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PANDEMICS AND GLOBALISATION:  
PARALLEL PATHS THROUGHOUT HISTORY

*PANDEMIAS Y GLOBALIZACIÓN:  
CAMINOS PARALELOS A LO LARGO DE LA HISTORIA*

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ABSTRACT

In this work we offer a historical overview of the pandemics which have troubled humanity over the course of centuries and their economic impact. All of these pandemics share a direct relation to international trade and globalisation. Our aim is to provide a historical reference of previous pandemics and their direct connection to the phenomenon of globalisation.

*Keywords:* Pandemic, globalisation, history.

RESUMEN

En este trabajo presentamos un recorrido histórico de las pandemias que han asolado a la humanidad a lo largo de los siglos y sus efectos económicos. El núcleo que conecta a todas las crisis pandémicas guarda relación directa con el comercio y la globalización. Nuestra aportación es poner en valor la historia como referencia de otras pandemias y su conexión directa con el proceso globalizador.

*Palabras clave:* pandemia, globalización, historia.

*Clasificación JEL/ JEL Classification:* N10, N30, N70.



## 1. INTRODUCTION

The current coronavirus pandemic (COVID-19) has caused a global crisis which seems to be unprecedented; however, since the year 165 AD there have been a series of devastating pandemics which have taken millions of human lives and caused severe economic hardship and disruption.

What all of these pandemics have had in common is a network of international trade routes produced by globalisation, from the Antonine Plague (165-180 DC), contracted by Roman armies in the Middle East, to the current pandemic originating in China, currently the principal exporter in global trade.

The same mechanisms which favour the transmission of pandemics are the very same which favour the growth of international commerce. One could say that the transmission of viruses is an unfortunate externality of global trade.

## 2. SOME BIBLIOGRAPHICAL NOTES ON PANDEMICS

Within the field of the history of medicine there are a number of studies focussing on the analysis of viruses and bacteria which have plagued humanity throughout history. Of particular note are studies by Maradona (2010), who traces the history of parasitic infection from prehistory to the 19th and 20th centuries; and Wolfe, et al. (2007:279), who analyse 25 of the principal human pathogens originating in the Old World and which were hugely consequential in the conquest of America. The epidemiological model which arose with the Industrial Revolution reached its apogee with changing demographics and medicine in the 19th and 20th centuries (Rigau, 1996:560) when new pathologies appeared such as AIDS (Arrizabalaga 2000:94; Werner et al. 1999:50-51), outbreaks of pneumonia in Asia (Dye et al. 2013) and the re-emergence of ancient illnesses such as cholera and tuberculosis, among others (Werner et al. 1999:50-51; Chavers et al. 2007:7).

There are however few scientific studies dealing with pandemics and their economic repercussions, although most find a directly proportional relation between the spread of illness and the movement of goods and people. Gonzalbes and García (2007:9), in their study of the Antonine Plague, show how the expansion of the Roman Empire facilitated communications throughout the known world, from Mesopotamia to Britain, from the Black Forest to the Sahara, resulting in a globalisation of bacilli and bacteria. This

internationalisation of risks and opportunities was not a new phenomenon (Frenk, 2007:157); the first documented international epidemic took place during the Peloponnesian War, in the 5th century BC (Rosen, 2015:5-7), followed by the Plague of Justinian which devastated the Roman Empire (Porter, 2006:20-22). Le Roy (1973:629) referred to the 14th century Black Death as “microbial unification”, metaphorically relating the epidemic with the phenomenon of globalisation. In 1347, Italian merchant ships carried the Bubonic Plague from the Crimea across the Black Sea to Constantinople and on to other European ports in the Mediterranean, thus triggering the spread of the Plague through Asia Minor, the Middle East, North Africa and Europe (Benedictow, 2011: 71).

The late Middle Ages saw the resurgence of commerce as well as a proliferation of pandemics. A study by Wolfe, et al. (2007:281-282) attributed their terrific expansion from the Old World to the Americas because the native population had neither immunity nor resistance to the newly introduced diseases. Similarly, Guerra (1986:42-43) writes that the clash between the Spanish Conquistadores and indigenous peoples represented an epidemiological collision with catastrophic consequences and the principal cause of the depopulation of the Americas. Once again, we find an example of how illnesses can spread dramatically, over the course of almost a century, due to the interconnection of extensive territories.

The Industrial Revolution was a period of the most significant economic, technological and social change since the Neolithic period. It was also an era of great epidemiological transmission; the Russian Flu (Maris, 2011:30-39; García, 2017:89-92), the Hong Kong Plague (Lowson, 1897:45), the Spanish Flu (González, 2005; Correia et al. 2020:1; Barro et al. 2020). All of this scholarship inevitably leads to parallels today, as we look to the economic repercussions during and after the pandemics of the past.

The pandemics of the late 20th century spread rapidly, most notably the Asian flus (Bueno et al, 2006:19) and the Hong Kong flu, spread by American soldiers returning from Vietnam (CDC, 2019). Late in the century there appeared a new threat, AIDS (Acquired Immune Deficiency Syndrome) which spread across the world and especially in Europe coinciding with the consolidation of the European Union (Grmek, 1992:160-171).

In this work we begin with a historical review of pandemics later relating the different stages of globalisation with the most significant epidemiological episodes and finally, we will analyse the economic impact of these pandemics.

### 3. AN OVERVIEW OF PANDEMICS THROUGHOUT HISTORY

The first great known pandemic of Rome, known as the Antonine Plague, took place in 165 AD. It appears to have originated in Ethiopia, from where it spread to Asia and on to Seleucia, one of the largest cities in the world during the Roman Empire, located Mesopotamia on the banks of the Tigris River.



Up to that time the Roman population enjoyed a relatedly good quality of life. The autobiography of the Emperor Marcus Aurelius describes the situation: "In addition, there was such a heinous plague that the bodies had to be removed from the city in vehicles and wagons. It was then that the Antonines imposed strict laws on burials and sepulchres, even prohibiting that individuals build their own tombs in their villas, a disposition that remains today. The plague consumed many thousands and many of the illustrious" (Gozalbes et al., 2007:12)

Gozalbes et al. (2007) conclude that the crisis of Rome was greater than the pandemic; a crisis of subsistence and rising prices that undermined the health of the population, making them vulnerable to disease. Thus, they point to the effects of globalisation in the transmission of pandemics. The economic consequences were terrible. Economic activity was virtually paralysed by a shortage of labour. In fact, agreements were made with the enemies of Rome for them to establish themselves within the Empire as colonists and bring land back under cultivation.

The historian Barthold Georg Niebuhr (1844:197-200) in his History of Rome affirms that the reign of Marcus Aurelius (161-180) was the point of inflection point which destroyed part of the advances made in science, literature and the arts. However, the historian Edward Gibbon (1996) gives less importance to the epidemic in the crisis, highlighting political and economic factors.

Sales (2020) has perceived parallels between the COVID-19 pandemic and the Plague of Justinian which ravaged the world in 541 AD. The origin was again Africa, reaching Egypt and from there to the rest of the Mediterranean. One possible origin was Rhapta, a commercial enclave on the southeast coast of Africa, under control of the Arabs, and a source of the ivory in high demand in the Byzantine Empire to produce ornaments. The pandemic spread quickly throughout the Byzantine Empire, leaving towns and cities uninhabited. It is estimated that mortality reached 10,000 people per day (Harvard University, 1935).

The economic effects were devastating; the lack of tax revenues weakened Byzantium in the face of barbarian and Avar invasions. Multiple wars exhausted the financial resources of both the Byzantine and Persian Empires, facilitating the Arab conquests of the 6th century.

In the year 735 AD, Japan suffered what is known as Japanese Smallpox, with a mortality rate of approximately 35% of the population. The illness was again directly related to trade, in this case, with Korea. The crisis produced a mass exodus from the countryside and the abandoning of the majority of crops. To address the problem policies were implemented granting ownership of the land to those who cultivated it, tax exemptions and financial injections to fund the construction of temples (Farris, 1985:75-76)

But the pandemics most reminiscent of today is the Black Death of the 14th century, which reduced the European population by a third. The effects were

truly devastating. According to historians, the Iberian Peninsula lost between 60% and 65% of its population (Benedictow, 2011:505).

Until the 14th century, the economy had experienced notable growth, especially in Italy and Flanders. Between 1050 and 1300 the population had grown, and agricultural output was unable to meet the growing demand. Forests were cleared to bring more land under cultivation and create new settlements, and livestock farming was intensified to produce surplus goods for trade. In this way, new towns were added to commercial routes. Maritime transport increasingly facilitated commerce on a larger scale with trade routes connecting Venice and Genoa to Constantinople and the Crimea, Alexandria and Tunis to London and Brussels, etc. All of which would facilitate the spread of the epidemic (Benedictow, 2011:78).

The plague was a zoonosis, that is, an illness which passes from animals to humans. Large commercial cities became the focal points of infection and from these the epidemic rapidly spread to distant commercial and manufacturing centres via extensive land, sea and river trade and pilgrimage routes.

The European population fell from some 80 million to 30 million people. Benedictow (2011:380) synthesises and analyses historical data of each of the regions affected by the Black Death and collects several works on the pandemic written over the last forty years. Findings show that the plague not only shook the social and economic foundations of the Old World, it changed the course of human history forever.

In the early 16th century, Spanish colonisers brought Cocoliztli to America. Between 1519 and 1600, the indigenous population of Mexico dropped catastrophically from between 15 to 30 million to 2 million (Acuña et al. 2004:1). Research by scientists at the Max Planck Institute at Harvard University and the Instituto Nacional Mexicano de Antropología e Historia (Vâgene et al. 2018:524-525) identified salmonella, possibly introduced into Mexico by animals brought by the Spanish, as the pathogen responsible.

In the 17th and 18th centuries, apart from the Italian Plague (1629-1631) and the Persian Plague (1772-1773) causing three million deaths, epidemics did not strike again until the early 19th century, specifically 1817.

From the Gulf of Bengal, a cholera epidemic spread rapidly, first to Turkey and Arab states and later to the rest of the world via British trading routes. The principal cause appears to have been the rapid and disordered growth of urban areas and a deficient water supply system which failed to filter wastewater. From 1817, cholera pandemics would reappear seven more times in the 19th and 20th centuries.

At the end of the 19th century, the Russian Flu and the Plague took a terrible toll on the population and stunted economic growth in the affected countries.

On November 26th, 1889, the press reported on thousands of people taken ill in Saint Petersburg. It became known as the Russian Flu. The contagion was very rapid, spreading across Europe in only six weeks and to the rest of the world within six months (Maris, 2011:30-39). The Industrial Revolution had led

to improved transportation networks, shortening distances and allowing the disease to spread with unprecedented speed. The measures adopted by many governments to combat the contagion were similar to those imposed to deal with COVID-19: the closure of schools and universities. Hospitals were unable to cope with the number of patients and temporary field hospitals were set up in gardens and patios. Public services were severely impacted, especially tram and train service, post, telegraph and also funeral services, among many others. Industry, commerce, cafés and theatres saw a steep decline in the number of both clients and healthy employees (García, 2017:27).

In 1894, the bubonic plague reappeared in Hong Kong. The British and Chinese authorities were unable to agree on the measures to be adopted. While the British recommended ventilating homes, burning certain household utensils and to disinfect building facades with lime, Chinese doctors recommended not ventilating and natural remedies (Lowson, 1897:48-49).

The epidemic was finally brought under control, but with recurrent seasonal outbreaks in 1910 and 1911, taking the life of sixty thousand people in northeast China where the mortality rate of those infected reached 100%.

In 1918, the misnamed Spanish Flu caused more deaths in 24 weeks than AIDS in 24 years and more deaths in one year than the Black Death in 100 (González, 2005:464).

The epidemic began in the United States, although the precise origin has never been identified. The press at the time pointed to Spain as the source: "It was called the Spanish Flu because it was thought to have been brought by Spanish immigrants but in reality the epidemic originated in China and spread around the world" (Enciclopedia Barsa, 1988;8:400).

"Spain had few cases before March but as the country was neutral during the war, the Spanish press closely reported the epidemic, especially as the King Alfonso XIII fell gravely ill. It became known as the "Spanish Flu" since during the war newspapers in belligerent countries were under strict military censorship and could not report on these events except in Spain. Thus, news about the epidemic appeared only in Spanish newspapers, giving the impression that Spain was the only country affected by the epidemic" (Murillo, 2011:464).

"In 1918, world leaders, in order to halt the spread of widespread pessimism, resorted to what had served them well on no few occasions in the past: control the flow of information and reports on an illness which was spreading without control... press censorship had successfully kept this information from the public except in Spain, a neutral country, which freely published in October that the civil population of countries around the world will falling ill and quickly dying without any means to stop the contagion. Thus, people began to know of the illness as the Spanish Flu" (Murillo, 2011:464).

At that time, the response by governments was very limited. As today, the newspapers of the time announced miracle cures, even encouraging people to smoke, thinking that nicotine would kill the virus. When measures were finally adopted it was too late, explaining the high number of deaths. Finally, orders

TABLE 1. EPIDEMIC IN HISTORY

Epidemic	Year	Origin	N° deaths
Antonine Plague	165-180	Epidemic of smallpox or measles which appeared during the Roman siege of Seleucia (currently Iraq)	5 million
Plague of Justinian	541-542	Bubonic plague originating in Asia whose bacteria is very similar to that of the 14 <sup>th</sup> century plague (transmitted by rodents to humans)	25-100 Million
Japanese smallpox	735-737	Originating in the city of Dazaifu (Japan) after a Japanese fishman contracted it in Korea	1 million
Black Death	1346-1353	Originating in Kaifia (Crimea) under siege by the Mongol army where it first appeared. Genoese merchants, who maintained a colony there, fled the siege, spreading the epidemic to Europe	30% of the population europea (50 - 200 million)
Cocoliztli 1	1519-1520	Spanish expeditions and colonists infected the native population with various illnesses.	5-8 million
Cocoliztli 2	1545-1548		12-15 million
Cocoliztli 3	1576-1578		2-2.5 million
Italian Plague	1629-1631	Northern and Central Italy. Some historians believe this led to the fall of Venice as a great political-economic power in Europe.	1 million
Persian Plague	1772-1773	Originating in the Persian Gulf region, it later spread to India and Bahrain	2 million
Cholera	1817; 1829; 1852; 1863; 1881-1896; 1899-1923; 1961-1975	Between the 19th and 20th centuries there were seven outbreaks. The cholera epidemic of 1817 originated in India (Bengal). Passengers on ships with a yellow flag were not permitted to disembark in any port for 50 to 40 days.	50-100 million
Russian Flu	1889-1890	The pandemic began in Saint Petersburg and spread to Europe and the rest of the world in 4 months. It reached the USA in only 70 days after the initial outbreak.	1 million
Hong Kong Plague	1894-1903	Hong Kong; the mortality rate among the infected was 100%.	1.1 million
Cholera	1899-1923	Originating in India and extending throughout Asia and Europe until 1923.	1.5 million
Spanish Flu	1918-1920	The origin is uncertain but may have first appeared in France, USA or China	50 million
Asia Flu	1957-1958	First appeared in China and the virus spread around the world within ten months. The rapid spread was due to two factors: international flights and a mutation in the virus	2 million
Hong Kong Flu	1968-1969	The virus reached Europe carried by British travellers who had been in HK, previously a British colony. It reached the USA from soldiers returning from the war in Vietnam	1 million
SIDA	1981	Kinshasa, capital of the Democratic Republic of Congo	35 million
SARS	2002-2003	Guangdong (China). According to the National Genomics Data Centre (NCGD) of China, Covid-19 is 80% similar of the virus that caused the SARS pandemic	765
Influenza A	2009	Swine flu appeared in Veracruz (Mexico)	150.000 - 500.000
MERS	2012	The coronavirus Middle East Respiratory Syndrome (MERS-CoV) appeared in September 2012 in Saudi Arabia.	2.468
Ebola	2014	The outbreak appears to have been linked to bats. It first appeared in the Sudan and the Democratic Republic of Congo.	14.000
Coronavirus	2020	Wuhan (China)	400.049

Source: The author, drawn from data in Epidemics and Pandemics: Their Impacts on Human History (Hays J. N., 2005), WHO.





were given to disinfect public transport, factories and theatres, closing schools and universities and requiring the use of masks by public employees.

According to a study by Sandy Mackenzie and Johannes Wiegand for the International Monetary Fund (2006: 76), industrial production and business activities suffered a drop in 1918 at the height of the epidemic but later recovered quickly. The Federal Reserve Bank of St. Louis (2007:19) estimated the drop to be between 40% and 70% during the epidemic, while retail food sales fell by a third. The most affected companies were those in services sector; however, other businesses, specialised in medical products, experienced notable growth.

In 1957, at the height of the Cold War, there was a new outbreak of Asian Flu in Yunnan province, quickly spreading to Singapore, Taiwan, Japan, the United States, India, Australia and Spain, among other countries. Fortunately, the World Health Organisation (WHO) had been researching the virus for some time and had produced a vaccine. Over 34 million vaccines were distributed that year, thus accounting for the relatively low mortality rates for Asian Flu (Bueno et al., 2006:21).

The last pandemic of the 20th century took place in 1968, again with its focal point in Hong Kong, hence the name: the Hong Kong Flu. The contagion spread to the United States, brought by American soldiers returning from Vietnam; the mortality rate of the pandemic was high compared to Europe. Caused by the Influenza A virus, the pandemic caused one million deaths worldwide and approximately 100,000 in the United States (CDC, 2019).

#### 4. THE PARADOX OF ECONOMIC GLOBALISATION

Globalisation can be understood as the growing interdependence of states, cultures and societies. Although globalisation has become a social and cultural phenomenon, it is in reality principally an economic process, characterised by the integration of different national economies. In fact, the International Monetary Fund (IMF) speaks of globalisation as “a growing economic interdependence of countries all over the world caused by the increasing volume and variety of overseas transactions of goods and services, international capital flows and the accelerated and generalised expansion of technology” (Stiglitz, 2003:216).

There is no consensus among social researchers on what the phases of globalisation are, or even when the process began. Some theories (Bernstein, 2010; McNeill and McNeill, 2010) mark the beginning of globalisation with the birth of early civilizations; others claim that the globalising process began with the first overseas colonial empires (Christian, 2007; Robertson, 1990; Robertson, 2005). The third theory places the globalising start during the I Industrial Revolution (Langhorne, 2001; Frieden, 2013). The last position considers that globalisation began after the IIGM (Castells, 2000; Conversi, 2010).

It would appear that globalisation is a new phenomenon, exclusive to the 21st century. However, if we understand the concept of globalisation as the greater interconnection between regions and economies, we can identify a process of four phases stretching from the Roman Empire to our current capitalist system (Carmona, 2015:24).

The First Globalisation dates from the Roman empire, which built roads, bridges and aqueducts, establishing a single legal system and currency. “The Romans had the instinct and the intention to extend their dominion over the entire inhabited world. This was a true globalising intent.” (Le Goff, 1982:53-58).

During this first globalised phase, the Antonine Plague and the Plague of Justinian, supposed a change in the economic fortunes of the Roman Empire. Until then the Romans enjoyed a healthy, prosperous economy but the high mortality rate led to a loss of economic resources which directly impacted the production of goods and services with the social and economic deterioration of the population.

During the Second Globalisation, the age of discovery and the colonialism, when three epidemics of Cocoliztli and the Italian Plague took place. Spanish Conquistadores brought to America illnesses which were unknown in the New World. The devastating mortality rates among the indigenous population no doubt facilitated the conquest of the vast territories.

By 1771, at the dawn of the I Industrial Revolution, the Third Globalisation was under way, to be consolidated over the course of the 19th century. Liberalism supplanted mercantilism and democratic systems of government began to take hold. Both economic liberalism and political democracy both arose at the end of the 18th century, particularly in 1776, the year Adam Smith published “The Wealth of Nations” and of the Declaration of Independence in Philadelphia, laying the foundations of political liberties. This Third Globalisation was characterised by, firstly, the liberalisation of commerce thanks to the repeal of the “Corn Laws” in England and the signing of a free trade agreement between England and France in 1860; secondly, european imperialism in Africa and Asia created new currents of international trade, capital transfer and human migration. This process of globalisation would facilitate the spread of Plague, Cholera and the Russian Flu epidemics. Cholera first appeared in the Ganges River basin, in India, where the illness was endemic, spreading along trade routes to Russian in 1830. A few years later it would appear in Western Europe where insalubrious urban conditions, especially the absence of effective sewerage systems, would allow the epidemic to spread. In 1889, some 1,500 kilometres of the Central Asian Railway, also known as the “Trans-Caspian Railway” were completed, connecting the city of Bokhara with Russia and so to the rest of the world (Smith, 1995:60).

The Third Globalisation was interrupted by the First World War and the subsequent economic crises of the 1920’s. The Spanish Flu of 1918 paralysed the world, striking with particular virulence at the young, thus reducing the labour force available for work in agriculture and industry.

Successive stages of globalisation led to a consolidation of the interconnection of countries, facilitating both trade and the transmission of viruses. The Fourth Globalisation, after the Second World War, saw great efforts to establish international financial and commercial institutions, including the IMF, the World Bank and the expansion of free trade (General Agreement on Tariffs and Trade, GATT).

With the fall of the Berlin Wall in 1989 and the collapse of the Soviet Union in 1991, the process of globalisation accelerated, culminating in the creation of the World Trade Organisation (WTO) in 1995. In this context, a series of pandemics such as the Avian flu, HIV, SARS, Influenza A, MERS and Ebola, afflicted the entire world, undermining human and economic development.

It is interesting here to note the affirmation of Yale University Professor of the History of Medicine, Frank Snowden (2019:6): "Epidemic diseases are not random events that afflict societies capriciously and without warning. On the contrary, every society produces its own specific vulnerabilities. To study them is to understand that society's structure, its standard of living, and its political priorities." As we see, pandemics are not only an issue of human health and public health care systems but have significant socio-economic impact, affecting strategies of political economy with national and international implications.

In the area of international economics it is well known that trade creates interdependence, producing externalities which can be both positive and negative. Hence the need to establish coordination mechanisms to internalise negative externalities of economic interdependence (Díaz-Roldán and Perote, 2015: 4-5). In the case of the COVID-19 pandemic, "the engine of growth" has gone into reverse: China halts production due to the epidemic originating in Wuhan and impacts commercial partners practically all around the world. Given that all economies are now interdependent, if a country enters a crisis its level of imports will fall, and commercial associates will also reduce their purchasing from the affected country (China). This will cause a contraction of exports, a fall in GDP and difficulties to import goods; a vicious circle of impoverishment leading to a contraction of the global economy. The OECD (2020) notes that one of the most significant problems has been the origin of the epidemic itself since China is a key player in the services and raw materials sector, causing rapid and direct contagion to the rest of the global economy.

Just as cooperation and coordination mechanisms between countries are essential for international trade, addressing the economic and social impact of the COVID-19 pandemic requires international policy coordination to ensure the effectiveness of measures taken around the world. The OECD (April 2020) noted some areas for coordination, such as the international data collection on the profile of the virus, the affected population, means and routes of transmission and remedies for the design emergency protocols to be adopted; processes of regulatory alignment and mutual recognition in order to accelerate administrative procedures (accepting product certifications of other jurisdictions, for example) and, finally, to limit regulatory barriers to the trade

of essential products: personal protection equipment, medical devices and new diagnostic tests and treatments.

The secretary general of the OECD Angel Gurría (OECD, 2020), in the G20 summit on COVID-19, proposed a global Marshall Plan to address the impact of the pandemic and to prepare citizens for future crises. The proposals were specifically focussed on recapitalising public healthcare and epidemiological systems; to activate all macroeconomic levers: monetary, fiscal and structural policies; lift existing commercial restrictions, especially applying to medical supplies; support poor and developing nations; share and apply best practices to support workers and all people, employed and unemployed, especially the most vulnerable; provide assistance to companies, especially small and medium enterprises (SMEs); and establish support packages for the most affected sectors.

The challenge will be how to face a prolonged emergency since, among others, problems of liquidity can quickly become solvency problems, undermining the ability of certain business sectors to survive (Serrano, 2020:113).

## 5. FROM PANDEMICS TO ECONOMIC CRISES

In the previous sections we have seen the manner in which pandemics, epidemics that spread beyond the border of the country where they initially occur, follow the same international trade and travel routes. The loss of population, healthcare costs and the fall in production in some sectors produces an economic recession which, over time, leads to an economic crisis. In order for this to occur, there must be a high mortality rate, enough to cause a drastic reduction in the workforce; a collapse in public healthcare systems leading to runaway deficits; the lack of effective containment mechanisms (medication, vaccines); that the contagion extends over time, ultimately requiring the confinement of the population causing economic paralysis.

In the COVID-19 crisis public healthcare systems have been overwhelmed and the confinement of the population has resulted in a brusque halt in productive activity. However, some studies of other pandemics show that early, restrictive, non-medical measures can slow the rate of contagion and mortality and can even have positive economic effects in the medium term. The study by Correia et al. (2020:2-5) analyses the effect of the 1918 Spanish Flu on the US economy; the findings suggest that pandemics can have high economic costs, but if non-medical measures are applied in time and in a manner that reduces mortality they can mitigate the adverse economic impact of the pandemic; ultimately, the study shows that one year later, regions which experienced the highest grow were those which implemented the strictest confinement measures and thus had lower mortality rates.

Barro and Ursúa (2008:256-259) conducted a study on the macroeconomic impact in times of disaster (when there is an accumulated drop in one or several years of 10% or more in the per capita GDP or real

per capita consumption) since the year 1870. They reach the conclusion that the principal global economic crises, by impact were: the Second World War, the First World War and the Great Depression (possibly reflecting the flu of 1918), and events subsequent to the Second World War such as the Latin American debt crisis and the Asian crisis. They found 87 crises in consumption and 148 for GDP, which implies that the probabilities of a disaster to be 3.6% per year. The scope of disasters averaged 21-22% with an average duration of 3.5 years. Comparisons between drops in consumption and in GDP largely coincide. However, the average fractional fall in consumption exceeds that of GDP during wartime but is similar during crises other than war (for examples crises resulting from a pandemic).

A recent study by Barro et. al., (2020), recalling the findings of previous studies, point to a possible relation between the Spanish Flu of 1918 and COVID-19 in terms of high mortality rates (although evidently medical advances have taken place) and economic contraction. The influenza epidemic of the early 20<sup>th</sup> century resulted in substantial short-term reductions in the yields on shares and government bonds, as well as falls in GDP comparable to the current situation.

The IMF (April 2006:74) examined the possible impact of an avian flu epidemic on supply and demand, including external demand and calculated that, if 25% of the workforce becomes ill or is confined for six weeks, with a mortality rate of 0.6% of the workforce, aggregate labour inputs will fall by approximately 13% during the quarter and some 3% for the year; the sharpest drop since the Second World War (1939-1945). According to the Cobb-Douglas production function, with a coefficient of 0.6% for labour inputs, the fall in GDP would be approximately 8% for the quarter and 2% annually (IMF, 2006:74).

Obviously, the effects on countries are never homogeneous. As a result of COVID-19, according to IMF (October 2020: 9-11)) global growth will be -4.4% in 2020 and reach 5.2% in 2021. China will be the only global economy with positive growth by 2020 (1.9%) 8.2% in 2021. For the United States, the MFI forecasts a contraction of -4.3% in 2020 and growth of 3.1% by 2021. For the euro area the contraction in growth will be -8.3% in 2020 and will show growth of 5.2% by 2021. However, the report points to significant differences between European countries. While for Germany it expects a contraction of -6% for the Spanish economy augurs a fall of -12.8%, France (-9.8%) Italy (-10.6%) 2020.

In the specific case of Spain, García Delgado (2020) points out three aspects as main responsible for: the composition of the productive fabric, the high proportion of freelancers and micro-enterprises and the mismatches in the labour market.

Deloitte (2020) highlights three direct impacts on the global economy: (i) the impact on production. The deceleration of production in China has led to a reduction in imports, significantly affecting its principal suppliers, South Korea and Japan; (ii) the impact on the supply chain. Many companies rely

on raw and intermediate materials imported from China, which are difficult to substitute in the short term, and (iii) financial impact. Risk aversion tends to contract financial markets. The delays in deliveries has slowed production creating financial difficulties for companies carrying high levels of debt.

Experts at the IMF (October 2020,7) believe that the economic consequences depend on factors which are difficult to predict: the evolution of the pandemic, the effectiveness of containment measures, the development of cures or vaccines, the scope of changes in economic activity, changes in consumer spending habits, changes in behaviour, confidence and, finally, the volatility of the price of basic goods.

Despite the above, not all pandemics result in economic crises. Walter Scheidel (2020), historian at Stanford University, points to the 14<sup>th</sup> century Plague as one of the four great levellers in history. That pandemic caused a labour shortage which altered power relations between landowners and labourers. Similarly, European reconstruction after the First and Second World Wars, which left nations and economies devastated, led to the greatest wealth levelling process in Western history between 1945 and the 1970's. A trend that would go into reverse in the following four decades. Nevertheless, the majority of pandemics have historically had devastating economic consequences and the hope is we can learn to prepare for, prevent and effectively deal with future pandemics.

## 6. CONCLUSIONS

Throughout this work we have provided a historic overview of the principal pandemics and how globalisation has favoured their propagation across the world.

Among these are the common origin of many pandemics is China, from the Antonine Plague (165 AD) to COVID-19. In the absence of scientific or epidemiological studies, the reasons for this are twofold: firstly, China has always been a vast commercial centre since Antiquity, and secondly, animal markets have always been part of the culture. Most studies point to the spread of viruses and bacteria from animals to humans as the principal cause of epidemics.

Additionally, despite the benefits of globalisation one of its negative externalities is the rapid transmission of epidemics, leading to global pandemics. Improved and extensive transportation networks have, throughout history, facilitated the rapid propagation of contagious diseases.

In addition to the cost in human lives and the strain on public healthcare systems, pandemics also have devastating economic and social impact, although in some cases the crises caused by pandemics have served to level economic differences. This is a problem that affects all countries and measures to deal with and prevent future pandemics must be necessarily be undertaken collectively.

Once again history repeats itself; let us take this opportunity to learn from it.

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