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The Impact of Covid-19 on the Economy of Selected Asian Countries

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ABSTRACT

This study aims to discuss the impacts of Covid-19, which emerged in China in December 2019 and has affected the whole world in a short time, through some selected Asian countries. Covid-19 is not only an pandemic that has an impact on health but also an outbreak which has deeply shaken the countries' economies and pushed them into crisis. Like all countries of the world, Asian countries have been affected by Covid-19 outbreak. The countries in our study (South Korea, Singapore, Vietnam and Taiwan) responded very quickly to Covid-19 and were cited as examples all over the world due to their success at the onset of the outbreak. In this study, it was discussed how these epidemiologically successful countries react economically. In other words, we discussed the effects of Covid-19 on macroenonomical variables of the selected countries such as GDP, unemployment, inflation and foreign trade. Comparative analysis method and descriptive analysis method were used in the study.

Keywords: Covid-19; Economic Impact of Covid-19; Asian Economy; Fiscal Responses.

JEL Classification: E0, E62, E63, I1

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RESUMEN

Este estudio tiene como objetivo discutir los impactos del Covid-19, que surgió en China en diciembre de 2019 y ha afectado a todo el mundo en poco tiempo, a través de algunos países asiáticos seleccionados. El Covid-19 no es solo una pandemia que tiene un impacto en la salud, sino también un brote que ha sacudido profundamente las economías de los países y las ha empujado a la crisis. Como todos los países del mundo, los países asiáticos se han visto afectados por el brote de Covid-19. Los países de nuestro estudio (Corea del Sur, Singapur, Vietnam y Taiwán) respondieron muy rápidamente al Covid-19 y fueron citados como ejemplos en todo el mundo debido a su éxito al inicio del brote. En este estudio, se discutió cómo estos países epidemiológicamente exitosos reaccionan económicamente. En otras palabras, discutimos los efectos del Covid-19 sobre variables macroenómicas de los países seleccionados como el PIB, el desempleo, la inflación y el comercio exterior. En el estudio se utilizaron el método de análisis comparativo y el método de análisis descriptivo.

Palabras clave: Covid-19; Impacto Económico del Covid-19; Economía Asiática; Respuestas Fiscales

Clasificación JEL: E0, E62, E63, I1

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1. Introduction

The Covid-19 is a type of virus that originated at a seafood market in Wuhan, Hubei Province of China, in December 2019. As a result of not understanding the severity of the situation at first, and the Chinese government being late (or deliberately hiding) in both intervening and reporting cases, the virus began to spread very quickly to the other countries. The virus that first spread to Asian countries (Chen et al., 2020) has also been seen in other countries. Because the virus, which spreads very quickly and secretly, begins to show symptoms on average in 4-5 days, it has also been easy to transmit from person to person. A certain amount of time on surfaces and objects was also effective in spreading the virus. The World Health Organization (WHO), which is responsible for overseeing and managing the World Health System, was also late in participating in the process and made an indirect contribution to the rapid course of the epidemic at first. WHO's first response to the outbreak was to declare it "a global emergency" on January 30, 2020. But many scientists claimed that the virus spread long before this date, and measures were late (Kaye et al., 2020). Later, as a result of the rapid spread of the virus, WHO declared Covid-19 a pandemic on March 11, 2020 (Sohrabi et al., 2020) which was very late. Because on March 11, the virus had already infected many countries and thousands of people. At that time, 80,795 cases and 3,158 deaths were recorded in China; 99,896 cases and 3,605 deaths in Asia, and 126,702 cases and 4,611 deaths worldwide (ourworldindata.org).

The most important effect of Covid-19 is on health, but it has also had a very devastating effect on the economies of countries. Covid-19 is the largest economic pandemic in human history since the Spanish Flu of 1918-1919 (Gorain et al., 2020). For economists, Covid-19 is the crisis that affected countries the most economically after the economic crisis of 1929 which is also known as The Great Depression (Siddiqui, 2020). So much so that the WHO's declaration of COVİD-19 as a "World Health Emergency" affected the global economy by nearly 90 trillion US Dollars (Boissay and Rungcharoenkitkul, 2020). Because of the outbreak, global GDP due to economic disruptions decreased by more than 4.9% in the second quarter of 2020 (Padhan and Prabheesh, 2021: 222). The decline in trade in goods and services is higher than in the global financial crisis of 2007-08 (IMF, 2020). An important feature of Covid-19 is that it affects not only poor countries, but also developed/rich countries. Of course, countries with strong economies gave faster and more effective responses economically, if not epidemiologically (Spain, Italy, the USA during the first phase of the pandemic). But this has not saved them from the financial effects of the pandemic. The G7 countries, the world's largest economies, and China are among the most affected countries by Covid-19 (Baldwin and Weder di Mauro, 2020).

It is known that pandemics affect public health, the health systems and the economies of countries. Often countries remain between public health and the market and have a dilemma in producing policies against such outbreaks. The market has never been ignored, but mostly the hand has shifted to the public health side. Even in economically fragile countries, money can often outstrip health. Governments can push health back so that their economies, which are already at a standstill or are progressing smoothly, do not worsen. But we must not forget that healthy economies are only possible with the presence of a healthy society/labour force. Some opinions suggest the opposite. According to these views, public health is also directly proportional to economic growth and prosperity (Haacker, 2004). If the economy and the country's welfare level are high, the state of the society's health is also high.

Governments are experiencing tides in the economy-health dilemma, while at the same time taking various measures to slow down the pace of the outbreak. Because SARS-CoV-2, unlike seasonal flu, causes a high rate of loss of life and puts pressure on the health systems of countries. To prevent this, governments have introduced measures, also known as non-pharmaceutical measures (NPIs). NPIs are the most effective method of combating with outbreaks such as Covid-19 (until a vaccine or treatment is found) and are generally implemented in two different ways, as a containment strategy and a mitigation strategy. Personal protective measures, travel-related measures, environmental measures and social distance measures are non-pharmaceutical measures referenced in pandemics. Of these

measures, especially measures related to travel and the effects of social distance measures have a significant impact on the countries' economies. Measures such as closing non-essential shops, closing food and beverage shops or continuing their business with services such as takeaways only, partial or complete closures can have significant effects on unemployment. The purpose of this study is to discuss the economic impacts of Covid-19 on some selected Asian countries from the macroeconomic point of view.

This paper is structured as follows. Section two presents the theoretical background. Section three gives information about the methodology of this study. Section four covers the results of the study. The results are discussed under two headings: health impact and economic impact of Covid-19. Section five is the discussion part. In this section, we analysed and discussed the results of this study. Finally, conclude the paper.

2. Background: Pandemics, Responses to Pandemics (NPIs) and Their Economic Impacts

Before talking about pandemics, it is useful to describe some concepts (infectious disease, endemic, epidemic and pandemic) that can sometimes be used interchangeably. An infectious disease is any disease caused by an organism that enters (infects) the body from outside. If an infectious disease affects more people at any given time, it is considered endemic to a particular region (Youngerman, 2008: 5). An epidemic is the occurrence of an infectious disease that affects many people at the same time, which is not normally present or rare in a particular region and population (Piret and Boivin, 2021). In other words, an infectious disease qualifies as an epidemic if it quickly infects many people.

Pandemic is a word derived from Greek. It is a combination of the words "pan" which means all and "demos" meaning people (Maital and Barzani, 2020: 4). A pandemic is the name of an epidemic on a very wide geographical scale that is observed worldwide or at least affects a large area of the world (Hays, 2005; Piret and Boivin, 2021). Pandemic is a globalized form of an epidemic. The World Health Organization (WHO) describes the pandemic *as "a new outbreak of pathogens that spreads easily from person to person worldwide"* (Maital and Barzani, 2020: 4). The fact that a disease or condition is common and causes the death of many people is not enough to qualify it as a pandemic; it should also be contagious. According to the WHO, three main criteria determine whether an outbreak is a pandemic or not (Faulds and Bridel, 2009: 4-5). These;

- If there is a global outbreak of disease caused by an agent that is new to the population or has not been present for a long time,
- If the agent infects people and causes serious diseases,
- If the representative spreads easily and sustainably from person to person.

A pandemic, a global disease outbreak, differs from an epidemic or epidemic at several points;

- Generally affects a wider geographic area around the world,
- Infects more people than an outbreak,
- It is usually caused by a new virus or a strain of virus that does not circulate between people for a long time. People often have little or no immunity to it. The virus spreads rapidly from person to person worldwide,
- Causes more deaths than epidemics,
- It usually creates social deterioration, economic loss and general distress.

Since the earliest known outbreak (in 430 B.C) that occurred during the Peloponnese War to the present day, humanity has encountered many infectious diseases and/or epidemics which caused. between a quarter and a third of deaths worldwide. When the pandemics in the history examined, it can be seen that they occur between 6 and 53 years, on average every 28 years (Mackellar, 2007: 430). The transition from a hunter-gatherer society to an agrarian society has a significant impact on the increase of the infectious diseases (Dobson and Carper, 1996). The earliest people who ate what they could hunt or collect in the wildlife were relatively tall and energetic. Hunter groups of the past had

developed immunity to pathogens unique to their communities. These people adopted a settled life about 10,000 years ago when they learned to grow grains and domesticate animals. The total number of people increased after transition to settled life; however, the same increase did not affect their health status. When the skeletons of those people were examined, we can see that they were shorter than their ancestors and that they could not eat regularly and adequately. It is estimated that the main reason for this deterioration in humans is the epidemics they face during their period (Youngerman, 2008: 14-15).

Agriculture required permanent settlements. People and new domestic animals began to live together with the transition to sedentism. As a result of intensity and environmental changes in human-animal intimacy, enzootic and zoonotic diseases started to emerge. The agents of measles, flower disease, tuberculosis and many other pandemic diseases evolved from animal pathogens that make hosts human infectious agents. As human populations continue to expand, these agents have revealed outbreaks and pandemics (Morens et al., 2020). In addition, the use of antibiotics and pestis for intensive agriculture and animal husbandry activities reduced the resistance to the antibody so people and animals became more vulnerable to the factors that cause infectious diseases (Oppong, 2010: 15).

Since ancient times to the present, many infectious diseases and epidemics have severely affected people's lives. Pandemics in the ancient time such as The Plague of 664 in the British Isles, The Plague of Justinian, the plague of Cyprus were epidemics affecting humanity. In addition, the Amvas plague which began in Jerusalem in 639, the Black Plague which began in China in 1347 - 1351, the cholera epidemic which began in 1817 and led to the death of a large number of people in Japan, Moscow, Berlin, Paris, London and Hamburg at different intervals, were also important epidemics in human history. Almost 15% of the world population died because of the Spanish Flu which occurred between 1918 and 1920. Hong Kong Flu, first seen in Hong Kong in 1968, soon affected many Asian countries. In particular, when troops returning from the Vietnam War caught the virus, it spread to the United States and to Japan, South America and Africa. Avian flu and Swine Flu are also outbreaks that have occurred in recent years, but the vaccine has been found. The AIDS virus, which continues today, is a global and active epidemic. But it is trying to keep it under control with vaccines. Finally, the COVİD-19 virus caused by the SARS-CoV 2 coronavirus, which first appeared in China in December 2019, soon affected the entire world (Aslan, 2020: 35-38).

Although there have been significant developments in the pharmaceutical sector in our age, infectious diseases continue to increase and spread due to globalization, increased travel and trade, urbanization, crowded cities, changes in human behaviour, revitalization of pathogens and misuse of antibiotics (Lindahl and Grace, 2015) and caused the deaths of millions of people. Pandemics also have serious effects in many areas such as health, economy, social, cultural and demographic structures of societies.The first and most significant impact of an outbreak or pandemic is on human health (Delivorias and Scholz, 2020:2) and these effects are devastating (Perry and Syndee, 2016). This effect is manifested by the fact that the pandemic is infected to other people and/or regions as a result of the spread of human mobility and causes more loss of life. For example, 30-50% of the European population was wiped out in the Black Death pandemic (Perry and Syndee, 2016). The Spanish flu of 1918 is estimated to have killed more than 50 million people. In 2003, 774 people died due to SARS (WHO, 2003). The 2009 H1N1 influenza outbreak resulted in more than 200,000 deaths (Eroglu, 2020: 215). Between December 2013 and April 2016, the Ebola outbreak killed 11,310 people in Guinea, Liberia and Sierra Leone (WHO, 2016). The MERS pandemic, first seen in 2012, caused 823 deaths and infected at least 2,374 people (according to February 2019 data). The latest Zika outbreak in the United States has infected more than 1 million people (World Bank Group, 2020). The Covid-19 pandemic, which started in Wuhan, China in December 2019 and is still ongoing, caused and continues to cause 1.88 million deaths worldwide on December 31, 2020.

Two different measures are in pratice to prevent such outbreaks. The first one is drug therapy and the vaccine, and the other one is non-pharmaceutical interventions (non-drug /public health interventions). The latter is more of a method used in cases where there is no certain treatment or

where the vaccine/drug has not yet been developed. The purpose of Non-pharmaceutical Measures (NPIs) is to slow the pace of the epidemic and prevent its spread. By applying NPIs, the rate of person-to-person transmission of the virus can be slowed and thus prevent the outbreak from threatening health systems and public health. This method was also applied in many outbreaks before Covid-19. For example, during the Spanish Flu of 1918-19, states were unable to develop an effective treatment method or vaccine/drug, so they applied NPIs and managed to reduce the number of cases (Ferguson et al., 2020: 20). In outbreaks, the first things that come to mind and everyone can easily apply are masks, distance and hygiene.

NPIs can be grouped under four headings. These are (WHO, 2019); personal protective measures (handwashing, the need to wear a mask in outdoor and indoor areas), environmental measures (disinfection of surfaces and objects), social distance measures (patient isolation, quarantine measures, closure of schools and workplaces, together with the prohibition of the activities and activities that can bring the crowds to be partially or completely shut down etc.) and travel-related measures (travel advice, monitoring of those entering and leaving the country at borders, closing borders, restricting or prohibiting travel in and out of the country). Three groups of non-pharmaceutical intervention strategies have been adopted in NPIs implementation: containment, mitigation and suppression (Patiño et al., 2020). The economic effects of these measures are of great importance. Epidemics and measures to stop them will have economic consequences as they used to be before.

In general, the effects of pandemics on human health have been studied, but the economic effects of pandemics have not received much attention by economists. Studies have also been conducted to estimate the economic burden of pandemics based on specific and non-specific medical costs associated with the disease or the demographic consequences of the outbreak (Lee and Mckibbin, 2004: 116). However, the economic effects of pandemics or epidemics, as well as their impact on health, should not be ignored. Because studies have shown that epidemics and pandemics in the past had significant effects not only on human life but also on the economies of countries. The economic effects of pandemics can be classified into two groups: direct and indirect. Direct effects include hospital costs, lost workdays, drug costs consumed, etc. indirect costs arise in the form of the economic multiplier effects of direct costs and the consequences of changes in structural parameters that regulate basic economic behaviours such as consumption. A decrease in private consumption and, accordingly, new investments, a deterioration in supply chains, losses in Travel, Tourism and the food and beverage sector can be shown as indirect effects of the epidemic (Mackellar, 2007: 442-443).

Although the 1889-1890 Russian Flu outbreak was not fully detected, it was known to have created an economic recession (Mitchener and Weidenmier, 2007: 463). The Spanish flu of 1918 is cited as one of the factors of the post-World War I economic stagnation (Brainerd and Siegler, 2003). As a result of the Asian flu, the American economy shrank by 1% and the Canadian economy by 1.2%. After the outbreak was seen in the United States, the S&P 500 decreased by 20.7%, which was cited as the cause of the 1958 recession (Türk et al., 2020: 621). It had a negative effect on the workforce as the other outbreaks. As a result of the Asian Flu, unemployment rates increased in many countries. In Japan, for example, unemployment rose to 3.9% in 1958 from 3.1% in 1957. Similarly, unemployment rates in the United States, Germany and the United Kingdom in 1958 increased by 2.5, 0.1 and 0.6 percentage points, respectively, compared to the previous year (UN, 1960: 26). The amount spent on treating the HIV-AIDS virus, which has been on the world's agenda for many years and has killed millions of people, is more than 2,000 US Dollars per patient per year. It is estimated that the share of HIV in total health care costs in South African regions in GDP ranges from 0.3% to 4.3% (Lee and McKibbin, 2004: 3). Between 2000-2015, 562.6 billion US Dollars was spent on HIV/AIDS worldwide. 57.6% of these expenditures were covered by governments. As a result of the 2003 SARS outbreak, China's economic growth decreased from 11.1% in the first quarter of 2003 to 9.1% three months later. The burden of SARS on the global economy between 2002 and 2003 is estimated to be between 30 and 50 billion US dollars (Kessler, 2020). In a study by Lee and McKibbin in 2004, they concluded that the worldwide impact of SARS in 2003 was between 40 billion and 54 billion US Dollars. Because of SARS, China, Hong

Kong, Taiwan, Singapore, Canada and the United States have suffered major economic losses. But the impact of these losses was short-lived, and the economies of the country in question began to recover quickly (Brahmbhatt and Dutta, 2008). As of December 10, 2014, the social cost of an Ebola case, one of the major epidemics of the century, in Guinea, Liberia and Sierra Leone, most affected by the virus, is claimed to be between 82 million and 356 million US Dollars (Bartsch et al., 2015: 4). According to a World Bank Report (2016), the overall impact of the Ebola outbreak on these three countries was 2.8 billion US Dollars (Türk et al., 2020: 624). It is clear that Covid-19 has a serious impact on the global economy. Although its economic cost cannot be accurately calculated because the epidemic is still ongoing, it has had serious economic consequences for many countries, especially underdeveloped or developing countries.

Covid-19 is the deepest recession that the world has faced since World War II. According to World Economic Outlook report published by the IMF (2021), the global economy contracted by 3.5% in 2020. The economic crisis that began with Covid-19 was felt in almost all countries, whilst the places where it was most deeply affected were poor countries/regions (Noy et al. 2020). The Covid-19 pandemic had a devastating impact on world GDP growth. Due to Covid-19, GDP decreased by 6.7% on a global scale, although it differs by country and region (Szmigiera, 2021). Along with Covid-19, there was also an increase in unemployment rates due to the contraction in production processes. As a result of the pandemic, total working hours decreased by 8.8% in 2020. Compared to the previous year, total employment decreased by 114 million. One of the important points that distinguishes Covid-19 from other crises, including the 2008 crisis, is that many employees affected by the crisis continue their work but have worked less or not at all (ILO, 2021a). The sector most affected by Covid-19 has been the service sector. The food and beverage sector, the travel and tourism sector have been affected by travel restrictions, the closure of businesses and schools, curfew restrictions. According to UNWTO data, there has been a 73% reduction in the number of tourists worldwide in 2020.

3. Methods and Data: A Comparative Policy Analysis Approach

This paper is based on qualitative comparative analysis which is a case-based method use that allows evaluators to systematically compare cases and identify key factors responsible for the success of an intervention (Baptist and Befani, 2015). We also used narrative method which is a comprehensive, critical, and objective analysis of the current knowledge on the present topic (Clemente-Suárez et al., 2021) in this paper. In this study we compared four Asian countries (South Korea, Singapore, Taiwan and Vietnam) in terms of economic impacts of Covid-19. We also briefly analysed fiscal responses of these countries to SARS-COV 2. For data collection, we used primary and secondary sources. We collected data on national fiscal policy responses from the International Monetary Fund's (IMF) Tracker of Policy Responses to COVİD-19. We analysed the fiscal responses of our sample countries in a comparative way under the discussion part of the paper. Data on each country's macroeconomic variables come from Asian Development Bank (ADB) database, United Nations Conference on Trade and Development (UNCTAD) database. We chose four macroeconomic variables to analyse the economic impact of Covid-19. These are GDP, unemployment, inflation and foreign trade. We compared these variables before (2017, 2018, 2019) and after Covid-19 (2020 and 2021) and tried to show the impacts of Covid-19. Data on the COVİD-19 cases, deaths, case-fatality rate and number of the tests were gathered from ouworldindata.org which was based on COVİD-19 Dashboard at Johns Hopkins University and national websites of the countries related to the Covid-19. Apart from these databases we also used secondary sources such as articles from Web of Science (WoS), ScienceDirect and Google Scholar and reports of international organizations such as ILO, IMF, WB and ADB.

In our paper, we focused on four Asian countries such as South Korea, Singapore, Taiwan and Vietnam which have different populations, different life-expectancy at birth, GDP and Human Development Index. The countries in our study represent variations in income levels, economic conditions, geographical locations, government structures, political systems, fiscal capacities, and the severity of COVİD-19 outbreaks. Another reason why we chose those countries is that they

demonstrated a very successful administration, especially at the beginning of the pandemic (in the first months), and they set an example for the whole world in the fight against Covid-19. So, in this study we also tried to examine whether those countries could demonstrate the same success in economy. The study period is limited to January 1 to December 31, 2020. To our best knowledge, this is the first paper discussing the economic impacts of coronavirus in our selected countries. There are many articles on the epidemiological side in detail for those countries but literature on economic impact is not enough. So with this study, we want to fill in this gap.

4. Results

4.1. Health Impacts: Covid-19 in Selected Asian Countries

Before we start to have a look at the economic impacts of Covid-19, we also want to give brief information about Covid-19 cases in our selected countries.

4.1.1. South Korea

The first wave of the outbreak in South Korea was between February-April 2020. The initial spread of the epidemic was among religious groups due to a lack of adequate information (Seong et al., 2021: 742). The first case of Covid-19 in South Korea was detected on a Chinese tourist on January 20, 2020 (You, 2020: 801). From the first confirmed case till the 29th case, all of them were sourced overseas. In other words, it was detected in people in China or other countries where the virus was seen (Choi, 2020: 399). With the first case occurring on January 20th, South Korea was one of the first countries affected by Covid-19 after China (Klingebiel and TØrres, 2020: 1; Lee and Choi, 2020: 587). The first case without any overseas connection was (16 February 2020) the 29th case. After the detection of this case, the possibility that there is a risk that the virus will spread within the country has become stronger. This possibility became a reality with a rapid course of cases, and the government immediately raised the alert level from orange to red on February 23, 2020 (Choi, 2020: 399). The first death from Covid-19 was recorded on 20 February (You, 2020: 801).

With the increasing number of cases and the detection of the first death incident, the Ministry of Education closed all schools and postponed the start date of the new academic year forward by one week (Choi, 2020: 399). In South Korea, the Covid-19 outbreak occurred in three waves. The first wave was between February and April, the second phase was between 13 August-18 September and the third wave started on the fourth of November and is still ongoing. In South Korea, 61,769 cases and 917 deaths were recorded as of December 31, 2020. The case-fatality ratio was 1.49%. As of this period, a total of 4.04 million tests have been performed (ourworldindata.com). During the same period, case-fatality rates were recorded as 5.32% in China, 3.52% in Italy, 2.95% in the United Kingdom and 1.75% in the United States, respectively.

4.1.2. Singapore

Although Singapore has a very good health system and effective public administration, like many other developed countries, it has been one of the countries severely affected by the Covid-19 pandemic (Woo, 2020: 345). Thanks to the previous SARS (2003) the experiences, she successfully managed the pandemic (Barron, 2020). The first case in Singapore was detected on January 23, 2020 (Das and Zhang, 2020: 1). The first Covid-19-related death was reported on March 22, 2020.

Like many countries where the outbreak was observed, the first case in Singapore was detected by a person from outside the country (a Chinese tourist). Singapore has the strongest connection to Wuhan city outside China. Approximately 3.4 million people travel between Singapore and Wuhan every year (WHO, 2020). A total of 58,599 cases and 29 deaths were recorded in Singapore as of December 31, 2020. At the same date, the case-fatality rate was recorded as 0.05%. In countries with similar population like Singapore, this rate was 3% in Denmark and 4% in Finland which are much hiher than Singapore. The world average (3%) was also well above this rate. In terms of death tolls and case-

fatality ratio, Singapore is one of the countries with the lowest rates (Geddie and Aravindan, 2020) in 2020 (between 01 January and 31 December 2020). Among our sample countries, it is second in terms of total number of cases, third in terms of total mortality rate and last in terms of case-fatality rates.

In Singapore, the Covid-19 outbreak occurred in five waves, and at the time of we write, the sixth wave began and continues. The First wave (January 2020): period of imported cases from China (total 13 cases). The second wave (February-March 2020): the period when early local clusters were identified and the virus began to spread within the country (a total of 89 cases). The third wave (March 2020): period beginning with the return of Singapore citizens and permanent residents living abroad (total 824 cases and 3 deaths). The fourth wave (April-May 2020): the period when the virus began to spread among the migrant worker population (15,243 cases and 12 deaths). The fifth wave (May 2020-April 2021): communities and clusters (a total of 44,212 cases and 8 deaths) and finally the wave that started and still continues in April.

4.1.3. Vietnam

Vietnam, with a 1,500 km border with China and a population of almost 100 million, was one of the countries at risk of being affected by Covid-19 at the beginning of the outbreak. Bein a middle income country and having limited public resources has led Vietnam to be perceived as a more vulnerable country to the pandemic. Contrary to these perceptions, Vietnam has given a successful test in the Covid-19 outbreak (Dao et al., 2020) and continues to do so. The first case detection in the country (Chinese-born father and son-2 people) was on January 23, 2020 (Phan et al., 2020; VMOH, 2020). A total of 1465 cases were identified in the country from January 2020, when the first case was detected, to December 31, 2020. Again, the total number of deaths recorded on 31 December 2020 is 35. The case-fatality ratio is 2.39%. Vietnam also has the highest case-fatality rate for the countries in our study.

4.1.4. Taiwan

Taiwan is a country with close cultural and economic relations with China, 120 km from China and more than 400 thousand citizens work in China. It is also a country visited by approximately three million Chinese every year. Due to these characteristics, Taiwan was expected to be among the most countries affected by Covid-19 (Su and Han, 2020). However, with rational and timely responses, the country has removed these expectations. The first case detection in Taiwan was on January 21, 2020, in Wuhan, China, in a 50-year-old Taiwanese woman (Su and Han, 2020; Cheng et al., 2021: 1402; TCDC, 2020). The cases up to 28 January are all listed as cases of overseas origin. The first domestic case was identified on January 28, 2020 in a man in his 50s. The man himself has not been in China, but his wife has been in Wuhan, and it is assumed that the virus was transmitted from her. The first death from Covid-19 occurred on February 16. This first case of death is a man in his 60s with Hepatitis B and diabetes. This death was the fifth case of death outside mainland China (Chang and Yeh, 2020). A total of 799 cases, 7 deaths and 126,989 tests were recorded in Taiwan as of December 31, 2020. As of December 31, the case-death rate was recorded as 0.88%. In terms of case and death rates, Taiwan is the country with the least rate among the countries in our working group. In terms of case-fatality ratio, it is the country with the lowest rate after Singapore.

4. 2. Economic Impacts of Covid-19

As we mentioned above, the effect of Covid-19 has not only been on health. It has also had devastating effects on the economies of countries. These effects are felt and are still being felt more severe than many crises occurred before. Almost all countries, regardless of their level of development (developed countries felt less of the economic impact of the epidemic or less of their citizens) felt Covid-19 deeply. This is also the case in terms of the countries we examined in our study. Although each country is different, all four countries have experienced the economic effects of Covid-19. We

will discuss the economic effects of Covid-19 in the countries that make up the sample of our study under four headings. These are GDP, unemployment rate, inflation rate and foreign trade.

4.2.1. Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is one of the important indicators that a country's economy is improving, in other words, it is the most important macro-economic indicator that helps monitor the country's economic performance. It indicates growth or contraction in an economy. All of the countries in our study have experienced a reduction in 2020. The GDP of South Korea and Singapore has entered a downward trend since 2017, and it has continued in 2020. In Vietnam and Taiwan, unlike the other two countries, an increase in GDP was observed between 2017-2019. The GDP of these two countries, like the others, decreased in 2020. GDP of all countries is expected to increase at the rates indicated in the table in 2021.

Table 1. GDP Rates of the Countries

COUNTRY	YEAR (%)				
	2017	2018	2019	2020	2021*
South Korea	3.2	2.9	2.0	-1.0	3.5
Singapore	4.5	3.5	1.3	-5.4	6.0
Vietnam	6.8	7.1	7.0	2.9	6.7
Taiwan	2.7	2.7	4.6	4.6	3.05

Source: https://data.adb.org/dataset/gdp-growth-asia-and-pacific-asian-development-outlook *2021 rates are based on projections.

4.2.2. Unemployment

One of the major effects of the Covid-19 outbreak is a decline in job participation, i.e. labour loss. Depending on the measures taken to prevent the epidemic, the contraction in the economy caused the overall volume of production to fall and, accordingly, the increase in unemployment rates (Bulut and Pinar, 2020: 219-220). Unemployment was also a problem for many countries before Covid-19. When we look at the table, it is clear that all other countries except Taiwan have started an increasing trend in pre-Covid-19 unemployment rates. Unemployment, which was 3.8% in South Korea and Singapore in 2018, was recorded as 4.2% and 4.1%, respectively, at the end of 2019. Likewise, the unemployment rate in Vietnam, which was 1.9% in 2018, increased by 0.1 percentage points to 2% in 2019. In Taiwan, unemployment rates in 2018 and 2019 remained the same (3.7%). However, the unemployment figures, which began to increase with the start of Covid-19, were recorded as 4.1% in South Korea, 5.2% in Singapore, 2.3% in Vietnam and -0.2% in Taiwan, respectively, by the end of 2020. The largest increase in unemployment rates (1.1 percentage points) was recorded in Singapore in 2020 compared to the previous year. As with many other macroeconomic indicators, a decrease in unemployment rates is expected for 2021 compared to 2020.

Table 2. Unemployment Rates of the Countries

COUNTRY	YEAR (%)			
	2018	2019	2020	2021*
South Korea	3.8	4.2	4.1	3.80
Singapore	3.8	4.1	5.2	2.90
Vietnam	1.9	2.0	2.3	2.42
Taiwan	3.7	3.7	-0.2	3.72

Source: https://data.adb.org/dataset/basic-statistics-asia-and-pacific *2021 rates are based on projections

4.2.3. Inflation

When the inflation rates of countries are examined, it is observed that they follow a fluctuating course before Covid-19 and generally enter a downward trend. Inflation rates in the four countries included in our review were 0.4% in South Korea in 2019; 0.6% in Singapore, 2.8% in Vietnam and 0.6% in Taiwan. With the Covid-19, inflation rates at the end of 2020 were recorded as 0.5%; -0.2%; 3.2% and 3.5%, respectively. As can be seen from the table, inflation increased significantly in Vietnam (0.4 point) and Taiwan (3.3 point) at the end of 2020, while in South Korea it increased by 0.1 point, but it declined in Singapore.

Table 3. Inflation Rates of the Countries

COUNTRY	YEAR (%)				
	2017	2018	2019	2020	2021*
South Korea	1.9	1.5	0.4	0.5	1.3
Singapore	0.6	0.4	0.6	-0.2	1.0
Vietnam	3.5	3.5	2.8	3.2	3.8
Taiwan	1.4	1.4	0.6	3.9	2.5

Source: https://data.adb.org/dataset/inflation-rate-asia-and-pacific-asian-development-outlook; imf.org. *2021 rates are based on projections.

4.2.4. Foreign Trade

Covid-19 pushed countries into recession. The economic impact of the pandemic has been felt more than both previous outbreaks and many economic crises. The crisis caused by Covid-19 has more devastating effects than the 2008-09 financial crisis (Mohamed, 2021: 57). As with many sectors, the impact of Covid-19 on international trade has been palpable. Foreign trade in South Korea and Singapore declined in 2020, while in Vietnam and Taiwan it increased. Table 4 shows the countries' foreign trade figures before and after Covid-19.

Table 4. Foreign Trade (FT) Figures of the Countries

COUNTRY		YEAR			
	FT (Million USD)	2017	2018	2019	2020
South Korea	Export	573,694.4	604,859.7	542,232.6	512,498
	Import	478,478.3	535,202.4	503,342.9	467,632.8
Singapore	Export	327923.4	370,880.6	359,265.7	329,829.8
	Import	373,445.9	412,954.8	390,763.5	362,534
Vietnam	Export	215,013.7	243,698.7	264,267.6	282,655
	Import	212,919.4	236,862.5	253,393.5	262,700.6
Taiwan	Export	317,249.1	335,908.6	330,621.7	347,192.8
	Import	259,266.4	286,332.9	287,163.7	288,053.4

Source: https://unctadstat.unctad.org/wds/TableViewer/tableView.asp

5. Discussion

The Covid-19 is a global outbreak. It first started in China and soon took over the entire world and caused millions of people to get sick or die. The problem is global, and the solution is local and global. In a world where borders have disappeared with globalization, the circulation of people, goods and products has also made it easier for the virus to spread from one country to another. To deal with this problem, states have taken various measures, taking advantage of previous experience and aimed to slow down the pace of the epidemic. Since the international community has not encountered a similar outbreak before (although they have had experiences such as SARS, MERS), they have had a dilemma

about how to respond at first. Countries that had previous experience in this process, in other words, countries that had previously faced an epidemic similar to Covid-19 (especially Asian countries) immediately reflected this experience on the field and were able to prevent the rapid spread of the epidemic. In addition, the use of technology, the use of masks, effective and rapid intervention and effective test-follow-up applications were added to this, and the result was quite successful.

In the countries of our study, unemployment has increased in three countries except Taiwan since the outbreak. This increase has accelerated even more with the outbreak and has led to many people being excluded from working life. The reasons for this include the forced closure of many workplaces and the closure (ILO, 2020) or bankruptcy of some business sectors as a result of the inability to withstand rising costs. And also people, from production to the service sector, lost their jobs within the scope of protection measures. Due to the lockdown during the outbreak (Habicht et al., 2020) the decline in supply and demand has led to increased unemployment (Bianchi et al., 2021). It is known that pandemics have severe effects on the countries' economies and therefore unemployment. Carlsson-Szlezak and colleagues (2020) note that economies have experienced a "V" recovery after previous pandemics (1918 Spanish flu, 1957 Asian flu, 1968 Hong Kong flu and 2002 SARS outbreak), but such recovery will be more difficult after Covid-19. Because of social distancing measures and lockdown, the impact on employment is estimated to be much greater. It will be difficult for the vast majority of people to find work again soon.

The negative effects of Covid-19 on unemployment are not only a phenomenon in our sample countries. In Asia and the Pacific, total working hours are estimated to have decreased by 6.5%, 16.9%, 5.4% and 2.8%, respectively, in the four quarters of 2020, which means an average loss of 140 million full-time jobs for the year (UN ESCAP, 2021). Global unemployment increased by 33 million due to Covid-19, and the unemployment rate in 2020 was 6.5%, up 1.1 percentage points on a global scale (ILO, 2021b: 1). These results are consistent with other studies of Takagi et al., 2021 and Boneva et al., 2020. Taiwan's economy, on the other hand, has high unemployment rates in 2018 and 2019, unlike the other three countries (South Korea, Singapore, Vietnam), while unemployment is likely to decline in 2020 when the epidemic has a greater impact. This might be due to an increase in economic growth in 2020. Because the growth of an economy depends only on the increase in the number of goods and services produced. The key element in the realization of production is, of course, the labour force. This, in turn, shows that the labour force is employed.

The other effect of Covid-19 on macroeconomic variables is on inflation. Covid-19 measures caused stagnation in many sectors. Businesses that were closed because of the pandemic, as well as production that stopped or decreased as a result, were also not able to meet the demands of the people. In particular, the supply of products such as cleaning and hygiene products, food, medical equipment, masks was not adequately provided at first due to excessive demand intensity. In cases where goods and services produced in an economy cannot meet total demand, inflation increases. In other words, the increase in demand for goods and services exceeds the increase in total supply, which leads to an increase in the price of goods and services and, as a result, inflation. In addition, the increase in production costs is also a factor of pressure on inflation (tcmb.gov.tr). Among our sample countries, Singapore has the lowest inflation rate in 2020, and Taiwan has the highest. Growing demand in Singapore's housing, rents, food, communication and increased the prices of durable consumer goods, although the decline in oil prices and an increase in the cost of services contributed to the lack of inflation remains low compared with the previous year (ADB, 2021: 318). In Vietnam, however, there was little increase. It can be said that pent-up domestic demand and a sharp decline in global fuel prices have been effective in keeping inflation low in Vietnam (ADB, 2021: 331).

It is obvious that Covid-19 affects the economic growth and GDP of countries. The GDP of many countries has decreased at different rates in 2020. In our study, there was a decrease in GDP of three countries (South Korea, Singapore and Vietnam) compared to the previous year. The biggest decline was in Singapore, at a rate of about seven points. Covid-19 has no effect on the GDP of Taiwan, so it remained the same. By means of production in Taiwan, the manufacturing industry was less affected by Covid-19, and production continued to increase, especially in the electronics and IT sector (Kuo,

2020: 110). During Covid-19 outbreak, distance education and work from home, cloud computing and virtual workplaces became widespread (CCSA, 2021: 34). This naturally increased the demand for electronic products such as computers, webcams, mobile phones and tablets. In Taiwan, which is one of the important production markets of these products, electronics exports have increased and provided a significant income to the country's economy. For example, exports of electronic products, which were 5.76% in the fourth quarter of 2019, including December, when the pandemic was observed in China, were 25.49% in the first quarter of 2020 and 23.26% in the second quarter. Similarly, computer, electronic and optical materials exports also increased compared to many other sectors, and this increase prevented Taiwan's GDP decline (Kuo, 2020: 110).

The service sector accounts for more than 75% of Singapore's total GDP. Aviation, travel and tourism also have an important share in the service sector (Liu et al., 2020: 284). The income loss in these sectors leads to unemployment and GDP decline. Travel restrictions imposed to prevent the spread of Covid-19 have led to a sharp decline in the number of tourist arrivals in Singapore and passengers travelling by air. Due to pandemic measures, 25-30% decrease in the number of visitors is expected for 2020 (Tan et al., 2021). This negatively affected the GDP. A recent simulation study by the World Bank (WB) indicated that countries whose economies depend on trade and/or tourism would experience a greater loss of GDP (Maliszewska et al., 2020). Service sector was the most severely affected by Covid-19. In the first three quarters of 2020, there was approximately 61% decline in this sector (CCSA, 2021: 34). The economy of South Korea is an export-based economy. The country is also deeply integrated into global value chains. In 2009, it ranked second among 33 OECD countries with a turnout rate of 65% (Kwang-Yeong, 2021: 6). Due to the pandemic, the deterioration in trade and global value chains has had a negative impact on economic growth, GDP and unemployment (OECD, 2020).

Vietnam exports the vast majority of its products to China. China is Vietnam's second largest export market. China is also Vietnam's largest importer of agricultural products (Tran et al., 2020). Production in Vietnam always depends on raw materials imported from China (VietnamCredit, 2019). Therefore, a situation of instability in China will significantly affect the Vietnamese economy. China is where Covid-19 first started and spread all over the world. Production slowed early in the outbreak due to the Chinese government's policies to suppress the outbreak. This, in turn, led to disruptions in the supply chain for other countries and reduced production, hence reduced GDP.

Covid-19 also caused a decline in international trade. The impact of the outbreak on international trade is based on three reasons (Xin lin, 2021). These include a decrease in supply and supply capacity, a decrease in external demand and an increase in costs. Bekkers and Koopman (2021) noted that there may be several reasons for the decline in foreign trade. First, the restrictions that come with the outbreak have caused people to be more cautious about spending money, having to stay at home or work from home for a long time, many people losing their jobs or diminishing income. These people who are worried about their future have either delayed or reduced the purchase of durable goods. Firms have also delayed investments as a result of continued uncertainty in the economy. Along with Covid-19, trade financing also became expensive. Although this was not very important for general trade, it was an important factor for small and medium-sized businesses. But the most important reason for the decline in trade figures is the pandemic measures, especially social distance measures. Measures of social distance drive people and societies away from each other. However, international trade and investment have always relied on cross-border transfers of individuals and goods. Direct contact is crucial in establishing healthy cooperation in international trade, because physical intimacy between producers and consumers is essential for many trade services. However, Covid-19 measures, in particular measures such as travel restrictions and mobility prohibitions, prevented this from happening and also affected international trade (Vo and Tran, 2021: 1).

Because of Covid-19, two of the countries included in our paper (South Korea and Singapore) saw a decrease in foreign trade compared to the previous year. However, in the other two countries (Taiwan and Vietnam), foreign trade increased compared to 2019. There has been a steady increase in pre-Covid-19 imports and exports in all of these countries. But Covid-19 affected adversely the foreign

trade figures of the two countries. The decline is about 6.5% in South Korea compared to the previous year and around 7.7% in Singapore. As a port city and tourist destination, Singapore is a key point for global trade. It generates significant revenue from these sectors. However, due to Covid-19 measures, there has been a decrease in both the number of passengers arriving in the country and the number of merchant goods and ships arriving. This, in turn, caused the country's foreign trade data to remain low (Tan et al., 2021: 7). In Vietnam and Taiwan, there was an increase in foreign trade numbers. The reason for this is the increase in exports, especially in the field of electronics and informatics. As mentioned above, the increase in demand for the electronics and IT sector with the outbreak has contributed to the macroeconomic indicators of my countries that produce and export such products (GDP and economic growth, unemployment, foreign trade).

Governments have announced and implemented various support packages or programs to overcome the negative effects of Covid-19. Although the type and amount of support varies depending on the economic situation of the countries and the destruction of Covid-19 in the country, similar measures have been taken in many countries. Studies also show that countries with a higher rate of COVİD-19 cases have higher financial expenditures. Covid-19 financial measures taken by countries with a high number of cases account for 7.3% of their GDP, whilst in countries with a lower number of cases, this figure is 4.6% (Chen et al., 2021a: 267). According to a study conducted by Chen et al. (2021b), the three most popular financial instruments were identified as direct government spending (96%), direct government cash payment (84%) and tax policies (over 70%). These are followed by debt contract and assistance (70%), government loan assistance (62%) and government business subsidies (59%).

The first additional budget was adopted by the National Assembly on March 17, 2020 to mitigate the economic effects of the outbreak in South Korea. The additional budget includes a decrease in revenue of 0.8 trillion KRW and additional spending of 10.9 trillion KRW for the prevention and treatment of diseases. A second additional budget was subsequently adopted on April 30, 2020. This budget includes an increase of KRW 8 trillion in addition to the previously adopted budget. On July 3, the third support package of KRW 35.1 trillion was announced. The last support package for 2020 was adopted on 22 September. This package (additional budget) envisages an expenditure of 3.9 trillion KRW for small businesses and SMEs, 1.5 trillion KRW for employment support, 0.4 trillion KRW for low-income households, 2 trillion KRW for daycare support and 7.8 trillion KRW for others (IMF, 2020).

To mitigate the impact of the pandemic, the Government of Singapore has announced financial support measures for various sectors and individuals worth approximately $92 billion on various dates (February 18, March 26, April 6, April 21, May 26, August 17, 2020). Support for households in the country includes cash payments to all Singaporeans (higher for families with children under the age of 20) and additional payments for low-income individuals and the unemployed. Support for businesses and workers includes wage subsidies, job creation, rent support, development of financing plans, and additional support for the self-employed and the sectors directly affected by the epidemic (aviation, tourism, construction, transportation and the arts). Officials have increased their funding for unpredictable spending needs and also set aside 22 billion Dollars in loan capital to help businesses facing cash flow challenges with loan obligations and insurance premium payments (IMF, 2020).

The Vietnamese government has presented a financial support package worth VND 291.7 trillion (3.6 percent of GDP) expected to support the economy in 2020. Measures include deferring VAT and CIT tax obligations and land rental fees by five months and delaying PIT payment until the end of the year. In addition, the Vietnamese government provided various tax exemptions for SMEs and businesses on February 25, 2020. The government has also approved a cash transfer package worth 36 trillion VND (0.5 percent of GDP) for affected workers and households with monthly cash transfers provided for a maximum of three months from April to June 2020. More than 13% of the country's population is expected to benefit from this package. The scope of the cash transfer program was then expanded to include private schools teachers (IMF, 2020).

On January 15, 2020, the “COVİD-19 prevention, relief and restoration special Act” came into force. Accordingly, a legal basis was established to support people and companies affected by Covid-19

through low-interest financial loans, subsidies and public services. With the evolving pandemic crisis, this particular law was revised on 21 April 2020 to include more sectors and people affected by COVİD-19. The updated stimulus package lowers the special budget of NT$210 billion (7 billion US Dollars), the emergency budget of NT$140 billion (4.7 billion US Dollars), and the financial loan of NT$700 billion (23.3 billion US Dollars) includes the interest rate. While 65.9% of the special budget will be allocated to “economic development”, 34.1% will be used to increase “social welfare”. Owing to the special law in question, the government gave NT$103.5 billion (3.5 billion US Dollars) to people suffering from job loss because of Covid-19 for three months (April-June 2020). Taiwan’s government’s total stimulus packages account for 5.4% of the country’s GDP in 2020 years. This is lower than Japan, Malaysia, Hong Kong, Singapore and the USA, but higher than South Korea and China (Min-Hua, 2020: 16,18)

There are some limitations of this study. First, the study covers the period from January 1 to December 31, 2020. Therefore, the data we use in the study only applies to the specified period and does not cover subsequent periods. Second, 2021 data that we use in macroeconomic indicators are projections, that is, not finalized data since the year hasn’t ended yet. Policymakers should focus on timely responses and rational decision-making as they are crucial in preventing Covid-19, or at least decelerating the spread of the outbreak. Rapid and timely intervention in the process is one of the keys to success. In addition, state-people-civil society, openness and transparency and trust in governments are other keys to success in fighting the pandemic. The use of technology is extremely important for the detection of the virus and the necessary intervention. Therefore, the fact that policymakers give much importance on these will significantly change the course of the outbreak. In this way, fewer people will be infected, and states will save time, money and human resources in fighting the pandemic. Governments and people should give more importance on vaccination. Adequate testing and accurate follow-up of cases will reduce the number of patients and therefore ease the burden on the health system and economy. This study covers the year 2020 as mentioned above. But the epidemic is still ongoing, and various predictions are to be made for 2021 and the years to come. Most of these forecasts are that the years 2021 and beyond will be better (economically) than 2020. Therefore, in or at the end of 2021, it will be useful to see the traces of the outbreak (Covid-19) for the countries in our study or for other countries in the Asian region.

6. Conclusion

Covid-19 is the most effective pandemic of the 21st century. Unlike previous outbreaks, both the area in which it spreads and the number of countries and people it affects are very high. Many countries were not ready for such a pandemic (Covid-19). Even the WHO, which is responsible for guiding world health, experienced a hesitation at first and was unable to respond quickly to the pandemic. The countries in our study had to face Covid-19 before many countries because of their proximity to China or their relations with China. However, previous SARS experience has allowed them to respond quickly. Compared to many countries, Singapore, South Korea, Vietnam and Taiwan can be classified as successful in the outbreak. The key to this success is to be able to respond to the pandemic in a timely and rapid manner, to implement good governance, to the maximum degree of compliance with the measures taken against the pandemic and to use technology. These four countries epidemiologically have been shown as role models to the other countries. However, they were not succesfull for reducing the economic impacts of the virus. Like many countries, the effects of Covid-19 have been deeply felt in many areas (GDP, inflation, unemployment). Taiwan was more successful in terms of GDP, unemployment and foreign trade indicators than other countries. Vietnam, on the other hand, gave a better test in terms of foreign trade figures and inflammation in Singapore. The good trade indicators of Taiwan and Vietnam are the export figures in the field of electronics and IT, which increased during the pandemic period. However, Covid-19 hasn’t been fully over yet and there is no certainty on when it will end. Therefore, it would not be the right approach to classify countries as successful or unsuccessful.

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