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Research Article

Benchmarking the Devastating Effects of COVID-19 on Economies and Social Life in the EU and In Selected Countries Mostly Affected By the Pandemic

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ABSTRACT

Background: Life will not go on same after the pandemic since the countries are negatively affected economically, socially and politically due to coronavirus pandemic so that states, entrepreneurs, consumers and individuals will exhibit different behaviours than they showed before. As the social state raised during the pandemic, governments announced many economic and social packages to prevent both the real sector and their.

Aim: This study aims to investigate the growth rates of confirmed cases and deaths related to COVID-19 in the World, Europian Union and some selected countries mostly influenced by the pandemic, the health indicators for the countries and to analyse the effect of the pandemic on economy, trade and tourism.

Methods: The data for the COVID-19 confirmed cases and deaths was gathered from European Centre for Disease Prevention and Control (ECDC) for the world, EU-27, China, France, Germany, Italy, Spain, Turkey, UK, USA and was smoothed with Simple Moving Average process to reduce volatility.The daily and cumulative empirical growth rates for COVID-19 confirmed cases and deaths were calculated for each country to make comparison by logarithmic scale. The health infrastructure and human resources and the impact of COVID-19 on the economy and foreign trade for the countries are examined.

Results: The number of deaths in Italy, France, Spain, UK and USA which were heavily affected by the pandemic exceeded ten thousand in a couple weeks. In some countries, it was clearly seen that the health system was not sufficient to fight against pandemic. The disruptions in the supply chain of the countries caused their production and external trade to halt and the mobility of goods, services and people in and outside the countries have been minimized due to the pandemic. Both the manufacturing industry and the service sectors have contracted in this process. Flight bans have hit mostly the tourism and transportation sectors so that this will have negative effects on the balance of payments for many countries especially for developing ones disrupting both export and tourism revenues.

Conclusion: COVID-19 not only affected the individual's daily life but also have influences on social and economic life of the countries. After the outbreak, it is seen that people cannot travel as comfortably as they are used to and that they will maintain social isolation for a while by standing against each other even for their family, relatives and friends. In addition, there will be a big change in production and consumption habits in the economy. It seems that it will take a long time for people to regain their psychology.

Keywords: COVID-19; Economic effect; Social effect; Health system; Outbreak

Introduction

A novel coronavirus was eventually identified after it was reported as a cluster of cases of pneumonia in Wuhan, Hubei Province, China. The new type of corona virus, which emerged in the last days of 2019 in Wuhan has rapidly spread throughout the world and has become a global epidemic and was declared as a pandemic by the World Health Organization (WHO) on March 11, 2020. Deeply concerned both by the alarming levels of spread and severity, and by the alarming levels of inaction, WHO needed to make the assessment that COVID-19 can be characterized as a pandemic [1].

Coronaviruses are the viruses those have crowned-like spikes outside their body according to the US Centers for Disease Control and Prevention (CDC). Coronaviruses have four main sub-groupings as alpha, beta, gamma, and delta. First human coronaviruses were identified in the mid-1960s and seven of them can infect people. 229E (alpha coronavirus), NL63 (alpha coronavirus), OC43 (beta coronavirus), HKU1 (beta coronavirus), MERS-CoV (the beta coronavirus that causes Middle East Respiratory Syndrome, or MERS), SARS-CoV (the beta coronavirus that causes severe acute respiratory syndrome, or SARS) and SARS-CoV-2 (the novel coronavirus that causes coronavirus disease 2019, or COVID-19) are the seven coronaviruses those are infecting people. 229E, NL63, OC43, and HKU1 usually infect human but sometimes coronaviruses as 2019-nCoV (SARS-CoV2), SARS-CoV and MERS-CoV which infect animals can evolve and make people sick and become a new human coronavirus [2].

Initially, since the countries fought with the pandemic inside, they were not able to help their neighbors, trading partners and even union partners. In some countries, it was clearly seen that the health system was not sufficient enough to fight with the pandemic. COVID-19 has become an urgent intervention for public health,

due to its high contagiousness, permanent damage to the human body and its life-threatening effects especially for the elder people and individuals with chronic diseases. Older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness than the others [3].

Having significantly rising risk of severe disease due to COVID-19 for older adults is a very important observation for the European Region: of the top 30 countries with the largest percentage of older people, all except Japanin Europe are the countries most affected by the pandemic [4].

COVID-19 not only causes effects in health system, but alsoworsens the economy, changes social life and psychology pf individuals. Since the number of deaths in Italy, France, Spain, UK and USA which were heavily affected by the pandemic exceeded ten thousand in a couple weeks, many countries banned the flights and closed their borders in order to protect their citizens' health and life. Many international organizations such as United Nations (UN), International Monetary Fund (IMF), the World Bank (WB),World Health Organization (WHO),Organisation for Economic Co-operation and Development (OECD), World Trade Organization (WTO), United Nations Conference on Trade and Development (UNCTAD),United Nations Development Programme (UNDP), International Trade Centre (ITC) etc. issued the policy responses to fight against COVID-19 and to protect the enterprises andvulnerable part of the population.

Many countries closed their airports for both domestic and international flights, restriced the movement of people in cities and between cities, put restrictions on trade of some medical products and protective materials, social isolation, schools' closure, lockdowns and curfew applications in the country. Studies on medicines, medical products and vaccine to fight with COVID-19 were gained priority in R&D and supported by the governments all over the world. While countries especially in Europe let the COVID-19 to spread to achieve herd immunity, some countries such as Turkey have taken measures before the pandemic emerge in the country and after the occurrence Turkey had made restrictions and tried to curb the virus by the filiation method of screening the chain of contact in infectious disease with more than six thousand filiation team.

This study aims to investigate the growth rates of confirmed cases and deaths related to COVID-19 in the world, Europian Union and some selected countries mostly influenced by the pandemic, some basic health indicators for the countries and to analyse the effect of the pandemic on economy, trade and tourism.

Method

Country and data selection

In the study COVID-19 cases and deaths were analysed for the world, Europen Union (EU-27), China, France, Germany, Italy, Spain, Turkey, UK and USA. The countries were selected since China is homeland source of the COVID-19 and the others were mostly affected by pandemic.

The data for the COVID-19 confirmed cases and deaths was started from the first day that cases and deaths reported for each country in the study. The data for COVID-19 is gathered from ECDC. The data for the EU-27 and the world is calculated by summing up each member state's data.

The health indicators are from Republic of Turkey Health Ministery, WB, Eurostat, OECD and WHO. The demographic data is from United Nations Department of Economic and Social Affairs (UNDESA).

Smoothing the data with simple moving average

We can call taking a moving average of a data set is a smoothing process. Considering daily COVID-19 cases and deaths, the average of cases for the first 7 days' is calculated as $(c_1+c_2+c_3+c_4+c_5+c_6+c_7)/7$ whereas the average of deaths for the first 7 days' is calculated as (d1+d2+d3+d4+d5+d6+d7). This smoothing process is continued by advancing one period and calculating the next average of cases and deaths for seven days, dropping the first day's cases and deaths.

The moving average as a smoothing technique can hide the latest changes in the trend as it uses data from previous periods, as well as reducing volatility in data related to COVID-19 [5].

Growth rates of COVID-19 confirmed cases and deaths with logartihmic differential

Infectious diseases as COVID-19 spread in a logartihmic scale rather than an even, linear fashion. On a linear scale graph, the growth rate goes on to increase continuously, and the line can become almost vertical L-shaped, steady forever. This may create the impression that the social distance practice and protective measures against the pandemic do not work. On a logarithmic scale, each interval increases by a certain factor, rather than increasing the numbers on the Y axis in equal increments. Therefore, it is ideal for measuring logarithmic scale change rates, especially growth rates.Since the logarithmic scale flattens out the data, it is now easier to see the growth rate. On a logarithmic graph of COVID-19 infections, one can easily see the point at which the growth rate begins to decline when this exponential growth stops, even if the total numbers still increase.At this point it is precisely that the logarithmic scale makes it possible to see when public health measures begin to have the desired effect [6].

After smoothing the data by simple moving average and taking natural logarithms we can formualtethe daily empirical growth rate for COVID-19 confirmed cases is as;

$r_c(t)=\ln(C_t/C_{t-1})=\ln(C_t)-\ln(C_{t-1})$ (1)

and for COVID-19 confirmed deaths is as;

$r_d(t)=\ln(D_t/D_{t-1})=\ln(D_t)-\ln(D_{t-1})$ where r: growth rate, ln: natural logartihm, t:day,C: smoothed COVID-19 confirmed cases per day,D: smoothed COVID-19 confirmed deaths per day.

The study doesn't depend on outcomes from studies involving humans and related data.

Results

First confirmed COVID-19 case was idenfied on 31 December 2019 in Wuhan, China.It has rapidly spread throughout the world and has become a global epidemic and was declared as a pandemic by the WHO. First death was recorded in China on 11 January 2020. International flights from Wuhan caused the virus

to travel to the other countries via passengers. With more than hundred thousand cases in USA, Italy, Spain, France, Germany, Turkey, UK and Russia it seems center of the pandemic is not China anymore but shifted to Europe and USA [7].

In Europe first confirmed case was noted in France in 25 January 2020 and first death occured on 15 February 2020 in France again. In spite of prevententions to avoid from the pandemic faced in January and February, Turkey faced with the first confirmed case in 11 March 2020 and had first death in 17 March 2020. As April 15 2020, total confirmed cases were nearly 2 million in the world and more than 30% was in USA. If the monthly data is analysed, it is seen that the Case Fatlity Rate increases month by month as confirmed cases rises up (Table 1) [8, 9].

In Table 2 there is comparison of COVID-19 cases, deaths and growth rates calculated by smoothing the data with 7-days Moving Average method and then taking the natural logarithms for the country set (Table 2).

On 1 April 2020 new COVID-19 cases data was as 10.25 in EU where cumulative cases data was 12.63. On 15 April 2020 new COVID-19 cases data decreased to 9.9 where cumulative cases data increased to 13.41. On 1 April 2020 new death from COVID-19 data was as 7.74 in where cumulative deaths data was

Table 1: COVID-19 cases in the EU and in selected countries mostly affected by the disease.

Country	First COVID-19 case Date	First date of the death from COVID-19	Total days after the first COVID-19 case	Total days after the first death from COVID-19	Total COVID-19 cases	Total deaths from COVID-19
USA	21.01.2020	1.03.2020	85	45	609,516	26,057
China	31.12.2019	11.01.2020	106	95	83,352	3,346
Italy	31.01.2020	23.02.2020	75	52	162,488	21,069
Germany	28.01.2020	10.03.2020	78	36	127,584	3,254
UK	31.01.2020	6.03.2020	75	40	93,873	12,107
France	25.01.2020	15.02.2020	81	60	103,573	15,729
Spain	1.02.2020	5.03.2020	74	41	172,541	18,056
Turkey	11.03.2020	17.03.2020	35	29	69,392	1,518
EU-27	25.01.2020	15.02.2020	81	60	724,940	69,237
World	31.12.2019	11.01.2020	106	95	1,952,792	126,083

Table 2: Comparison of COVID-19 cases, deaths and growth rates in the EU and in selected countries mostly affected by the disease for the period 1 April-15 April.

	USA	China	Italy	Germany	UK	France	Spain	Turkey	EU-27	World
New COVID-19 cases on 1.04.2020 (MA, ln)	9.86	4.55	8.56	8.54	7.80	8.36	8.96	7.55	10.25	11.04
New COVID-19 cases growth rate on 1.04.2020	12.85%	-3.55%	-3.21%	9.09%	9.72%	18.88%	4.94%	12.76%	5.98%	8.47%
Cumulative COVID-19 cases on 1.04.2020 (MA, ln)	11.74	11.31	11.42	10.87	9.75	10.53	11.17	9.15	12.63	13.39
Cumulative COVID-19 cases growth rate on 1.04.2021	16.53%	0.12%	5.90%	10.28%	15.40%	12.10%	11.63%	22.41%	9.67%	9.95%
New COVID-19 deaths on 1.04.2020 (MA, ln)	6.15	1.27	6.69	4.42	5.27	5.85	6.67	3.44	7.74	8.11
New COVID-19 deaths growth rate on 1.04.2020	23.94%	-11.33%	1.73%	24.35%	24.22%	11.30%	6.29%	24.87%	7.64%	10.94%
Cumulative COVID-19 deaths on 1.04.2020 (MA, ln)	7.73	8.10	9.21	6.04	6.94	7.76	8.65	5.02	9.91	10.33
Cumulative COVID-19 deaths growth rate on 1.04.2020	22.92%	0.11%	8.40%	22.14%	20.91%	15.89%	14.72%	22.90%	12.23%	11.49%
New COVID-19 cases on 1.04.2020 (MA, ln)	10.31	4.40	8.25	8.15	8.62	8.20	8.43	8.40	9.99	11.29
New COVID-19 cases growth rate on 15.04.2020	-1.74%	-6.31%	-0.25%	-6.04%	4.28%	7.01%	-7.32%	0.53%	-2.46%	0.10%
Cumulative COVID-19 cases on 15.04.2020 (MA, ln)	13.17	11.33	11.93	11.69	11.26	11.44	11.99	10.94	13.41	14.36
Cumulative COVID-19 cases growth rate on 15.04.2021	5.90%	0.10%	2.57%	2.96%	7.40%	3.99%	2.89%	8.24%	3.33%	4.76%
New COVID-19 deaths on 15.04.2020 (MA, ln)	7.54	0.25	6.33	5.29	6.74	6.65	6.41	4.61	7.94	8.76
New COVID-19 deaths growth rate on 15.04.2020	3.89%	-10.54%	0.00%	2.25%	-0.13%	-11.45%	-4.05%	4.05%	-5.28%	-0.65%
Cumulative COVID-19 deaths on 15.04.2020 (MA, ln)	9.92	8.11	9.87	7.89	9.18	9.52	9.70	7.09	11.02	11.58
Cumulative COVID-19 deaths growth rate on 15.04.2020	9.68%	0.04%	2.95%	7.73%	9.16%	5.84%	3.79%	8.75%	4.69%	6.12%

9.91. On 15 April 2020 new COVID-19 death data increased to 7.94 where cumulative deaths data increased to 11.02. The new confirmed cases growth rate was 5.98% and cumulative cases growth rate was 9.67% on 1 April 2020 where the new death growth rate was 7.64% and cumulative deaths growth rate was 12.2%. On 15 April 2020, the new confirmed case growth rate was -2.5% and cumulative cases growth rate was 3.3% where the new death growth rate was -5.3% and cumulative deaths growth rate was 4.7%.

It is seen that the growth rate of confirmed cases was high at the beginning of outbreak in the countries where control measures have not taken yet. The growth rates of confirmed cases have decreased due to the fact that governments have closed the borders, banned the domestic and international flights, put social distance, home isolation and wearing protective materials against the virus such as mask, put restrictions to be in the crowded places such as shoppingmalls and on-line education application. The lowest confirmed case growth rate was in China as -6.3% and EU as -2.5% where UK has the highest growth rate as 4.3% (Figure 1).

The growth rate of deaths from COVID-19 was high in each country at the beginning of the pandemic. Death growth rates started to decrease as countries have fought with the pandemic with entire health systems.The superior efforts of doctors and nurses in this fight against the pandemic are admirable. As 15 April 2020 China has the lowest growth rate of death from COVID-19 with -10.5%, while it was followed by the EU with the rate -5.3%. Turkey and the USA were the countries with the highest death growth rate with 4% and 3.9% (Figure 2).

As 15 April 2020 there were more than 1.9 million confirmed cases and more than 123 thousand deaths in the world. The European region, which has 51.1% of confirmed cases and 68.8% of deaths, seems to be the new center of the Chinese-origin pandemic. The confirmed case share of the EU was 37.9% and the death share was 56.3%. Americas region is following the European region with confirmed case share 35.2% and death share 22.2%. According to the WHO data, the global average Case Fatality Rate was 6.4% where it was 8.7% in European region, 9.6% in EU and 5% in Eastern Mediterranean (Table 3).

Epidemiological indicators

According the ECDC data the average global Case Fatality Rate is 6.4% and EU's rate is 9.6%. Among hundred thousand

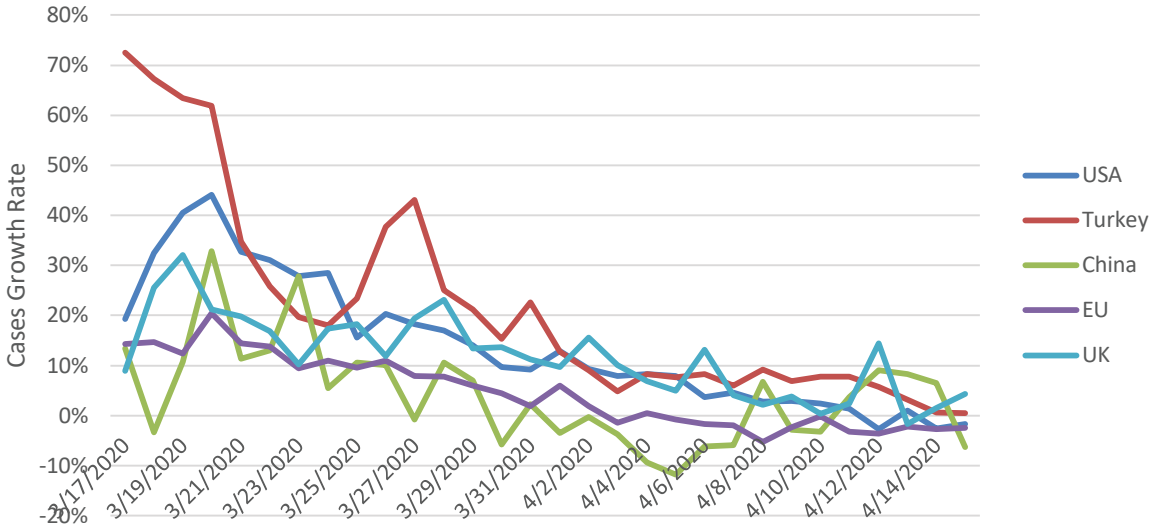

Figure 1: COVID-19 cases growth rate in the EU and in selected countries mostly affected by the disease in the period 17 March-15 April.

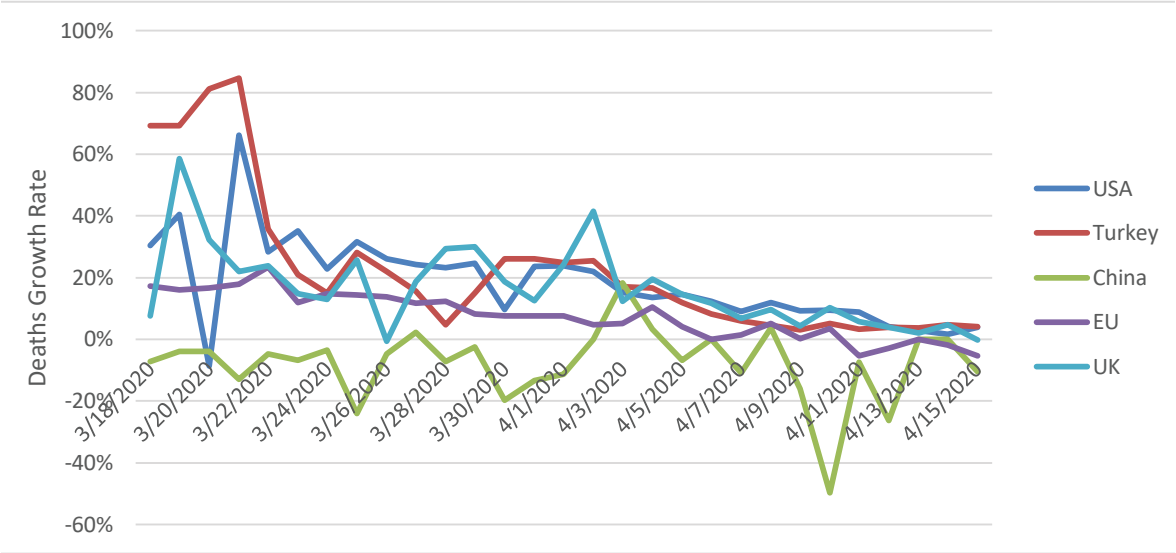

Figure 2: COVID-19 deaths growth rate in the EU and in selected countries mostly affected by the disease in the period 18 March-15 April.

Table 3: Geographical distribution of COVID-19 cases, deaths and death ratio (Case Fatality Rate) on 15 April 2020.

Region	Cases	Deaths	Death Ratio	Regional share (cases)	Regional share (deaths)
European Region	977.596	84.607	8.7%	51.1%	68.8%
-EU27	724.940	69.237	9.6%	37.9%	56.3%
Americas Region	673.361	27.336	4.1%	35.2%	22.2%
Western Pacific Region	124.204	4.201	3.4%	6.5%	3.4%
Eastern Mediterranean Region	107.389	5.395	5.0%	5.6%	4.4%
South-East Asia Region	20.287	936	4.6%	1.1%	0.8%
African Region	11.367	523	4.6%	0.6%	0.4%
Others	712	12	1.7%	0.0%	0.0%
World	1.914.916	123.010	6.4%	100.0%	100.0%

people the global Mortaliteis 1.62, the Prevelanceis 25.05 and Incidence is 9.68. For EU the Mortaliteis 15.55, the Prevelanceis 162.82 and Incidence is 41.92. France has the highest death rate (Case Fatality Rate) for the pandemic with 15.2%. Italy and UK are following France with 13% and 12.9% rates. Spain has the highest Mortalite with 36.82, Italy and UK is following Spain with a 34.85 rate. Spain has the highest Prevelance with 369.03, Italy and USA are following Spain with 268.74 and 184.14 rate (Table 4) [8,10,11].

Demographic indicators

Older adults who are threatened by COVID-19 infection are at significantly risk of severe diseases. The European region is the riskiest place for this observation. Out of the top thirty most affected countries by the pandemic except Japan and are European countries and have large elderly population [4].

In 2020 the ratio of 65 and over people in total population was 9.3% for world average, 20.8% for EU, 23.3% for Italy, 21.7% for Germany, %20.8 for France, 20% for Spain, 18.7 for UK, 16.6 for USA and 12% for China. Turkey seems to be the country with the lowest ratio. In 2100 it is predicted to be 22.6% fort he world average, 32.5% for EU, 36.3% for Italy, 31.3% for Germany, %32.3 for France, 35.2% for Spain, 29.9 for UK, 27.8 for USA, 31.8% for China andeven for Turkey 33.5% by United Nations (Table 5). It is obviously seen that world is getting older and health sytem should be more ready against new pandemics and diseseas than before [11].

Basic health indicators

The global spread of the virus is not expected to end immediately. Development of a vaccine and drug against pandemic is not so easy in a short time. Countries try to flatten the curve that shows the spread of the virus and to slow down the speed of the epidemic, to alleviate its effects on health systems and to save lives. The most effective way to do this is to take measures to ensure social distance effective, such as restricting travel, canceling concerts, conferences and other large-scale events, and remotely taking classes at universities and other schools [12].

Per thousand peoplePractising Physicians is 1.5 for the World average, 8.82 for EU, 4.25 for Germany, for Italy, 3.88 for Spain, Practising Nursesis 2.54 for the World average, 3.73 for EU, 12.9 for Germany, 11.74 for USA, 10.8 for France, 5.48 for Italy, 5.74 for Spain. China and Turkey in the fight against the pandemic in a short time are more successful compared to other countries even they have lowest Practising Physicians and Practising Nursesper thousand people.

The World average for "Curative (acute) Care Beds"per thousand people is 2.70 and for EU is 5.41 where for Germany is 8, for France is 5.98, for Italy 3.18 and for Spain 2.97.

The World average for the "Health spending share as a % of Gross Domestic Product (GDP)" is 9.9% and for EU the share is 9.87%. USA seems to be the country that has the largest share with 16.94%. Germany and France are following USA with 11.23% and 11.18% shares.

Finally, the World average for the"Life expectancy at birth, total (years)"is 72.38 and for EU the share is 80.97. Spain seems to be the country that has the longest life expectancy with 83.33 Italy and France are following Spain with 82.95 and 82.53 years (Table 6).

The improvements in healthcare system with the developments in innovation will decrease mortality rates in a country and promote to reach a long living population level with a higher "Life expectancy at birth" and healthy labour force enhancing productivity and economic growth in a country not in short term but in a time period. Economic growth not only increase income but also promotes technological investments in healthcare system as well [9,13-17] ([1]Bulgaria,Croatia (2015);Cyprus,Denmark, Fi nland(2016);Estonia,France,Italy,Lithuania,Malta (2018); for others 2017 data. [2]EU-28).

Economic effects

COVID-19 affected both the individual's daily life and countries' social and economic structure.For each month of containment, there will be a loss of 2% points in annual GDP growth as well as 70% in the tourism sector alone faces an output decrease. If lockdown goes on it seems many economies will fall into recession [18].

Increasing public spending on social projects and healthcare during pandemic and relaxation in fiscal policies such as postponing tax collection, which is the biggest source of government income, has started to reflect negatively on the budgets of some countries. Some countries which exceeded a hundred in a short time have asked for credits to reduce the effect of pandemic damage from international organizations such as IMF as a result of insufficient foreign currency reserves.

In the report issued by Institute for Supply Management (ISM) released on 1st May 2020 it is announced that Production, New Orders, Employment, Backlog, Raw Materials Inventories, Exports and Imports are contracting and Supplier Deliveries

Table 4: Epidemiological indicators of the selected countries.

Country	Cases on 15th April, 2020	Total cases	Deaths on 15th April, 2020	Total deaths	Population	Mortalite (among 100,000 population)	Prevelance (among 100,000 population)	Incidence (among 100,000 population)	Death rate (Case Fatality Rate)
EU-27	18,666	724,940	2,905	69,237	445,250,522	15.55	162,82	41,92	9.6%
USA	26,922	609,516	2,408	26,057	331,002,647	7.87	184,14	81,33	4.3%
China	49	83,352	1	3,346	1,439,323,774	0.23	5,79	0,03	4.0%
Italy	2,972	162,488	604	21,069	60,461,828	34.85	268,74	49,15	13.0%
Germany	2,486	127,584	285	3,254	83,783,945	3.88	152,28	29,67	2.6%
UK	5,252	93,873	778	12,107	67,886,004	17.83	138,28	77,36	12.9%
France	5,497	103,573	762	15,729	65,273,512	24.10	158,68	84,21	15.2%
Spain	3,045	172,541	567	18,056	46,754,783	38.62	369,03	65,13	10.5%
Turkey	4,281	69,392	115	1,518	84,339,067	1.80	82,28	50,76	2.2%
World	75,465	1,952,792	7,122	126,083	7,794,798,729	1.62	25,05	9,68	6.5%

Table 5: The ratio of 65 and over people in total population.

Year	USA	China	Italy	Germany	UK	France	Spain	Turkey	EU-27	World
2020	16.6%	12.0%	23.3%	21.7%	18.7%	20.8%	20.0%	9.0%	20.8%	9.3%
2025	18.6%	14.0%	25.1%	23.5%	19.8%	22.4%	22.1%	10.6%	22.7%	10.4%
2030	20.3%	16.9%	27.9%	26.2%	21.5%	24.1%	25.0%	12.3%	24.8%	11.7%
2035	21.2%	20.7%	30.9%	28.6%	23.1%	25.7%	28.2%	14.2%	26.8%	13.0%
2040	21.6%	23.7%	33.6%	29.1%	23.9%	26.9%	31.7%	16.4%	28.5%	14.1%
2045	21.9%	24.9%	35.3%	29.5%	24.5%	27.3%	35.1%	18.6%	29.8%	15.0%
2050	22.4%	26.1%	36.0%	30.0%	25.3%	27.8%	36.8%	20.9%	30.8%	15.9%
2055	23.1%	29.0%	36.3%	30.5%	26.3%	28.3%	37.0%	22.7%	31.4%	17.1%
2060	24.1%	29.8%	36.3%	30.5%	27.0%	28.5%	36.5%	24.3%	31.6%	17.8%
2065	24.9%	30.0%	36.1%	30.6%	27.3%	28.7%	35.7%	26.0%	31.5%	18.4%
2070	25.6%	29.9%	36.2%	30.6%	27.3%	29.2%	35.0%	27.4%	31.3%	18.9%
2075	26.3%	30.1%	36.7%	30.3%	27.8%	29.9%	35.3%	28.6%	31.6%	19.5%
2080	26.6%	30.6%	37.1%	30.2%	28.4%	30.7%	35.4%	29.8%	31.8%	20.2%
2085	26.8%	31.2%	37.1%	30.5%	28.8%	31.1%	35.4%	31.0%	32.0%	20.8%
2090	27.1%	31.5%	36.8%	30.8%	29.2%	31.5%	35.4%	32.0%	32.2%	21.4%
2095	27.4%	31.7%	36.4%	31.0%	29.6%	31.9%	35.3%	32.8%	32.3%	22.0%
2100	27.8%	31.8%	36.3%	31.3%	29.9%	32.3%	35.2%	33.5%	32.5%	22.6%

Table 6: Basic health indicators in country set.

Country	Practising physicians (per 1,000 people)	Practising nurses (per 1 000 population)	Curative (acute) care beds (per 1 000 population)	Health spending share as a % of Gross Domestic Product (GDP)	Life expectancy at birth, total (years)
USA	2,61 (2017)	11,74 (2017)	2,77 (2016)	16,94 (2018)	78,54 (2018)
China	2,01 (2017)	2,7 (2017)	4,34 (2017)	5,15 (2017)	76,70 (2018)
Italy	3,99 (2018)	5,48 (2018)	3,18 (2017)	8,81 (2018)	82,95 (2018)
Germany	4,25 (2017)	12,9 (2017)	8,00 (2017)	11,23 (2018)	80,99 (2018)
UK	2,85 (2018)	7,8 (2018)	2,54 (2017)	9,77 (2018)	81,36 (2018)
France	3,17 (2018)	10,8 (2018)	5,98 (2017)	11,18 (2018)	82,53 (2018)
Spain	3,88 (2017)	5,74 (2017)	2,97 (2017)	9,86 (2018)	83,33 (2018)
Turkey	1,87 (2018)	2,07 (2017)	2,87 (2018)	4,17 (2018)	77,44 (2018)
EU-27	3,73 (2017)	8,82[1] (2017)	5,41 (2017)	9,87 (2017)[2]	80,97[2] (2018)
World	1,50 (2015)	2,54 (2018)	2,70 (2014)	9,9 (2017)	72,38 (2017)

are slowing at faster rate, Customers' Inventoriesare too low andPrices are decreasing [19].

By the COVID-19 outbreak the International Monetary Fund (IMF) revised the global economic growth forecast for the year 2020 from +3.3 percent to -percent in the report "World Economic Outlook, April 2020: The Great Lockdown". It is also predicted that Advanced Economies will be projected to contract sharply by 6.1 percent, Emerging Market and Developing Economies will be shrinked 1.05 percent, whereas growth rate for EU-27 will be 7.1 percent and for Euro Area will be 7.5 percent [20]. In the report for a moderate scenario which is assuming that the pandemic decreased in the second half of 2020 and the limiting efforts could be resolved gradually, the global economy is projected to grow 5.8 percent in 2021, as economic activity normalizes with the help of policy support.In the same scenerio as EU-27 economy will grow 4.77 percent and Euro Area economic growth will be recovered with a rate of 4.69 percent in 2021.

The statistical office of the European Union (Eurostat) announced that GDP decreased by 3.8% in the euro area and by 3.5% in the EUduring the first quarter of 2020 compared with the previous quarter and by 3.3% in the euro area and by 2.7% in the EU in the first quarter of 2020 compared with the same quarter of the previous year [21]. The IMF launched the policy tracker which includes 193 economies and summarizes the key economic responses governments are taking to limit the human and economic impact of the COVID-19 pandemic [22]. The IMF is able to lend about USD1 trillion to its member countries from quato-based resources, multilateral borrowing arrangements and bilateral borrrowing agreements. IMF can help countries address economic effects of COVID-19 in five ways;

- Emergency Financing (USD17,68 billion as 9 May, 2020),
- Catastrophe Containment and Relief Trust (CCRT) (USD229,31 millionas 9 May, 2020),
- Augmentation under existing programs,
- New financing arrangement capacity development [23].

WB has not left developing countries alone in the face of the epidemic and is taking broad and rapid steps to help countries strengthen their responses, increase disease surveillance, improve public health interventions, and continue to help the private sector to run their business and sustain employment [24].

UNDP has three urgent priorities in the fight against COVID-19:

- To access and supply of primary healthcare products under WHO leadership,
- Strengthening crisis management and fight against crisis,
- Addressing critical social and economic impacts [25].

According to the WB globalGDP is expected to decrease by 2.09% at the global level, 1.85% in Europe region in base scenerio and by 3.86% at the global level, 3.85% in Europe region in global amplified scenerio [26].

Based on different scenarios for the impact of COVID-19 on global GDP growth preliminary International Labour Organziation (ILO) estimates indicate a rise in global unemployment of 5.3 million in “low” scenario), 13 million in “middle” scenario, 24.7 million in “high” scenario from a base level of 188 million in 2019. For comparison, the global financial crisis of 2008-9 increased unemployment by 22 million [27].

International trade

COVID-19 not only causes people to lose their lives, forces the countries' health infrastructures and systems and destroys economies, but also negatively affects the foreign trade of the countries. Countries took trade related actions with COVID-19. In WTO web site the proposals which countries declared with respect to trade and trade-related measures taken in the context of the COVID-19 crisis can be seen [28].

Some countries applied high tariffs on hand soap and protective supplies used in the fight against COVID-19 [29]. WTO also announces the measures affecting trade in services taken in the context of the COVID-19 crisis in the countries [30].

The COVID-19 epidemic has resulted in global re-scaling of production and consumption, thereby causing unprecedented deterioration in the global economy and world trade [31].

During the pandemic the need for medical products has increased rapidly in the world. WTO defines medical products in four categories as; Medical equipment, Medical supplies, Medicines, Personal Protective Products.

According to the WTO medical products account for approximately 5% of total world trade (imports and exports) which is about USD2 trillion and more than half of the imports are medicines. The ten largest exporting economies accounted for almost three-quarters of total world exports of the products while the ten largest ten importing countries accounted for roughly two-thirds of world imports. It is obviosly seen that there is a concentration in medical products trade [29].

The impact of coronavirus outbreak on global trade in both goods and services will be deeper than the 2008-2009 global financial crisis. Global trade may contract between 13 percent (optimistic scenario) and 32 percent (pessimistic scenario) in 2020 compared to the previous year. The wide range of forecasts reflects uncertainties about the coronavirus crisis. The fall in the service sector trade, which started in the last quarter of 2019, seems to increase even more in 2020 with the effect of Covid-19.For the Europe export volume of merchandise goods is expected to decrease 12.2 percent for the optimistic scenario and 32.8 percent for the pessimistic scenario. For the Europe import volume of merchandise goods is expected to decrease 10.3 percent for the optimistic scenario and 28.9 percent for the pessimistic scenario. Arecovery in trade in 2021 is also expected depending on the duration of the outbreak and the effectiveness of the policy responses in the world and Europe region [32].

It is seen that import is contracted 37.3% in EU and 36.8% in Euro Area and export contracted 36.8% in EU and 37.2% in Euro Area in January-February period in 2020 comparing with the same period in 2019. Comparing January-February period in 2019 and 2020 imports decreased 5.4% in Germany, 4.82% in France, 2.8% in Italy and exports contracted 4% in Germany and 7.28% in France [16].

According to the UNCTAD as countries take strict measures to control the coronavirus pandemic, international trade and transportation systems are under great pressure. First indicators show that international trade has been hit hard due to the COVID-19 and access to goods and critical supplies is under threat.

UNCTAD declares a plan containing ten actions to help industries involved in the movement of goods free-flowing trade afloat during the COVID-19 crisis and its aftermath.

- Provide uninterrupted shipping,
- Keep ports open,
- Protect the international trade of critical goods and to facilitate customs clearance and trade,
- Facilitating cross-border transport,
- Provide the right to pass,
- Maintain transparency and up-to-date information,
- Promote paperless systems,
- Addressing early legal consequences for commercial parties,

- Protect senders and shipping service providers in the same way,
- Prioritize technical assistance [33].

WB settled a database for trade flows and policies on COVID-19 related goods. The WB categorizes the medical products as; Medicines, Medical Equipment, Anti-epidemic goods, Manufacturing of Masks, Medical Supplies, Textile raw material for masks and coveralls [34].

According to the WB exports are expected to decrease by 2.5% at the global level, 2.48% in Europe region in base scenerio and by 4.57% at the global level, 4.86% in Europe region in global amplified scenerio [26].

Foreign direct investment (FDI)

UNCTAD is monitoring the effects of the global pandemic COVID-19 on economic growth, manufacturing, external trade and foreign direct investment (FDI). The COVID-19 outbreak could cause global FDI to shrink by 5%-15%, according to an UNCTAD report published on 8 March 2020 [35].

On 26 March 2020 anupdated estimates of COVID-19's economic impact and revisions of earnings of the largest multinational enterprises (MNEs) now suggest that the downward pressure on FDI flows could range from -30% to -40% during 2020-2021 [36].

The change in FDI projection for 2020 in two different reports of the same institution in the same month is a good example in terms of showing the deep impact of COVID-19 in the economy.

According to the UNCTAD,61% of the top 100 MNEs in the world published earnings revisions, confirming that global expectations are deteriorating rapidly. And 57% of them warned the impact of global demand shock on sales and stated that COVID-19 caused problems beyond supply chain disruptions after the slowdown of production in some parts of China. In addition, the highest 5,000 MNEs, which constitute a significant share of the global FDI, reported an average of 30% downward revisions in their 2020 earnings estimate. And this trend seems to continue in 2021 [36].

Travel and tourism

According to United NationsWorld Tourism Organization (UNWTO) as of 6 April, 96% of all worldwide destinations have introduced travel restrictions in response to the pandemic.While approximately 90 destinations close their borders to tourists completely or partially, 44 countries do not allow some tourists to enter depending on their destination country [37].

With the COVID-19 outbreak, international tourism down 22% in Q1 and could decline by 60-80% over 2020. Arrivals in March dropped sharply by 57% and 67 million fewer international tourists up to March means USD80 billion lost in tourism exports [38].

An expected drop in the number of international tourists by 20-30% could turn into a decrease of USD300-450 billion in tourism receipts in 2020. This means almost one-third of the USD1.5 trillion tourism revenues in the world generated in 2019 and a growth in tourism between five and seven years will disappear becasue of COVID-19. Comapring with the 4% decrease in 2009 due to the global economic crisis and the 0.4% decrease caused by the SARS outbreak in 2003 it is shows the importance of the decrease in due with COVID-19 [37].

Besides this, International United Nations Civil Aviation Organization (ICAO) reported that the effect of COVID-19 will be an overall reduction of international passengers ranging from 44% to 80%, an estimated loss of two fifths of passenger traffic and 45% or over USD76 billionairport revenues, a 48% decline of revenue passenger kilometres (RPKs, both international and domestic) in 2020 compared to 2019 [39].

OAG released the effect of the current covid-19 epidemic on aviation capacity since the start of the year. As 4 May 2020, the number of scheduled flights is now down by 69.9% globally, 92.3% in Spain, 90.5% in Germany, 91.9 in France, 78.1% in Italy, 74.5% in USA, 32% in China compared to the same week last year. It seems China strarted to return into normal life earlier than the other countries [40].

Digitalization

Even the activities most of the sectors have been shrinking during the COVID-19, the food industry, the medical products industry and the e-commerce service industry have turned the outbreak into opportunity and increasing demand have accelerated the sales.The reason was due to social isolation, schools' closure, lockdowns and curfew, people staying at home for the pandemic. With social isolation, the internet access and mobile device usage of the people who stay at home and of the employee who works on-line instead of being on job has caused an increase in e-commerce activities, in short it has brought digitalization. Theinternet and mobile applicatioan usage and on-line shopping accelerated the purchase of digital solutions, tools and services.

However, considering that 54% of the world's population still has access to the internet, it shows that there is no equality in accessing the internet [41]. Despite the increase in global online commerce, UNCTAD helps poor countries build the policy environment, infrastructure and skills they need to adapt to the digital economy, while rapid technological change is taking place at full speed, it also helps spread the benefits of science and technology for sustainable development [42].

In the country set, it is seen that Germany, France, UK and USA are more ready for e-commerce in terms of infrastructure than Turkey, China and Italy [43].

Our analysis shows that economic, social and political life are affected negatively in many ways due to coronavirus pandemic so that life will not go on same way after the pandemic in many areas. The pandemic not only affects the old population in the countries but economy, trade and tourism as well. To fight with the pandemic, readinesss of the health system is very important.

Even the world examined coronavirus related diseases before it seems they did not learn how to be ready against a new pandemic. The COVID-19 spreads all over the world in a short time. COVID-19 not only affected the individual's daily life but also have influences on social and economic life of whole countries.

After the epidemic, it is very clear that life will not be the same as in the past. It is seen that people cannot travel as comfortably as they are used to and that they will maintain social isolation

for a while by standing against each other even theri family and relatives. In addition, there will be a big change in production and consumption habits in the economy. It seems that it will take a long time for people to regain their psychology.

Discussion

COVID-19 has emerged in the last days of 2019 in Wuhan has rapidly spread throughout the world and has become a global epidemic. WHO announced that COVID-19 can be characterized as a pandemic on March 11, 2020. Day by day the confirmed cases and deaths from COVID-19 are increasinglytremendously all over the world.And when it will end still stands as an unknown.

It is seen that economic, social and political life are affected negatively in many ways due to coronavirus pandemic. Since the spread goes on it is not posssible to measure the exact effect of the pandemic. International organizations and institutuios change their projections about the economy sice they do not know when the growth rate of confirmed cases and deaths will slowdown. Many international organizations such as IMF, the World Bank (WB), OECD, WTO… etc. issue the policy responses of the countries to fight agains COVID-19. Some countries started to annouced time schedule for lockdown exit plan to ease strict restrictions. The decison makers are announcing to the citizens that life will not go on same after the pandemic as they used to.

Since there is a lack of data due to the COVID-19 it is not easy to measure the exact effect. In the study CDC [3] reported that older adults and people who have severe underlying medical conditions like heart or lung disease or diabetes seem to be at higher risk for developing more serious complications from COVID-19 illness. And Kluge [4] indicated that older adults are at a significantly increased risk of severe disease following infection from COVID-19. This is a very important observation for the European Region: of the top 30 countries with the largest percentage of older people, all but one (Japan) are Member States in Europe. In our study we also found that in 2020 the ratio of 65 and over people in total population was 9.3% for world average, 20.8% for EU, 23.3% for Italy, 21.7% for Germany, %20.8 for France, 20% for Spain, 18.7 for UK, 16.6 for USA and 12% for China. Turkey seems to be the country with the lowest ratio. In 2100 it is predicted to be 22.6% fort he world average, 32.5% for EU, 36.3% for Italy, 31.3% for Germany, %32.3 for France, 35.2% for Spain, 29.9 for UK, 27.8 for USA, 31.8% for China and even for Turkey 33.5%. It is obviously seen that world is getting older and health sytem should be more ready against new pandemics and diseseas than before.

Although the growth rates of confirmed cases and in deaths decreased compared to the early days of the pandemic, we can not say that war against pandemic was won. While it remains unclear when the pandemic will end in countries and what the number of confirmed cases and deaths will be, it remains to be the question of whether medicines and vaccines can be found against the COVID-19 as World Economic Forum (WEF) [12] indicates in a report.

Health sytem is not unlimited in the countries so that they can care a cetainamout of ill people. Countries try to flatten the curve that shows the spread of the virus and to slow down the speed of the epidemic, to alleviate its effects on health systems and to save lives [12]. In our study we found that the countries' health infrasturcture and health human resources are different. The novel coronavirus outbreak forces the healthcare system in many countries since their capacity is limited. Social distancing measures could help health staff to deal with seriously infected persons.

If lockdown goes on it seems FDI, trade, employement, tourism receipts, budget financing will gon on contracting so that many economies will fall into recession as OECD [18], ISM [19], IMF [20,22,23], Eurostat [21], WB [24,26], UNDP [25], ILO [27], UNCTAD [35,36], UNWTO [37,38], ICAO [39], OAG [40] indicate in their reports and press releases.

Declaration

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