The Economic Impact on Tourism Industries from Covid 19

by

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Abstract

This paper analyzes the impact on tourism industries and sectors on the Global GDP from Covid 19. The impact on Covid-19 has impacted a lot of tourism industries around the world; particularly the European Countries where Netherlands and Italy both rely heavily on tourism. For these, variables that were used, Y (GDP) was used as the dependent variable, and Lock down, Tourism, Debt, and Governance were the Independent Variables. Using these two countries on the Netherlands and Italy, we use the data to compare the actual values versus the predicted values to see which Y variable (GDP) between Italy and Netherlands, has a greater impact on its tourism industries due to Covid. Based on what was found, Italy had a greater GDP impact overall from Covid than the Netherlands for both the actual and predicted values. Since the pandemic occurred, this placed a negative impact on the tourism industries which only few travelers have visited different countries. Many of its tourism industries suspended their operations due to the travel ban for different parts of the country. As a result of the decline in tourist, many of its industries are on the verge being bankrupt. With so many tourism industries losing its GDP and revenue, there have been more layoffs towards its employees since there are very few visitors that go to tourism industries. The estimation is that tourism economy will lose an enormous amount of revenue around a million dollars due to the travel bans and decrease in demand for consumers all over the world.

Introduction

What is the impact on tourism industries and GDP since Covid 19 came? Within the past year on January 2020, concerns were focused on the mysterious virus that infected of patients and quarantining themselves in the hospital finding out what is causing an increase of infections of people. In the middle of January, the World Health Organization declared the virus to be the Coronavirus also known to be Covid 19, originating from Wuhan China which has impacted many lives, particularly the elderly people. Scientist believe the virus was traced from wild animals such as bats and rats. Covid is known to be a deadly virus in which not only impacts the world economy but impacts the tourism industries. With the spread of Covid around the world, the impact of Covid on the tourism industries in the United States and the world economy illustrates an increase on the unemployment rates and revenue losses. Thus, would result in a decrease in demand for consumers.

However, the impact of the pandemic has hurt tourism industries as the revenue has declined dramatically. Duffin (2020) estimates how early estimates predicted that, should the virus become a global pandemic, most major economies will lose 2.4 percent of their value of their gross domestic product (GDP) over 2020, leading economist to already reduce their 2020 forecast of global economic growth down from around 3.0 percent to 2.4 percent. Initially, the Global GDP overall, was around 86.6 trillion US Dollars, which was only a 0.4 drop in the economic growth in 2019 compared to 2020 alone where there was a decrease in GDP and a big drop in the economic growth with the pandemic worsening the economy. In 2020, the Global GDP dropped more than 0.4 percent since the pandemic. Duffin emphasizes how the GDP will lose a lot more of its revenue than in 2019 because of the pandemic with less buyers willing to purchase tickets and travel. At the same time, the United States government have imposed travel bans to prevent the further spread of Covid. For countries like Asia, tourism is the most important source of revenue for many economies in Asia. International Tourism receipts for around for more than 40 percent of its GDP in economies such as Palu and Maldives (Abriad 2020). With Covid, many of its tourism industries in Asia's revenue will be expected to decline due to a travel ban and a lack of visitors. Similarly, with tourism industries expected to decline, many of its airline industries are either grounded since few consumers board airlines or have either filed for bankruptcy. Economic damages due to Covid 19 have resulted in a decrease in demand in tourism places in European countries such as Italy. The Covid 19 pandemic has decimated the world's tourism industry because of a decrease in demand at tourist destination of airline, cruise and hotel bookings. Falling demand for oil and cars also is playing a role in the tourism industry's woes.

The Covid 19 pandemic analyzes how this pandemic illustrates a big loss in the tourism industries as many of the industries are suffering financially losing an enormous revenue due to a lack of customers. Additionally, the claim on tourism industries in Europe, Spain and Italy are the two hardest impacted countries that are impacted by Covid-19. In 2019, tourism accounted for 14% and 13% of Spain and Italy's GDP. According to the Bloomberg Calculations (2020), airlines have already fired, furloughed or plan to lay off around 400,000 employees worldwide due to the coronavirus.

Overall, the cruise lines are well known for many tourist which increased the demand for consumers and increase the supply of food. For example, one of the common foods for cruise line industries such as escargots were exported from France and imported to cruise lines. In contrary, with the pandemic impacted tourism sectors of the industry and the economy, many of the industries such as cruise lines that have been hit with an enormous financial loss of revenue which thus causes a decrease in demand for a lot of consumers. Renaud (2020), explains as the cruise line industry struggles to get back in business, it is possible to get access to certain destinations could be refused. For this reason, many of the cruise line laid off many of its employees to raise billions of dollars in liquidity.

This paper aims to investigate the aftermath of the tourism economy since the Covid 19 pandemic hit in early 2020. In this paper, we will see what the impact of the corona virus pandemic will be on the overall global economy. Then, we will see how the Covid 19 pandemic has impacted the tourism sectors on Europe, Africa and Asia. Following that, we will see how the impact on cruise lines were hit hard by the Covid. Next, we will focus on transportation such as the cruise line industries and airlines which are one one of the popular transportation out there that carry passengers from one place to another which thus increase in demand and its revenue amongst its consumers. Additionally, we will look at different tourist sectors such as restaurants and hotels that were also impacted by Covid. Then we will use methodology and then data to further elaborate the impact on Covid on tourism industries. By the end, this paper will answer and explain the research question on the impacts on tourism and GDP since Covid came in 2020.

Literature Review

The Economic Effect on Tourism Industries and Economy

Covid 19 is considered the highest affecting pandemic because it is leading to a devastating impact on the world economy and is costing many lives. According to the United States World Tourism Organization, "it is estimated that tourism is going to be highly affected to due a lack of tourist visiting the tourist places" (Kumar and Rout 2020). Tourism is highly affected because there will be very few tourist visiting places such as Paris France or the Colosseum in Rome Italy, resulting in a global travel ban in Europe which many travelers from abroad cannot visit Europe. Consequently, Kumar (2020) and Rout (2020) find that "with tourism highly affected due to the pandemic, the impact is there will be a loss of $910 billion revenue in US dollars and 100-120 million job losses by the end of 2020"(Kumar and Rout 2020). Kumar (2020) and Rout (2020) also make the claim that the pandemic has caused a loss of 67 million international tourist visitors and $80 Billion in its foreign exchange of earnings from the tourism industry. Popular tourist sports where many tourist go to will lose Billions of dollars from the tourism industry due to the lack of tourist.

Abburumman (2020) also mentions that "the pandemic has impacted every sector of the tourism industry which includes the cultural heritage sites such as Duomo Di Milano in Milan Italy and the Vatican City." With no tourist visiting other parts of the tourism industries, many of its tourism industries are less likely going to recover following the travel ban and stay at home order. Consequently, the World Bank projects that the world GDP will decline by 5.2% in 2020. The tourism industry accounts for 10.3% of its global GDP, 8.9 trillion US Dollars and holds around 330 million jobs. Additionally, the tourism industry including the United States such as big cities like NYC with its Broadway shows and public transportation, and Seattle Washington, where lots of people go to the Space Needles. As a result of this pandemic, it is estimated that at least 121 million jobs will be lost world wide and we will lose 3,435 billion dollars in global GDP.

Since Europe imposed a travel lock down, the tourism economy and revenue will be heavily impacted due to the travel ban. With the result of the pandemic losing so much of its GDP, global visitations may suffer dramatically in revenue due to the global lock down. Here is what previous researchers have done on my subject. They point out that "The United Nations World Tourism Organization (UNWTO) estimates that global visitations in 2020 may drop 60-80% due to the crisis, resulting in losses of hundreds of billions of euros to tourism operators and workers world wide" (Fletcher, Bushers, and Kout 2020). In this case researchers have pointed out that the World Tourism Organization focuses on the European Tourist sites since some of the places are dependent on the revenue on tourism industries and transportation.

With the shutdown on European countries, the amount of revenue lost may hurt the European Economy. Researchers find that "this has provoked wide spread concern that loss of revenue may endanger conservation programming in many places, such as over the past decade ecotourism has become one of the main sources of revenue for conservations as well as one of the main strategies to enroll local people within it". (Fletcher, Bushers, and Kout 2020). Eco-tourism is where it attracts tourist to explore the exotic and natural environments intended to support the wild life. Countries such as Iceland or Norway have Eco-tourism in which can bring many tourist and provide employment and financial opportunities for local people.

Tourism industries in Europe

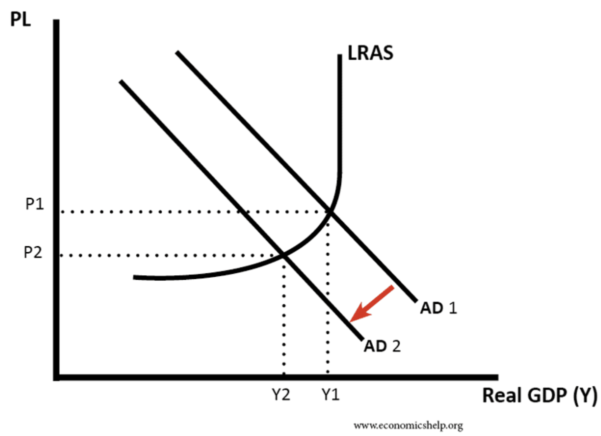
The overall effect on European's tourism industry came to a stop when the World Health Organization (WHO) declared a national emergency on the coronavirus pandemic in the beginning of March 2020. With a travel ban imposed in European countries, this resulted in a decrease in demand among consumers due to the travel restrictions. Moreover, an increase in unemployment is due to the amount of layoffs on employees who lost their income in a public or private sector. According to the Macroeconomic Theory, a cyclical unemployment is defined: as the economy rises and falls, jobs often experience direct impact. As we can see, Williams (2020) makes an assumption on how

“European tourism industries came to an abrupt halt and workers lost their income” (Williams, 2020). Williams (2020) also provides an empirical study that “in 2016, one in 10 enterprises (2.4) million in the European non-financial business economy were in the tourism industries, employing 9.5% of the EU. workforce, namely 13.6 million workers (Eurostat, 2019a, 2019b)”. This study implies that many of its European workers were working in the tourism industries when Covid hit.

Believe it or not, European Tourism industries account for half of the tourist arrivals. An empirical study finds that “Revenue is expected to drop 50% for hotels and restaurants in the EU countries, 70% for tour operators and travel agencies and 90% for cruises and airlines according to a recent European Parliament report” (Tourism: One of the hardest hit regions by Covid 19, 2020). This study suggested that many of the European countries account for many tourist businesses in the economy. Among the countries that were hit the hardest, Spain, Italy, France and Greece are some examples of these countries that rely heavily on tourism.

With Covid impacting on the tourism industries, we can see a big drop in the overall GDP. A statistical analysis from the United Nations States how “Export revenues from tourism could fall by $910 billion to $1.2 trillion in 2020. This will have a wider impact and could reduce global GDP by 1.5% to 2.8%” (Tourism: One of the hardest hit regions by Covid 19, 2020). This statistical analysis points directly to how tourism is a vehicle of integration in generating income. Figure 1 provides a sample for Aggregate Demand (AD) and Long Run Aggregate Supply (LRAS).

Figure 1: Aggregate Demand, Long Run Aggregate Supply Run



In this figure, the x-axis represents the Real GDP also known as the income/output represented by Y. The y-axis represents the price level represented by PL. The two-downward sloping lines represents the Aggregate Demand Curves represented by AD. The upward-sloping curve represents the Long Run Aggregate Supply Curve represented by LRAS. The arrow pointed left from AD1 to AD2 shows a shift in demand for the aggregate demand.

According to the Macroeconomic Theory on Aggregate Demand and Supply, with Covid hurting the tourism economy, we can illustrate an example that we experience a **deflation** which is referred to as price levels go down and more unemployment. This can be referred to a temporary bust in which both the price level (P) and income/output (Y) both decrease. We can see that the tourism industries produce less incomes with the travel bans. This will also decrease the price level. Therefore, this is known as a demand shock in which is a shock that shifts the aggregate demand curve.

Tourism industries in Africa

During 2019, South Africa is a place which attracted many tourist. According to the World Bank Figures, South Africa had a population of 56.6 million people and a GDP of $351 billion in 2019, translating to GDP per capita of $6,000 (Gruzd, Bosman, and Zikalalala 2020). On the contrary, South Africa is already in a recession in which is facing an enormous amount of debt in which the unemployment has topped 30% of the reeling effects of the 10 year cronyism and corruption. What is even worst is that the Economy was already affected by the pandemic. The lock down in Wuhan China and several parts of European countries have huge impacts on imports and exports since the global supply chain was disrupted.

Already, Covid has effected the economy such as trade, mining, oil, tourism, hospitality and many more among the other sectors. According to the UNCTAD forecasts, they predict that with COVID, "the global tourist sectors could lose between $1.2 trillion and $3.3 trillion in 2020, between 1.5% and 4.2% of the global GDP" (Gruzd, Bosman,and Zikalala 2020). Although the government imposed a travel lock down to save lives, the overall effect was that there were many people who lost their jobs, lost their income, and a rising hunger resulting in a decrease in supply since many of them cannot afford to eat any food. Thus, the impact on South Africa due to the travel restrictions has devastated the economy and the tourism sectors.

The impacts on tourism sectors in South Africa were one of the worst affected destinations. According to Rogerson (2020), "the first recorded cases was reported on March 5th when there was a traveler that came back from Italy to South Africa". Italy at that time, had the hardest impact on the virus in which many people were infected with the virus so there was a good chance that the traveler who first bought the virus to Africa was already infected prior to making his way back. Consequently, things go worst as more people in South Africa got infected with the virus which was now the fifth worst affected country globally behind the United States, Italy, Iran, and Brazil. Since the pandemic hit, the president of South Africa had imposed a travel lock down in which nobody was allowed to even leave their homes other than food and medicine. Hence, would affected a decrease in demand and an impact on the GDP on tourism industries prior to the stay at home order.

With the stay at lock down of Africa, the impact on the tourism industries there will decline in terms of its GDP due to the lack of visitors. Thus, leading to small tourism businesses in South Africa are on the verge of facing bankruptcy with the retrenchment of workers and negotiated pay cuts for others. Additionally, “hotels reduced their capacity from 80% to 10%, resulting in a decrease in demand on visitors, in which the hotels have one third of its revenue due to its reduced capacity” (Rogerson and Jane, 2020). For this reason, the result for the overall revenue will decline more than 50% than in 2019 due to a decrease in demand. Since South Africa is already a poor country, the lock down can cause a catastrophic effect on the economy on tourism industries due to Covid.

Impact on Tourism industries in Asia

Another tourism industry that is suffering during the pandemic is India. Travel and tourist sectors accounts for 9.2 percent of India’s GDP. Due to the pandemic, tourism industries are suffering. Moreover, the article draws stats of Covid 19 month by month to see how people were confirmed with the virus and stats show that more cases and deaths increase by each month. Since tourism industry is one of the hardest impacted sectors, results in a decrease in supply and demand. With a catastrophic effect on the tourism industries, “revenue will lose around 620 crore which is approximately a 7 billion loss (USD) overall” (Kumar 2020). Similarly, one of the common places to see in India is the Taj Mahol where most foreigners go. The average number of tickets that was sold was approximately 22,000 tickets, resulting in an increase in both the supply on tickets and the demand for consumers. However, with the pandemic, the quantity number of tickets decreased to the Taj Mahjol. Eventually, the Taj Mahol and other tourist places had to shutdown due to Covid. As a result, it will not be a surprise to see a big decline in revenue resulting in a catastrophic effect.

India’s impact on the tourism industry accounts for 70 percent of its industry workforces and since the pandemic, the job losses on the tourism and hospitality have been around 38 million. Hence, the effect on the tourism and hospitality industries continue to become serious as the amount of layoffs and unemployment rates are projected to become higher. Since the Taj Mahol was very popular for tourist that increases supply and demand, the Taj Mahol is one of the common places that most people go and take a look at the insight of its history and art. Today, the Taj Mahol doesn’t hold that many tourist due to the travel ban and the pandemic. The impact on Covid has taken a toll on the tourism industries given that India is one of the poorer countries in Asia with a lower GDP compared with China or Japan.

Similar to India, Karim (2020), Haque (2020), Anis (2020), and Ulfy (2020), all point how "Malaysia is one of the destination choices to go to among the international tourist" (Karim, Haque, Anis, Ulfy, 2020). According to 2019, Malaysia had welcomed 13 million tourist from around the world in which the revenue increases by 6.8 percent resulting in an increase in demand. Moreover, compared with the revenues between 2018 and 2019, the revenue would increase each year since it generated billions of dollars, indicating the Malaysia is a very popular country. However, since the pandemic hit, massive changes had occurred in which the airline industries took a tumble.

As of right now in 2021, India is one of the hardest hitting countries with Covid in which it is the center of the global crisis. According to the CNN news report, the media states "On May 7 it recorded more than 400,000 new cases of Covid 19 for the last seven days, breaking global records once again" (2021). The rise in the new Covid cases in India is already suffering not only with the tourism industries but with the rise of the deaths since many don't have enough transportation to transport the ill to the hospital. Additionally, India is one of the countries that imposed the world's strictest lock down back in March of 2020 when the Covid virus started to spread all over the world. However, as time passed on, India was easing the travel restrictions so soon when there was no cure to stop the disease. With the amount of time that passed on, India in May of 2021, became one of the hot spot countries that was hit very hard from Covid, not only impacting the tourism industries but also impacted many lives.

With the airline industries taking a tumble, there was a decline in passengers due to the fact that people are afraid of flying during this pandemic, resulting in a decrease in demand for consumers due to the less passengers boarding airlines. As for hotels in Malaysia, they lost millions of dollars in revenue. Additionally, "Malaysia imposed travel entry bans for countries such as Italy, Iran, and South

Korea" (Karim, Haque, Anis, and Ulfy, 2020). Countries such as Italy at that time were one of the countries that were hit the hardest during the pandemic. As a result, not too many tourist from around the world came to Malaysia due to the travel entry.

Asian countries like China, are one of the mostly populated city on earth and one of the biggest countries in Asia that account for many tourist to come and visit. Often times, one of the populated places to visit there is the Great Wall of China in which tourist get the opportunity to explore and learn the history as the demand for tourist increases. However, not too many visitors visit the Great Wall of China or any part of the tourist sectors in any part of Asia as a result of the Global pandemic. According to Lu and Cai (2003), they analyze "China's macroeconomy under SARS and found that SARS has a greater impact on the tourism, transportation, and catering eateries" (He, Niu, and Li 2020). He, Niu and Li all conclude that both the SARS and the Covid epidemic have impacted the tourism, transportation, and catering industries. With a travel ban on China, this would result in demand elasticity because no consumers are able or cannot travel from one place to another.

The Chinese economy is heavily reliant on its tourism industry every single year as many tourist globally come to visit the most important destinations in China. According to the research, "the traveling agencies seem to be impacted by COVID-19 as the lock down situation is established by the Chinese government for prohibiting the spread of COVID-19" (Hoque, Shikha, Hasanat, and Arif 2020). Since Covid was first discovered in Wuhan China at a seafood market which eventually spread rapidly all across the world, the Chinese Government wanted to impose a travel ban on China to prevent any visitors from getting the virus which may cause China to be the hot spot for the pandemic, worsening overtime. As for the foreign exchange earnings, the foreign exchange earning from China from foreign tourism was estimated to being around $127.3 billion. Since the travel ban was imposed, the earnings of $127.3 billion that was made in China from foreigners, dropped significantly from the virus. For this reason, tourism industries are having a tougher time that is affecting the countries.

Japan is another country that is very well-known for its tourism industries. Over the course of these years, Japan is known for its popular tourism industries which will be on the verge of becoming a major economic attraction. Known for the bullet train rides, Mount Fuji, Taisha, and much more, "there were over 31.8 million international visitors in 2019" (Lin, 2020). With an increase in the amount of tourist, Japan was known for hosting the Rugby World Cup and soon to be the Summer Olympics in 2020, attracting many tourist around the world to go to Japan and cheer on for their team. However, when Covid came in March of 2020 and Japan being the third largest travel and tourism economy, Covid on the Japanese Tourism industry will really have a catastrophic effect on the economy. Let alone, "the amount of tourist number of Japan went down 62% in April and 50% in May" (Lin, 2020). Since there aren't any positive economic impacts and the delay of the Olympics, this caused Japan to have a $6 billion dollar economic loss from Covid. Thus, nearly a decade since Japan has faced a major decline in its tourism industry since the 2011 Tsunami that hit wiping out everything. Although the International Olympic Committee plans to help the Japanese government get back on its feet and help with the recovery on its tourism industries, it will be a long way to go before Japan's tourism industry can get back to normal and be financially stable after losing so much revenue in the tourism industry.

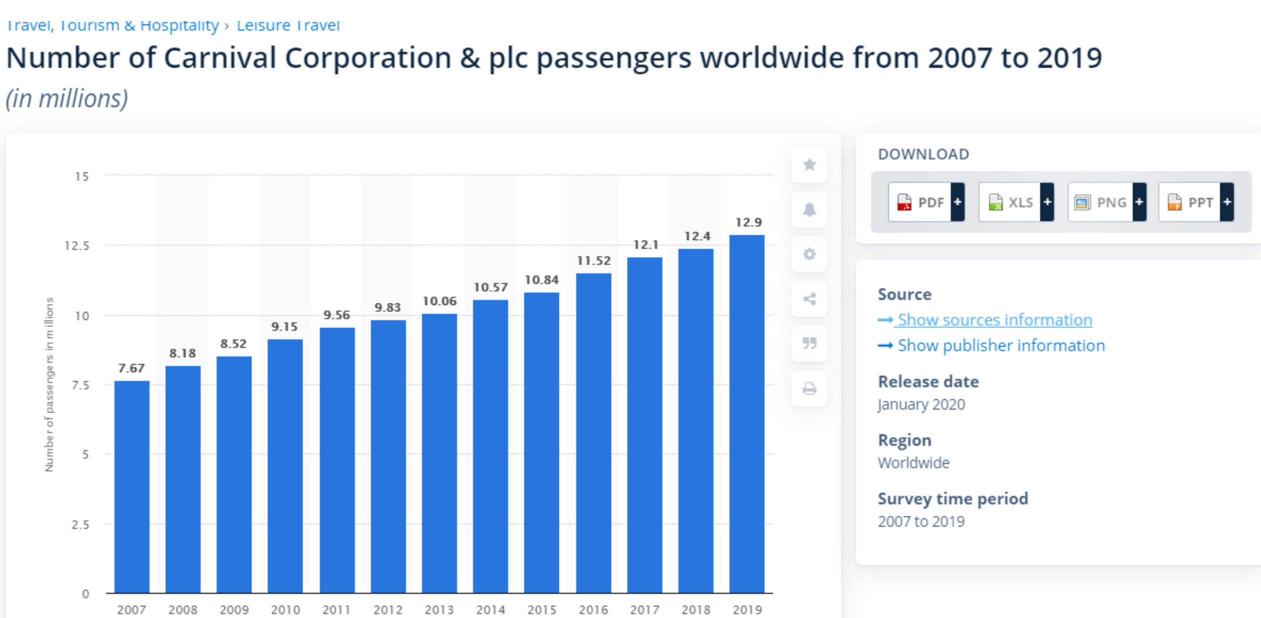
The Economics of Cruise Ships

There have been many studies on cruise line industries stating how cruise lines are among the most popular tourist sectors in the industry because cruise lines result in a surplus with the overflowing amount of tourist from around. Crockett (2020) makes a study, stating how "Cruise ships make this money through two channels: **Ticket sales** and **on board purchases** (e.g., alcoholic drinks, casino gambling, spa treatments, art auctions, and shore excursions), which passengers pay for with pre-loaded cruise cards and chip-equipped wristbands". Although Crockett (2020) makes a study on how ticket sales and on board purchases is what caused the economic revenue to increase, there is many more reasons on how cruise lines make their income. Along with the payment, fine dinning is also how cruise lines make money.

Fixed-cost (FC) is heard a lot in microeconomics in which defines as a production expense that does not vary with the output. In this case, can cost that remains constant can be defined as a fixed cost. However, there is High Fixed Cost in which helps operating the leverage to increase. To elaborate more, according to the article, Crockett(2020) conducts a study, “On the economics of Cruise ships”, “ as a high fixed-cost business, a cruise ship relies on getting as many passengers as possible on the ship — even at fire-sale rates” (Crockett 2020). Based on this study, Crockett (2020) concludes how cruise lines depends on High Fixed Cost to increase the revenue on cruise line industries.

Overtime, with Cruise lines before Covid in 2020, shows an increase in the amount of tourist that boarded cruise lines. Crocket (2020) studies how “at high fixed business cost, a cruise ship relies on getting as many passengers as possible on the ship-even at the fire sales rate” (Crockett, 2020). Crockett’s study suggest that many cruise lines like Royal Caribbean will be filled to a maximum capacity over 100%, up selling the amount of consumers and producers to additional services. Figure 2 shows the amount an increase in demand for passengers boarding cruise lines each year.

Figure 2: Number of Carnival Corporation & passengers world wide from 2007-2019



In this figure above, we can see the x-axis on the horizontal line representing the number of years from 2007 to 2019. The y-axis on the vertical line represents the number of passengers in millions who boarded the number of passengers/tourist boarding the cruise lines. The bars that are shown above represent the average number of tourist who boarded cruises per year.

According to the Economic Theory, a correlation or a relationship is associated with one variable with another. A positive relationship is defined as two variables moving in the same direction which one variable increases while the other variable increases. A negative relationship is where two variables are simply the opposite where one variable increase/decrease while the other variable decrease/increase. In this case, we can see that the this figure above shows a positive relationship between an increase in years and the number and an increase in the average amount of passengers who boarded cruise lines. Therefore, there is a positive relationship between the years with the average amount of passengers who boarded cruise lines.

Cruise Line Industries overall

Before the impact on Covid on the tourism industry and economy, Venice Italy was known for its overflow of tourism. According to Gonzalez, “any of the markets in Venice entered into a phase of very pronounced specialization that leads the city to a musealization, like a tourist product itself” (Gonzalez 2018). Venice’s income basically depends on the amount of tourist because they demand tourist to visit places such as the luxury markets in which it includes a lot of products that can generate a unique experience away from mass consumption.

According to the World Tourism Organization, the Cruise Industry is different from ways of traveling because it is known as a tourist resort and it incorporates all kinds of facilities as a resort. Many of the Cruise lines offer so much activities and games while cruising from one port to another. Since Cruise lines are a popular tourist sector in the economy, from the creation of cruise service, “the demand has been growing at an accelerated rate (one of the biggest growths in the last 30 years, close to the +8% cumulative annual), reflected in the tourist ranking, taking the main cruise companies the first positions" (Gonzalez 2018). Gonzalez concludes that the cruise line sectors has increased both the supply and the demand for the consumers who are willing to buy tickets at a certain price. Studies find that Cruises have boosted marine transportation, exceeding 21 million passengers in 2014 (Gonzalez 2018); indicating a third-degree of price discrimination that reflects different prices for different consumer groups.

The impact on cruise line industries as a result of the pandemic had suspended their operations. At that time, the cruise line industries were one of the fastest growing sectors within the tourism industry. There, "these cruise lines attracted so many tourist from around the world and were founded by the interactions of people, organizations, and geographical entities" (Radic, Luck, Ariza-Montes, Han 2020). The increase in demand on cruise lines resulted in more consumers that are willing to go on board cruise lines. Moreover, many of its people were able to meet new people from around the world to share the experience on board cruise lines. However, when the pandemic hit, "cruise lines experienced huge financial losses in of around $68.4 billion due to the shrinking liquidity" (Radic, Luck, Ariza-Montes, Han 2020). For this reason, cruise lines are on the verge of bankruptcy as a result of the pandemic and a decrease in demand on its consumers.

With so many layoffs, many of the cruise ship employees are experiencing anxiety and mental health problems. Hence, mental, physical, and relationship issues were all due to Covid 19 pandemic that occurred. This anxiety comes from these cruise employees who worry that they may not be able to provide financial support to their family or even their kids or not even seeing their family or friends again. Overall, "the cruise line industry will certainly experience an exponential drop in employment due to Covid-19 pandemic; however, this issue of unemployment will affect cruise ship employees family members as well" (Radic, Luck, Ariza-Montes, and Han, 2020). This illustrates a rise in unemployment rates due to Covid.

Impact on Covid among the airline, hotel, and Restaurant industries

With cruise lines, airlines also are facing bankruptcy too since many of the countries impose travel bans and fewer passengers board airplanes, thus resulting in a decrease in demand for consumers. Covid-19 pandemic has impacted airline industries from around the world in which the US government had imposed a travel ban on European countries to prevent the further spread of Covid. Albers and Volker (2020) analyze the airline reaction to the Covid crisis in the Spring months of 2020, and specifies and differentiates the airline's strategic responses, outlining the key industries of the competitive landscape, and raising attention points for managers and policy makers.

For airlines, there are some flights in Europe that have either grounded their flights or reduced the amount of passengers boarding the flights by 30%. Consequently, airlines such as atlas Global airlines, Norwegian Airlines, Air Italy, and many more have either filed for bankruptcy or gone into court administration cases. As a result, the European airline industry has put a halt on cross boarder traveling, illustrating that most of its airlines are grounded, suspended or have even filed for bankruptcy because of the pandemic. Tourism industries in the United States, Europe, and the world could result in losing 100 million jobs due to a lack of visitors.

Anther part of the tourism industry that was affected was the falling demand for oil and cars as daily commutes as well as the Airline industries. Like the Airline industries that take people to different countries, commuters who commute to different places drive company cars. With Covid, there is a decrease in supply in company cars and a decrease in demand amongst its consumers who are willing to buy a company car at a certain price. Furthermore, the MTA (Metro North Transit Authority) in NYC has tons of commuters on NYC trains and buses. However, very few take trains and buses since there are people who either work for home or have gotten laid off from their jobs resulting in an increase in unemployment. With the rise in the pandemic, "daily commuters, social events, and holidays are no longer possible" (Duffin 2020). Many of its commuters are not able to go anywhere or go on vacation.

The impact on the United States tourism industries such as hotel and restaurant industries have caused a catastrophic effect to its economy. Since the pandemic hit, hotel industries in the United States have resulted in a decrease in tourism. Moreover, the hotel accommodation sector in the United States, due to the restrictions, and lock downs since March had lose over 13 billion dollars in room revenues since mid-February when health concerns started to escalate (Sonmez, Yorghos, Michael, and Hsieh,2020). That is, tourist from around the world such as foreign countries like Europe and Asia cannot come to the United States since the United States government has placed a halt on traveling.

Following the impact on the hotel industries, the impact on tourist sectors are restaurants in which they are known to be the second largest private sector employer group in the United States industry. Many tourist and vacationers would go to restaurants to get together with family and try out some delicious foods such as Olive Garden, thus increasing demand for consumers in which the revenue would increase overall. According to statistics, restaurants and bars account for 60% of the jobs (Sonmez, Yorghos, Michael, Hsieh, 2020). Similarly, a lot of job layoffs towards employees, the layoffs could affect people's mental health due to the fact that these employees are working in low paying jobs (not meeting the minimum wage), and need the money to support themselves and family. In particular, Sevil, Apostolopoulus, Yorghos, Michael, and Hsieh (2020) describe how restaurants attract customers restaurants attract customers for the delicious foods in which they claim that hotels and restaurants account for a part of the revenue on its tourism industry. Hence, with very few to no tourist going to hotels nor restaurants, may end up filing for bankruptcy because of Covid-19.

Methodology

This paper will focus and explore on the relationships and explain the differences between European countries. This will be done by using an econometric model, the OLS (Ordinary Least-

Squared) method. In this paper, I will make two hypothesis from this study. H0: I hypothesize that Covid would not impact the overall global GDP if there are a few visitors in different sectors. H1: I hypothesize that Covid will impact and hurt the overall global GDP because of the number of travel bans world wide and a decrease in consumers. If H0 is rejected, then this will support that the hypothesis on Covid has hurted the overall tourism economy and by how much the overall tourism economy has been hurting due from Covid. For these econometric equations, we using two different types of equations. Equation 1 will be measured from its lock down, tourism, debt, and governance while equation 2 will measure Constant, Lock down, Tourism, Governance, and exclude Debt.

1. Y= α LOCK DOWN + β TOURISM + γ DEBT + δ GOVERNANCE + ε
2. Y= constant + α LOCK DOWN + β TOURISM + δ GOVERNANCE + ε

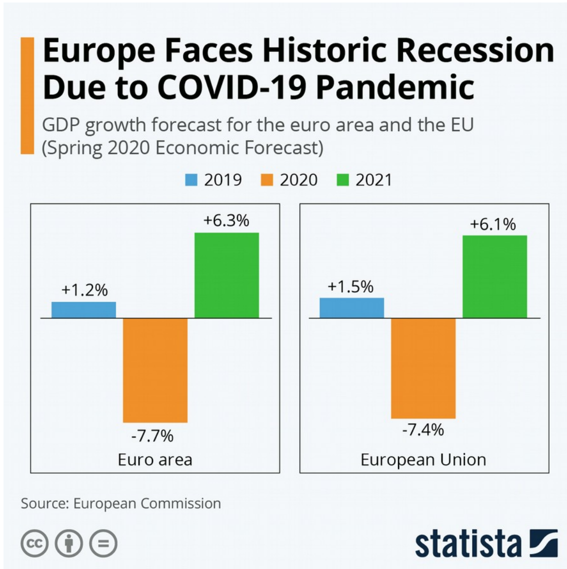
Data

This paper analyzes the relationship and explains the differences between countries. Using this econometric model, the full model estimated is:

Y = constant + α LOCK DOWN + β TOURISM + γ DEBT + δ GOVERNANCE + ε

where Y (GDP) is the dependent variable and Lock down, Tourism, Debt, and Governance are the independent variables. In other words, Y is dependent on Lock down, tourism, debt, and Governance. As we can see from this equation, Y represents the differences between July 2020 and February 2020 forecasts of the growth rate of 2020, α represents the Lock down in which illustrates the strictness to measure the stop of the coronavirus, β represents tourism that is shared with GDP (in percent), γ represents the public debt to GDP ratio (in percent) which in other words finding out how much was loss, δ represents Governance in which is the score of the governance indicator, and ε simply represents the error term (Bruegel, 2021). To add on, data from figure 1 gives an example of the Historic Recessions that Europe faced during Covid.

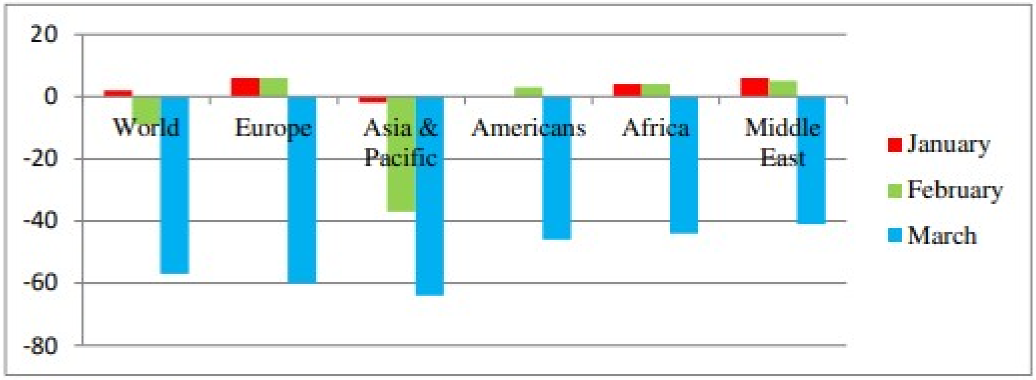
Figure 1: Historic Recession.



As we can see here, taking this data from Statista, the Blue bar represents 2019 indicating that the GDP growth rose by at least 1% within the tourism industries and the European Union alone. The Orange bar represents the year 2020, indicating that the GDP fell by at least 7 % in the tourism industries and the overall European Union. However, the Green bar represents the year 2021 which is this year and it illustrate that GDP is rising by 6% within the tourism industry and the European Union alone. Based on what we conclude on this figure, we can see that GDP fell dramatically during 2020 right when Covid hit. This can imply that travel bans can be a reason on why GDP fell. While 2021 may be an increase in GDP, this indicates more vaccinations among people easing travel restrictions and giving the okay for people to travel again.

To give another graph to illustrate the impact Global GDP has on the entire tourism industry, here we have Chart 1 to illustrate how each country from different regions have been impacted due to Covid.

Chart 1: International Tourist Arrivals Percentage Change by Month (January, February, March) 2020



Source: World Tourism Organization (UNWTO, 2020b)

As we can see from this table from chat 1 from the World Tourist Organization (UNWTO), it gives and overview of the percentage change by international tourist from January to March of 2020. Here, we can see a break down from different countries and we estimate if there is any significant change since Covid first came. Additionally, this explains a significant change in March as the percentage change goes downhill as less tourist arrive at different countries, hurting the tourist sectors when the governments imposed a travel ban among several countries to prevent the spread of Covid from one part of the country to another, thus illustrating a decrease in demand and a decrease in revenue. Based on what was found from chart 1, the Asian Pacific Region and the European Region were hit that hardest from Covid 19 which caused a drop in tourist arrivals. Moreover, Asia Pacific didn't have an increase in its tourist visitors since it was obvious that Covid came from Wuhan China which eventually ruined everything, especially the tourist sectors. Besides, the governments decided to impose a travel ban in Asia Pacific to reduce the amount of spreading on Covid which ultimately resulted in a demand decrease among the tourist and visitors.

Results

This paper summarizes the differences between countries that were hit by Covid and the data is collected from a research report published under JSTOR, bruegal.org.

Table 1: Estimation results for the GDP shock in 2020: July 2020 forecast minus Feb 2020 forecast

	Equation (1)		Equation (2)	
	Coefficient	t-value	Coefficient	t-value
Constant	-4.875	-2.237*	-4.500	-2.222*
LOCKDOWN	-0.119	-2.242*	-0.134	-3.331**
TOURISM	-0.142	-2.377*	-0.148	-2.584**
DEBT	-0.004	-0.524	--	--
GOVERNANCE	0.173	1.943*	0.175	1.993*
Adjusted R Squared	0.560		0.575	

Source: Bruegel. Note: ** means significant at the 1% level; * means significant at the 5% level.

This study uses data of the GDP shock in 2020 from table 1 which represents two equations. The first equation from table 1 shows the relationship between the coefficient and t-value. This study done from equation 1 done by Bruegel shows "ECB's pandemic emergency purchase program (PEPP) has been successful in countering the risk that high public debt euro area countries would be cut off from the market if they attempt to expand their debt issuance to respond to the COVID-19 crisis" (Bruegel, 2021). Equation 2 re-estimates the model without debt. We can see by calculating the equation of Y that the Adjusted R Squared is greater in equation 2 than in equation 1 at 0.575 compared to 0.560. That is because equation 2 was measured without including the statistical value of debt. As a result, we can see from the adjusted R square from equation 1 that there is a positive correlation between the GDP of Y and debt because of the travel bans that were imposed, leading to a decrease in demand and a loss of revenue.

To get a better understanding of the results on GDP shock in 2020, we used equation 2 from table 1 to compute the economic shock for the individual countries. In this case, table 3 shows a difference between the two actual values between Italy and the Netherlands.

Table 3: Actual and predicted values for Italy and the Netherlands

	Actual values			Predicted values by eq. (2)			
	IT	NL	IT-NL	IT	NL	IT-NL	
Constant	--	--	--	-4.5	-4.5	0.0	--
LOCKDOWN	55	43	12	-7.3	-5.7	-1.6	55%
TOURISM	2.3	1.9	0.4	-0.3	-0.3	0.0	2%
GOVERNANCE	2.92	10.16	-7.24	+0.5	+1.8	-1.3	43%
Y variable	-11.5	-8.1	-3.4	-11.8	-8.5	-2.9	100%

Source: Bruegel. Note: ** means significant at the 1% level; * means significant at the 5% level.

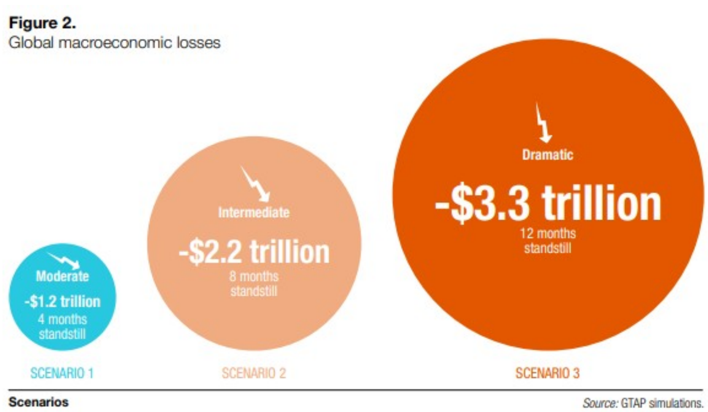
Here, we examined and compared the actual values and the predicted values for both Italy and the Netherlands. This study uses data from the 2021 table of the actual and predicted values for Italy and the Netherlands to examine the difference with three out of four variables (Bruegel, 2020). These three variables that we focus on are Lock down, Tourism, and Governance. To compute the contribution of the contribution to the variables and the GDP shocks between Italy (IT) and the Netherlands (NT), we first compute the contribution to the four explanatory variables of the GDP shock. Next, we estimate the predicted values for Y by adding Lock down, Tourism and Governance and compare the Y variables for Italy and the Netherlands with Actual Values versus the Predicted values by equation 2. Then, we compute the contribution to the differential GDP shocks between Italy and the Netherlands. As we can see, Italy has a higher impact on its GDP and the tourism industries for both the actual value and the predicted values.

While we only computed the differential GDP shocks between Italy and the Netherlands, we would then compare the differential shocks to other European Countries such as Greece (EL), Spain (ES), and Portugal (PT) based from table 4, shown below.

Table 4: Summary of the GDP Shocks

	Actual values				Predicted values by eq. (2)					
	IT	EL	ES	PT	IT-NL	EL-NL	ES-NL	PT-NL	S4-NL	S4-F4
LOCKDOWN	55	44	47	48	55%	5%	28%	30%	30%	51%
TOURISM	2.3	8.3	5.2	7.9	2%	37%	25%	41%	26%	15%
GOVERNANCE	2.92	1.67	4.85	6.43	43%	58%	47%	29%	44%	34%
Y variable	-11.5	-11.4	-12.5	-11.5	100%	100%	100%	100%	100%	100%

As shown from the data, we computed the average contribution with the three factors of the stub excluding the Y variable and comparing these factors with the Netherlands. Overall, when we compared these European Countries to the Netherlands, we can see that the Lock down is an important factor at 51% compared to the rest of the factors. Therefore, it is clear that during the Covid pandemic, these lock downs were the ones that had a decrease in GDP on its tourism industries due to the travel ban that was imposed on European Countries that accounted for the GDP shocks.



In figure 2, this indicates a positive relationship with the Global GDP and the tourism industries. The GDP has a direct impact on the tourism industries as there is a big loss in revenue with travel bans resulting in a decrease in demand. As we can see, from each scenario within every four months, the average amount of money that was lost was $1.1 trillion which around 1.5% of the Global GDP that was lost due to Covid. According to the 12 month period where travel restrictions were imposed, the overall GDP that was loss was $3.3 trillion (4.2% of the world's GDP) respectively (Gopalakrishnan, Peters, and Vanzetti, 2020).

Conclusion

This paper analyzed the impact on tourism industries and GDP since Covid was discovered. In summary, the impact on tourism industries and GDP during Covid is that there was a loss in revenue on the overall tourism economy. As well as the tourism economy that is hurted the most, there was an increase in unemployment as many people were laid off. After doing a test on the ordinary least square methods (OLS), we find that the adjusted R square from table 1 on equation 2 is greater than equation 1. That is because when doing this equation, debt was excluded which thus showed that there was a positive correlation between the GDP (Y) and Lock down, Tourism, Debt and Governance. From another table showed the breakdown of European Countries to see which country suffered the most between Italy and Netherlands using the actual value vs predicted values and Italy was the one that suffered more with its GDP loss for both the actual and predicted values. In terms of these results, it can be said that several of the tourism industries were hit very hard from Covid, thus losing a lot of revenue, hurting the entire economy.

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