will shift upwards. This means we now have a higher steady state level. Note that there is nothing but changes in technology that can cause a continuous upward shift of the function like this, thus *technology is the one and only source of continuous growth in real GDP per capita.*



C. Fundamental Differences in Growth: The theory of institutions

So far we have examined how growth occurs. However, we did not address the question why the capital, labor and technology levels in different nations differ from each other. In short, we are trying to answer the question "Why are some nations poor while the others are rich? What are the fundamental causes for economic growth?" Answering this question is important to understand what we need for the application of necessary technology in a nation. One can bring many different answers to this question such as saying that these fundamental differences occur due to differences in geography or culture. In recent years, the science of economics has brought up a much less deterministic answer to this question as well. This theory states that the differences in economic institutions and legislative systems of countries constitute the main differences in growth.

To understand the idea of institutions let's put ourselves into the shoes of an entrepreneur-investor. Let's say there are two countries, A and B. In country A there is a strong legislative system, financial stability and a reliable banking system. In country B there is corruption, so you can never trust the system. The chance of you losing your money and not making any profit is much higher in country B than in country A. In country A you know that if you go through any problems you can trust the legislative system; you know that there will not be any surprise taxes from the government and you know that if someone gets a job or credit from banks it is not because of friends at court. These are all very strong incentives for you to invest in country A rather than country B. These things such as the strong financial and legislative system are all referred to as institutions within a country.

There are two types of institutions: extractive and inclusive. Extractive economic institutions refer to institutions that are shaped in the interest of a political or social elite. There exists an unequal competition between this political elite and the rest of the country in such institutions. Since the democratic and legislative system is not very powerful, ordinary people do not have enough power to reshape their institutions. In inclusive economic institutions, the system is shaped so that everybody has equal chance in starting their own business and being successful.

Without the existence of inclusive economic institutions or at least strong legislative protection there would be no incentive for firms to apply new technology in their plants or make any investment at all since they face the risk of loosing their investment in the face of political instabilities. What the international community can do is to provide country specific guidelines for the creation of democratic and strong inclusive economic institutions.

As a natural experiment, North Korea and South Korea constitute a perfect example for the importance of institutions. After the Korean war of 1950s, South Korea adopted inclusive economic institutions in their country under Western influence and different national dynamics. North Korea was under strong Soviet influence, they eventually created a communist dictatorship. In 70 years that has passed, South Korea became one of the wealthiest nations of the world whereas a vast majority of North Korea's population is under the threat of starvation.

III. Possible Policy Ideas

A. Role of Universities

Effective usage of universities is perhaps the most important thing for improvement of innovation and technology. The role of universities can be examined in three main domains: creation of knowledge, transforming this knowledge into marketable products and supplying qualified labor.

To create scientific knowledge in universities two fundamental conditions must be met. The first one is having an atmosphere of freedom in universities. The second one is about providing enough budget and physical conditions. Imagine that you are a professor. If a university has enough budget and freedom so that you can freely

conduct your research without any substantial restrictions, you will decide to stay at that university. Improving the conditions in universities, for example not playing with their democratic culture and not appointing rectors, would also prevent brain drain for developing nations since professors would have an incentive to stay in these countries. Improving the conditions would also increase the motivation of the professors who chose to stay. They would have the opportunity, time and energy to spend on their research instead of spending their time in protests or bureaucratic processes for getting budget for their projects. Improving the international connections of universities and increasing the professors' secondary language skills are also important for keeping the research up to date.

The second point is about practically applying this knowledge to create marketable products. Most of the universities use technopoles for achieving this. Technopoles are areas inside of universities that operate with reductions in taxation, providing subsidies and low rental prices for firms that are located there. Their main goal is to provide a place for professors and businesspeople to meet and create marketable products using the professors' research.

The last issue about universities is the creation of qualified labor. Increasing the human capital of a country makes the innovation process much easier and makes the production process more efficient. Thus, making sure that universities seriously provide qualified education is an effective idea for facilitating the application of technology.

B. Subsidies for R&D and Entrepreneurship

Governments can provide subsidies to research and development facilities of private and public institutions. However, ensuring that effective projects get the money poses utmost importance here. If the government gives out money to a political elite in the name of subsidies, this will not be an efficient usage of resources. Governments can identify sectors that they want to improve and give out financial subsidies to firms who are working for research and development of new products in

these domains. Governments can also use and form public research facilities. The cost of doing research and development is enormous, so trusting the private sector might not be a good idea for research and development especially in the developing nations since the private sector does not have enough capital for such big investments. In these kinds of situations, the governments can act as catalyzers for innovation and create strong research facilities in collaboration with state universities.

The precondition for these policies to work is to make sure that both subsidies and public research facilities are being used in the most efficient way possible. If this money and resources are being used to feed the family and friends of a political elite in the form of corruption, the money that is got through taxation is simply wasted. Transparency and feedback mechanisms while using money is very important. Governments can bring up transparent criteria for projects that will receive money, which are publicly supervised. There has to be some working mechanisms of feedback and objection, so that the public will have the power to inspect the usage of their taxation as subsidies.

C. Creative Destruction-Unemployment Caused by Technology

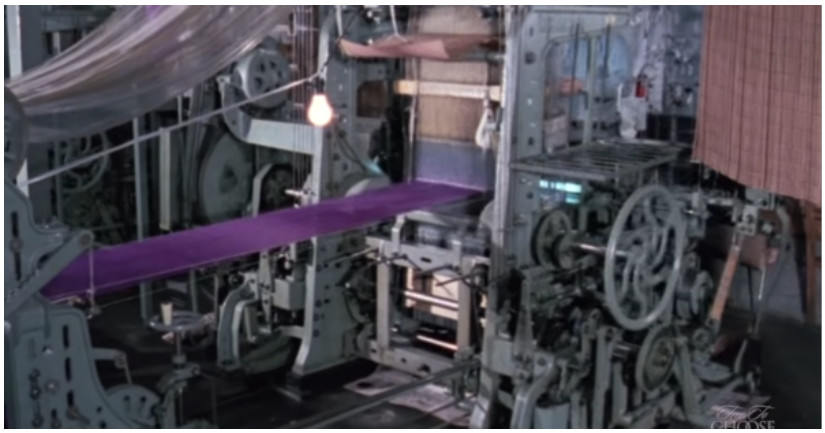
When we think about new technologies and automation, structural unemployment is one of the issues that come to our minds. Structural unemployment refers to the people who lose their jobs in the face of technology replacing their jobs. The skills and knowledge of workers become no longer needed in the market due to the advancement in technology. For example, consider the case of a secretary in 1980s. Their typewriting skills become no longer needed when there are better working computers, thus they find themselves unemployed.

Creative destruction is basically the process of older technologies and older skills being replaced by new ones. We stopped using horses in favor of cars, and we decided electricity was more efficient than steam engines. This meant we had to leave jobs about horse breeding or steam enginery behind. Instead, we adopted

faster, and efficient technologies and the labor market also adapted to this change. This process of adopting newer technologies is called creative destruction and it is a natural element in the application of newer technologies. We will now try to understand why it is a good thing to let creative destruction happen, even if it is at the expense of some unemployment.

We will start this with an example. Let us compare the case of Indian textile workers with Japanese textile workers during the 1970s. Although it looks like it is an oddly specific area, it constitutes a perfect example for as to why permitting creative destruction to take place is very important. India adopted a state-led protectionist economy after it got its independence, following the mainstream economic trend in the world. At the same time, Japan was trying to recover from its wounds of the second world war and adopted a free market economy with limited state intervention. In the 1950s, the textile industries of two countries were pretty much the same: thousands of people produced handmade clothing using traditional techniques. The process required a lot of time, energy, and manpower so it was not efficient. During the last half of the 1950s, newer technologies to textile industry were introduced. These new machines did not require any handmade knitting process, they were automatic and fast. Having adopted a free market economy, Japanese government did not pass any laws to “protect their textile workers”, but instead they let the full application of the more efficient new technology in the face of some unemployment. In India, the story was very different. The government passed laws and subsidies to protect their traditional textile industry and thousands of workers there, so the new automatic machines were not adopted. People still used hand made knitting techniques. The difference in the long run was drastic: In a few decades Japanese textile production was more than 40 times than that of India. With that production, in the long run, more people had more income and prosperity. The end results in 1980s is below.

Indian Textile Work in 1980s



Japanese Textile Work in 1980s

The main idea that we should get from here is that it is not a good idea to have state intervention to protect older technologies. The markets will decide which technology is the most profitable and cost efficient to use, and it will also deliver the socially optimal output in the long run.

One might naturally ask, but what about unemployment? There are several different government policies that might be applied which are oriented towards making the blue-collar workers acquire new skills. If done properly, governments can start programs so that blue-collar workers will acquire skills that are needed in the labor market. Technology might be applied in one domain reducing job opportunities, but there will always be other domains in which people will be able to work. There will always be some level of unemployment created in the face of newer technologies, but it is still worth it for better welfare in the long run.

An issue that is even more severe than unemployment is underemployment. People who have lost their job due to technological changes might find another job in

another sector, but this job will most probably be lower paying, so the real wages of people will go down. This phenomenon is used to explain the increasing income inequality in United States. One way of preventing this is implementing stronger social state policies, however this also comes with its own cons, mainly by increasing the natural unemployment rate.

D. Intellectual Property Rights

Proper application of intellectual property rights serves utmost importance as an incentive for people to develop new technologies. If you believe that your country's legal system has gaps and is not strong enough to ensure you have full rights over the usage and marketing of your new product, you will not have enough incentives to develop the product in the first place.

First, you need to make sure that a patent that is taken in your country is also internationally protected. A coordination body for this specific purpose might be useful. Second, you need to make sure that applying for patents does not require unnecessary bureaucratic processes. Lastly, the intellectual property laws within the country should not have any legal gaps and they should be strictly enforced.

IV. References

1.List of Countries by GDP (nominal) per capita. (n.d.). Retrieved from https://statisticstimes.com/economy/countries-by-gdp-capita.php

2.Roser, M. (2014, July 25). Human Development Index (HDI). Retrieved from https://ourworldindata.org/human-development-index

3.Mankiw, N. (2016). *Macroeconomics* (9th ed.). Worth. Chapter 8-9.

4.Acemoglu, D. (2012). *Why nations fail*. Random House.

5.Acemoglu, Daron, et al. *Macroeconomics*. Pearson, 2019.

6.Free To Choose 1980 - Vol. 02 The Tyranny of ... - YouTube. (n.d.). Retrieved from https://www.youtube.com/watch?v=CWgNe8v6KFc