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**"THE SHORT-RUN AND LONG-RUN CONSEQUENCES OF THE
COVID-19 PANDEMIC IN ITALY AND FRANCE"**

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Preface

I am currently a student in my third undergraduate year of Bachelor, undertaking a double degree in Economia at the Università degli studi di Padova in Italy. These three years of Bachelor have allowed me to define my future interest and direction. In the first year, I became committed to pursuing my studies in finance. It is for that reason that I undertook my first internship at the Head Office of the Group Casino within the Accountants department, followed by a second internship at Crédit Agricole, which allowed me to engage with a wide variety of financial sector activities. I undertook my second year with a major in finance, and I continue with the same major in this third year.

I am now planning my next stage and wish to continue my studies at Master's level in order to become a Chartered Accountant. My future intention is to take the DECF (Diploma of Accounting and Finance), and then the Diploma of Chartered Accountancy.

I wrote this thesis to the Università degli studi di Padova to be graduated. I decided to work around the scientific area of environmental economics and policy. During the second semester, I studied this topic with the professor Cesare Dosi and I really enjoyed it. I focus my research on this subject. I decided after to work about the consequences of the Covid-19 pandemic because it is a hot topic and I was very impacted by this crisis. I had to go back to France and to stop my Erasmus. We do not perceive the situation with the benefit of hindsight, but I really wanted to work about this new and interesting subject.



Acknowledgements

I really want to thank you all the persons who help me during the redaction of my thesis.

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Abstract in Italian

Il Covid-19, virus che ha causato una pandemia globale, ha colpito in maniera drastica i paesi, non solo riguardanti la malattia e il numero dei morti. Quali sono, allora, le vere conseguenze a breve e lungo termine di questa pandemia in Francia e in Italia ? La nostra ricerca mira a determinare gli impatti che questa epidemia ha avuto e avrà in modo diretto e indiretto, sia durante la pandemia che per i mesi e gli anni a venire.

In un primo momento, discuteremo degli impatti a breve termine sui cittadini, sulla società e sugli ospedali che, da una parte, hanno dovuto affrontare la saturazione dei posti letto disponibili, soprattutto in terapia intensiva, e, dall'altra parte, la necessità di aumentare gli investimenti per far fronte all'emergenza. La necessaria scelta di chiusura totale ha avuto effetti consistenti sull'economia e ora i paesi cercano di programmare e attuare una ripresa economica per contrastare la diminuzione del loro PIL. Il lockdown oltre agli effetti catastrofici per l'economia ha portato, però, dei benefici all'ambiente, attraverso una diminuzione dell'inquinamento, che ha mostrato la necessità di intervenire anche sulla sostenibilità ambientale.

In un secondo momento, cercheremo di stabilire le potenziali conseguenze a lungo termine del Covid-19 per determinare quali potrebbero essere gli effetti sulla popolazione, l'economia, l'ambiente e la società. Per questa analisi, ci siamo basati sull'esperienza di precedenti pandemie come la peste nera, l'influenza spagnola o la SARS.



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Introduction

Covid-19 is the name given by the World Health Organization (WHO) to the new virus appearing at the end of 2019 in Wuhan City in China. Like Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), two coronavirus diseases, the infection caused by Covid-19 is potentially fatal¹. On January 23rd, three days after the public speech of the Chinese President Xi Jinping, the city of Wuhan was quarantined. Other cities are followed. But it was already too late, and the virus is spreading rapidly in the country and on four of the five continents. It is a worldwide propagation. The WHO declared an international public health emergency on January 30th.² There is no specific treatment or vaccine, but scientists around the world are working on it.

The global authorities have set up drastic measures to slow down the pandemic. Many countries have closed their borders and declared states of emergency. Some countries required partial or total lockdown. In total, 3.4 billion persons were confined in nearly 80 countries and were not expected to leave their homes (43% of the world's population).³ Moreover, many industries were at a complete standstill. The impacts of the disease go beyond mortality. The economic, social, and environmental consequences are likely to be very important. As such, governments around the world are preparing contingency plans to sustain their economies. At the same time, the environment seemed to be enjoying this break. So, what is the real impact of this health crisis? It is what we will see in this thesis.

The thesis's researches are focused on the Europe and more precisely in both countries: France and Italy. These both countries are very important in Europe for their economy but also, unfortunately, for their huge number of Covid-19 cases. France and Italy are the most infected countries in Europe with Spain and Germany.

In this work, we deal with of **what are the short-run and long-run consequences of the Covid-19 pandemic in Italy and France.**

We will discuss in a first part about the short-run consequences in both countries with the direct and indirect consequences. In a second part, we will talk about the alleged and potential long-run consequences.

¹ French gouvernement, 10/05/2020. *Comprendre le Covid-19*. Website.

² World Health Organization, 30/01/2020. *International Health Regulations Emergency Committee on novel coronavirus in China*. Website.

³ Le Monde, 29/03/2020. *Le coronavirus dans le monde : l'Europe et les Etats-Unis, épicentres durables de la pandémie*. Website.

I - The short-run consequences of the Covid-19 pandemic

1) Direct consequences of the crisis in France and Italy

a) The Covid-19: a sanitary crisis

The Covid-19 is a sanitary crisis. The first consequences of this pandemic are the disease and the mortality. This virus is very contagious. Covid-19 can be manifested by fever, cough, headaches, aches, unusual fatigue, sudden loss of smell, total loss of taste and in more serious forms, respiratory difficulties that can lead to hospitalization or even death. The French president Emmanuel Macron during the speech of the March 16th, 2020 said: “We are at war, in a sanitary war, we are not fighting against an army or against another nation. But the enemy is there, invisible, elusive, advancing. And that requires our general mobilization.”⁴ At the June 30th, globally, the total number of cases was 10,302,052, the number of cures was 4,560,734 and the number of deaths was 505,505.⁵

This disease appeared in Europe at the beginning of 2020. The first contaminated country was the France. The first case appeared on January 24th, 2020. The Italy followed with the first case on January 31st, 2020. The 18 May, the Italy was the 5th most affected country in the world in number of cases. Regarding the number of deaths recorded, it is the third most affected country. In Italy, 225,435 confirmed cases were counted the 18 May 2020, so it was 675 additional cases compared to 17 May 2020. This represents 387.84 cases per 100,000 population, while the numbers for China and France are 6.28 and 266.24 cases, respectively. The 18 May, 31,108 deaths caused by the Covid-19 disease have been reported in Italy. This represented 145 new deaths compared to May 17, 2020.⁶ The most contaminated region in Italy was Lombardy.

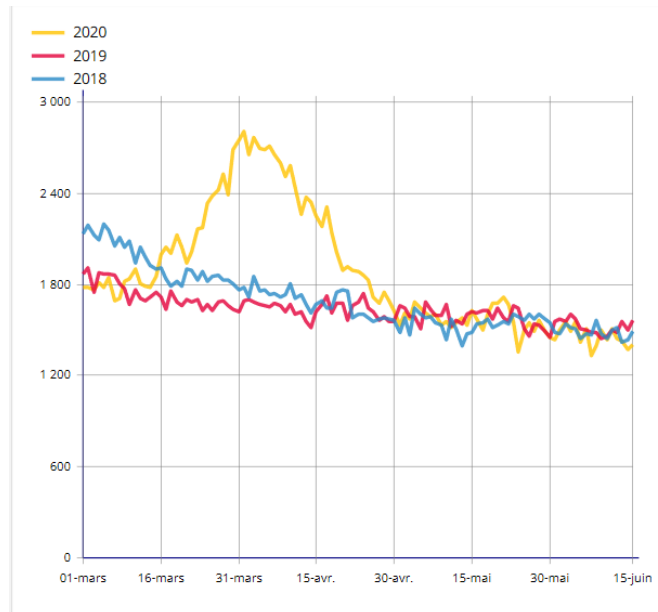
With a few days of "delay" on Italy, cases of coronavirus in France continued to increase. The organisation INSEE (Institut National de la Statistique et des Études Économiques) uploaded a graphic which show the evolution of the number of deaths in France in 2018, 2019 and 2020.

⁴ Elysée, 16/03/2020. *Adresse aux Français, 16 mars 2020*. Website.

⁵ J. Baruch, P. Breteau, G. Dagorn, M. Ferrer, A. Dahyot, L. Sanchez, update every day. *Coronavirus : visualisez l'évolution de l'épidémie en France et dans le monde*. Le Monde. Website.

⁶ Center for Systems Science and Engineering (CSSE), update every day. COVID-19. Johns Hopkins University. Website.

Number of deaths per day from March 1st to June 15th, 2020 by INSEE⁷



At the French level, the number of total deaths recorded between 1 March and 20 April 2020 was higher than the number recorded the same periods in 2018 or 2019. The number of deaths in France was 27% higher than at the same time in 2019 and 16% higher than in 2018.

Thanks to the data on the French government, we can see the evolution of the propagation. Data on the May 1st: 131 863 cases, 25 201 deaths, 25 548 hospitalisations, 51 371 people had been able to return at home after hospitalisation, 3 696 in reanimation and 15 826 deaths in hospitals.

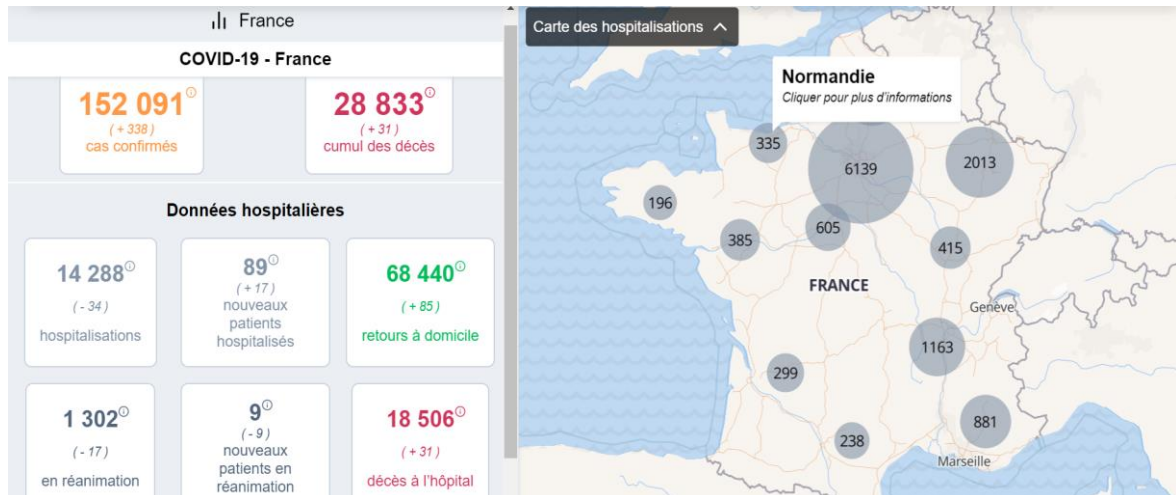
Covid-19 data of May 1st, 2020 by French government



⁷ INSEE, 26/06/2020. *Nombre de décès quotidiens*. Website.

Data on the June 1st: 152 091 cases, 28 833 deaths, 14 288 hospitalisations, 89 hospitalisations, 68 440 people had been able to return at home, 1302 are in reanimation, 9 new people in reanimation and 18506 death in hospitals.⁸

Covid-19 data of June 1st, 2020 by French government



As you can see, the propagation has really decreased. There were still a lot of cases in the capital. The number of cases and people death was more important in Italy. The country was very contaminated rapidly and it was the first. So, they had just China as example. The France was contaminated rapidly but with 15 days of delay so, the French people knew what to do or not. They could take example on Italy.

In France, the health authorities adopted a screening strategy. In a first time, the government reserved the tests for the most vulnerable people. After, they are able to test anyone who has symptoms of Covid-19 and those around him who could have been infected. To do this, 700,000 virological diagnostic tests are performed each week (compared to 175,000 previously).⁹

Concerning the age of the disease people, the mean age of those who died was 81 years old. More than two-thirds of these patients had diabetes, cardiovascular diseases, cancer, or were former smokers. The graphics are from the newspaper Le Monde.¹⁰ In the first, we can see the repartition of deaths between age and gender in France and in the second, in Italy.

⁸ Gouvernement, 01/06/2020. *Covid-19 – France*. Website.

⁹ Gouvernement, 10/05/2020. *Tests et dépistage*. Website

¹⁰ J. Baruch, P. Breteau, G. Dagorn, M. Ferrer, A. Dahyot, L. Sanchez, update every day. *Coronavirus : visualisez l'évolution de l'épidémie en France et dans le monde*. Graphics. Le Monde.

Final Thesis

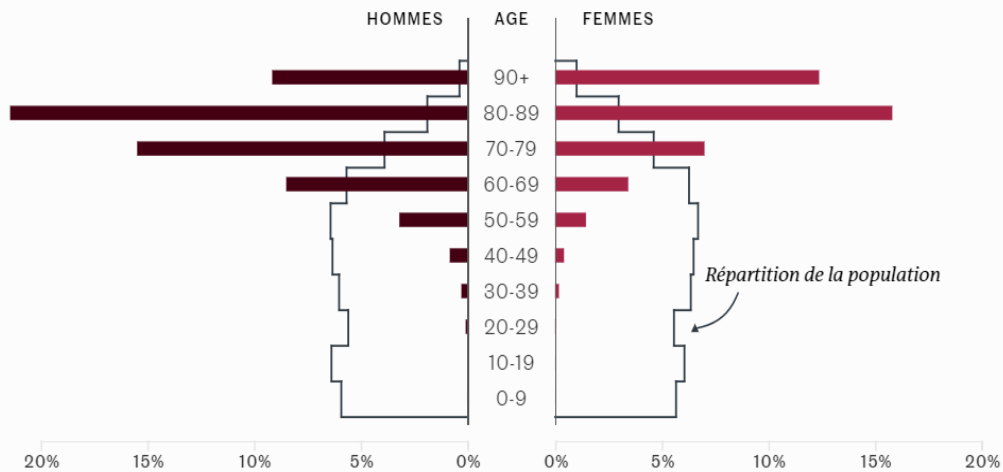
Distribution of deaths in French hospitals by Le Monde

By age and gender, data updated on June 1st

(Men on the left and women on the right)

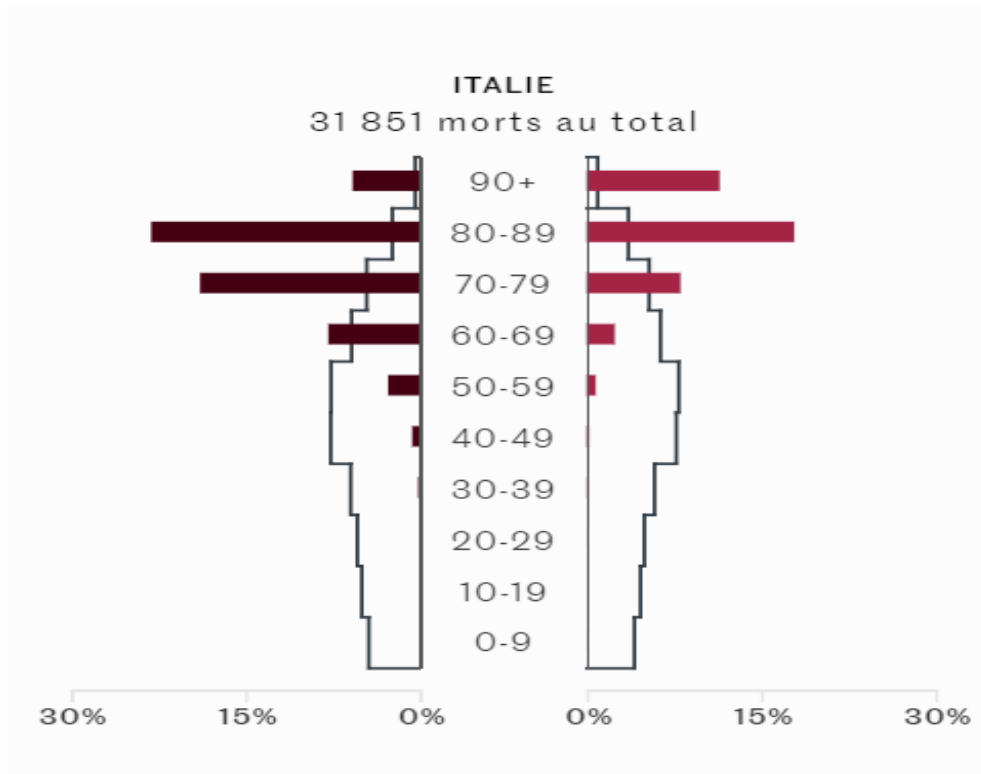
Répartition des décès dans les hôpitaux français

par âge et par sexe, données provisoires mises à jour le 1 juin



Distribution of deaths in Italian hospitals by Le Monde

By age and gender, data updated on June 1st



b) Medical expenditures and hospital saturation

Due to the spread of the covid-19 pandemic, the health system and the hospital were overwhelmed with work. In France and in Italy, health care workers were witnesses of a saturation of the hospital services and of a lack of equipment. They were exhausted due to the influx of patients. This crisis is a sad reminder of the crucial role of health and public services.

Thanks to the emergency measures, China reduced the number of contaminated people by more than 90%. But this reduction is not the case everywhere. Italy was really affected by the pandemic. There was grave concern regarding the Italian national health system. The number of people infected in Italy followed an exponential trend. Intensive care units were at maximum capacity in April. In Italy, we have approximately 5200 beds in intensive care units and 5400 in France.¹¹ There was not enough bed for everyone. The both governments did not react quickly enough and did not invest enough money in the health care and hospital.

Moreover, “not all regions and institutions were affected in the same way, but the virus caused very high expenditure levels” said Cécile Chevance, head of finance division in FHF (Fédération hospitalière de France) on March 28th April. For the first two months of the epidemic, there was an estimated extra cost of between 600 and 900 million euros. This is due to the investments needed for equipping the beds, for purchasing protective equipment, for paying the extra hours of hospital’s workers, and for the tests. In addition, there is a loss of revenue related to the deprogramming of interventions and the decrease in patients' frequentation for diseases other than covid-19.¹²

On March 15th, the European Commission announced the limitation of non-European exports of masks and other medical protective equipment.¹³ There were subject to authorisation. But the sudden increase in demand led to a shortage of surgical masks, hydro-alcoholic solutions and medical equipment in some hospitals and pharmacies during the crisis. In March, in France, masks were no available in pharmacies and surgical masks were rare. The shortages of hydro-alcoholic solutions were emerging. The March 6th, the health Minister Olivier Véran authorized pharmacies to produce their own hydroalcoholic

¹¹ Prof. Andrea Remuzzi, Prof. Guiseppe Remuzzi, 17/04/2020. *COVID-19 and Italy: what next?*. The Lancet. Volume 395, Issue 10231, Pages 1225-1228. Research paper.

¹² Franceinfo, 28/04/2020. *Coronavirus : le surcoût pour les hôpitaux publics est estimé à ce stade entre 600 et 900 millions d'euros*. Website.

¹³ Libération, 15/03/2020. *L'Union européenne va limiter les exportations de masques vers l'extérieur*. Website

solution.¹⁴ In many countries there were a lack of respirators, China sent 1,000 artificial respirators to Italy in March.¹⁵ Finally, to try to prevent a possible shortage of drugs in France, the government announced on March 17th, the limitation of the sale of paracetamol by pharmacists. It was one box per healthy patient and two boxes maximum for those with symptoms of pain or fever.¹⁶

2) Indirect consequences of the crisis in France and Italy

a) Strict measures: The lockdown

To limit the propagation, the government decided to adopt strict rules. The more important was the lockdown. The population did not have the right to go out, to see their friend, their family or to work. They must stay at home. Only the people with indispensable job could continue to work (doctors, firefighter, policemen...). Only travel necessary for working, for health care or for buying food were allowed. All public or private gatherings were prohibited. If the population did not respect the rules, they could have penalty.

The first lockdown in Europe was the Italy. It was ordered on 9 March 2020 by the Italian government, during a televised intervention of the President Giuseppe Conte. “The decision adopted by the government is to close all productive activity across the territory that is not strictly necessary, crucial, indispensable to guarantee goods and services”, declared Giuseppe Conte.¹⁷ The measure, imposed on the entire country, aimed to restrict population movements. This followed a similar quarantine imposed the day before for Lombardy and fourteen provinces of Piedmont, Veneto, Emilia-Romagna, and Marche, as well as eleven municipalities in the province of Lodi already confined since the end of February. The main point was to minimise the likelihood that people who are not infected meet people who are infected. Few days later, the decision of a lockdown at the national level was announced the evening of Monday 16 March 2020 by the French President, Emmanuel Macron. During the speech, he announced: “Kindergartens, schools, colleges, high schools, universities have been closed since that day. On Saturday evening, the

¹⁴ ParisMatch, 06/03/2020. *Coronavirus : Le gel hydroalcoolique pourra être fabriqué en pharmacie, son prix fixé par l'Etat.* Website

¹⁵ Franceinfo, 12/03/2020. *Coronavirus : aux abois, l'Italie va être aidée par la Chine.* Website.

¹⁶ PourquoiDocteur, 17/03/2020. *Paracétamol : une seule boîte par personne dans les pharmacies.* Website.

¹⁷ Governo Italiano, 09/03/2020. *Conferenza stampa del Presidente Conte a Palazzo Chigi.* Website.



restaurants, all the non-essential shops to the life of the Nation also closed their doors. Gatherings of more than 100 people were banned.”¹⁸

It was a national but also international lockdown. The Europe decided to close the borders with non-EU countries. At this day, the 12 June, the borders with non-EU countries are still closed. The lockdown for every country was an emergent situation. The countries were not prepared to this situation. The world did not have experiences. It was very complicated for the governments to manage and run their countries. For the population, it was tough to renounce to the liberty. They did not know if it was efficient to do that. The lockdown almost was the same in France and in Italy. The both governments intervened to increase the use of telework in regions considered at risk. In France, to foster the normal execution of the work activity, it was permitted to activate the telework even in the absence of the workers' agreement.

The communication was essential during this period. In France, there was some confusions between the ministers' information. In a first time, they said that the masks were not necessary, after it was compulsory. The population was a bit lost. The April 28th, a step-by-step plan began in France for the deconfinement. The official end of the lockdown was the May 4th for Italy and the May 11th for France.

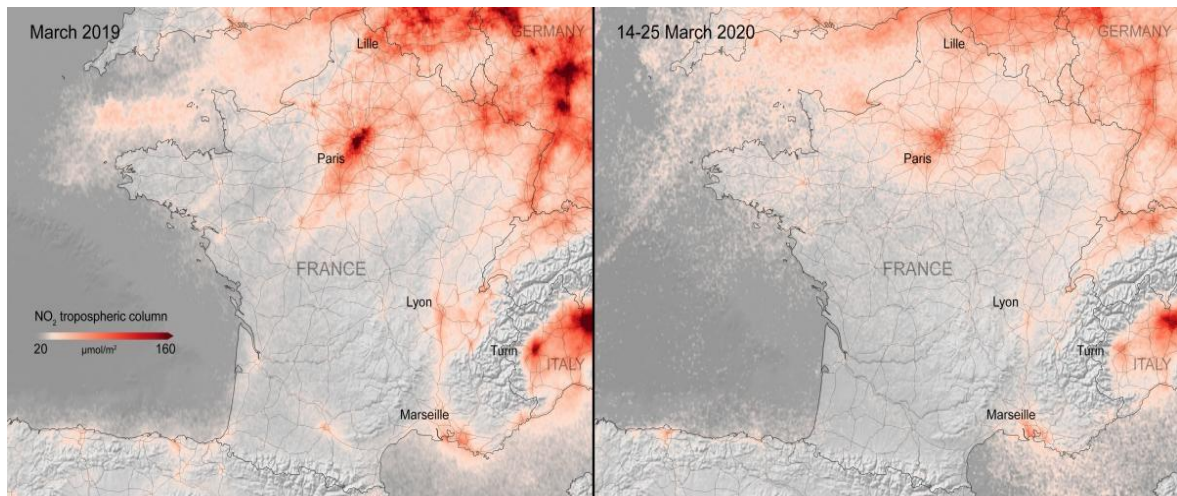
b) A break for the environment

From an economic point of view, this crisis was a nightmare but for the environment it was a blessing. The first consequence of the lockdown was the reduction of the Co2 emissions. The Copernicus Sentinel-5P satellite (European Earth Monitoring Programme) were able to observe the effects of the quarantine in France and Italy. The results of their observations are striking. The air pollution fell sharply. This reduction in pollution was the result of the sudden stop of the industries caused by the quarantine of workers. It was also due to the rapid decline in land, sea, and air transport. The data for France and Italy are from Copernicus issued by the European Space Agency.¹⁹

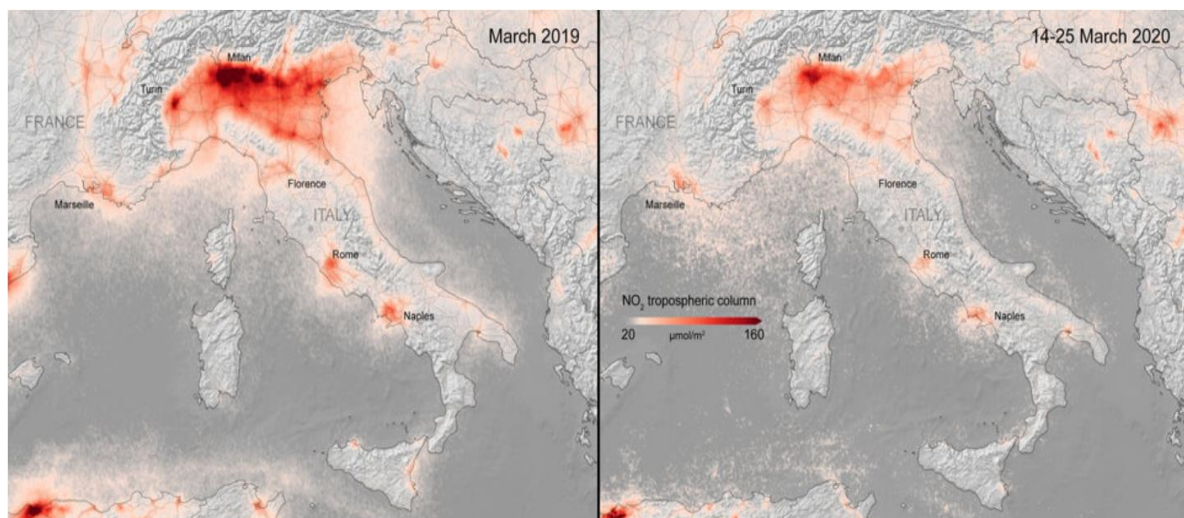
¹⁸ Elysée, 16/03/2020. *Adresse aux Français, 16 mars 2020*. Website.

¹⁹ The European Space Agency, 27/03/2020. *Coronavirus lockdown leading to drop in pollution across Europe*. Website.

Graphic of the Co2 emissions in France in March 2019 and March 2020 by Copernicus Sentinel-5P satellite



Graphic of the Co2 emissions in Italy in March 2019 and March 2020 by Copernicus Sentinel-5P satellite



On social networks, many urban citizens confined to their apartment were delighted to be able to hear the birds. In Venice, the waters became so clear that the inhabitants could see the bottom of the canals.²⁰

The French President of Greenpeace, Jean François Julliard, did an interesting speech about the environment consequences of this crisis.²¹ Co2 emissions decreased in several

²⁰ LeParisien, 22/03/2020. *Coronavirus : faute de touristes, les eaux de Venise redeviennent transparentes.* Video

²¹ Jean-François Julliard, 31/03/2020. *Crise du coronavirus : quels impacts sur l'environnement ?*. Greenpeace. Youtube video

countries. It was good news but for the moment, not for the long-term. This decline came after years of increase. The last five years were the warmest years on record. To decrease the emission for the long term, the governments must change and become more greener but, in this situation, it was not their first concern.

Unfortunately, there were negative consequences too. The nitrogen dioxide concentration decreased but no reduction on fine particles, the most dangerous for health.²² The epidemic had also disrupted environmental diplomacy efforts. The Cop26 (Glasgow Climate Change Conference) of 2020 was postponed because it would not be fair negotiation if some countries are missing.²³ The decrease of the economy could slow investment in green energy technologies.²⁴ In France, given the impossibility of consulting the public, a ministerial derogation allowed farmers to benefit from a relaxation of the current rules on the application of pesticides near homes.²⁵ The manifestations for the environment stopped, some peoples continued to campaign on the networks like Greta Thunberg. There was a significant drop in recycling in France, it was not the priority for residents. Masks and gloves do not recycle. The scientists are afraid of a return very violent for the environment because the governments will give priority to their economy. Finally, the farmers were impacted too, they are forced to throw away whole crops. Some actions were taken. For instance, in France, for strawberries, large retailers must buy French and not Spanish. Prices were still low for farmers, but it was better than nothing.

c) Economic recovery: a necessity?

With more than 10 million people around the world affected by COVID-19, the governments were adopting a wide range of measures to respond to the public health emergency and its economic impact. In June, the OECD estimated a loss of 6% of global Gross Domestic Product (GDP) and a loss of 9% of GDP in Euro zone in 2020.²⁶ The

²² Marina BERTSCH, 06/04/2020. *Pandémie de coronavirus : quels effets sur l'environnement?*. Video Elément Terre.

²³ Climate Home News, 01/04/2020. *Cop26 climate talks postponed to 2021 amid coronavirus pandemic*. Website.

²⁴ Newburger Emma, 25/03/2020. *Coronavirus could weaken climate change action and hit clean energy investment, researchers warn*. CNBC.

²⁵ Chauvin Hortense, 09/04/2020. *Consultations publiques suspendues : le Gouvernement déroge aux distances d'épandage de pesticides*. Actu-environnement.

²⁶ OECD, 08/06/2020. *Sur la voie de la reprise, l'économie mondiale est sur une ligne de crête, selon l'OCDE*. Website.

economic impact was different within countries, some was harder hit than others. The consequences of this pandemic for the world economy are very serious.

In Italy, the situation forced the government to take important restrictive measures. Damage to the economy in the short term was estimated at between 9 and 27 billion euros. Italian GDP fell by 5,3%.²⁷ On March 1st, the Italian government signed a decree of €3.6 billion in favour of the economy to deal with the emergence of coronavirus.²⁸ The Italian economy suffered a very strong backlash, its economic activity declined immediately. The economic consequences depend on the evolution of the epidemic and this explains the uncertainty for the future of the economy. The world fears a second wave of Covid-19 pandemic. The unstable situation obviously affects international trade. With quarantines and exceptional closures, Italian companies reduced their production and their output. There is an increase in unemployment and a decrease in hiring during this period.

This pandemic also impacted the tourism. Italy is the second most visited country by Chinese tourists after France. In 2018, there were around 3 million arrivals and a turnover of around 700 million euros. They expect a reduction of 30% in Chinese tourism in 2020 which result in direct damage of more than 200 million euros. The most affected regions will be Lazio, Tuscany, Veneto, and Lombardy, which intercept more than 80% of the Chinese tourists.²⁹

During the first trimester, the French Gross Domestic Product (GDP) decreased of 5.8%. It is the largest decline in the quarterly series since 1949. The French GDP fell more than in other countries because the lockdown was very strict compared to other countries like Germany for example. The activity decreased by 32% in March and 27% in April, according to the latest activity data from INSEE.³⁰ The April 29th, Bruno Le Maire, French minister of economy and finance, said : «We must be clear about the fact that once the shock has been absorbed», there is a risk of «multiplication of bankruptcies» of companies, of «severe» impact employment, and loss of export markets from France.³¹ Thanks to the data from INSEE, in March 2020, we constated that sales of supermarkets increased by 1.8%. It grew strongly in the sale of food products by 10.9%. It is in connection with the

²⁷ Bertrand Boucey, 29/05/2020. *La récession économique en Italie plus forte que prévu..* Les Echos Investir. Website

²⁸ Lepetitjournal Milan, 02/03/2020. *Italie : 3,6 milliards d'euros débloqués pour soutenir l'économie.* Website

²⁹ Edoardo Secchi, 02/03/2020. *Le coronavirus frappe l'économie de l'Italie de plein fouet et menace celle de l'Europe et du monde.* Le HuffPost. Website.

³⁰ INSEE, 30/04/2020. *Comptes nationaux trimestriels.* Website.

³¹ Poirier Damien, 30/04/2020. *Le Maire appelle "un maximum de Français" à retravailler le 11 mai.* Ma Commune. Website.

precautionary behaviours related to the health crisis and containment measures. Household consumption expenditure on goods fell by 17.9%. This decrease was linked to the containment measures. Exports fell by 6.5%. The imports also fell but slightly less. It decreases by 5.9%. In March 2020, the total number of business start-ups of all types of enterprises was down sharply by 25.5%. The draft recovery plan for the EU announced by France and Germany the 18 May is good news. The Commission plan is to incur €500 billion in debt and transfer this money to the States, regions and sectors that have been most damaged by the coronavirus pandemic.³²

There are two ways to support an economy in a crisis: lower interest rates (which depends on the European Central Bank) and relaunch the budget (which is the responsibility of the States). The recovery is often select when the state faces to a deep economic recession or a crisis. Theorized and popularized by the British economist, John Maynard Keynes, in the early 20th century, this policy is characterized by important government intervention with massive investments to stimulate economic activity and fight unemployment. It was particularly popular after the Second World War and the financial crisis of 2008. Nevertheless, the stimulus theory is criticised because it favours deficits and public debt, so it increases the risk of later high inflation.³³

However, the EU countries cannot do massive investments as they want. They should respect the Maastricht Treaty. The Maastricht criteria are criteria, based on economic indicators, which must be respected by the Member States of the European Union which are candidates for entry into the euro zone. These criteria were established in the Maastricht Treaty, signed by the members of the European Union on 7 February 1992. The four criteria are defined in Article 121 of the Treaty establishing the European Community. They impose the control of inflation, public debt and the public deficit, the stability of the exchange rate and the convergence of interest rates. The inflation rate of a given Member State must not exceed by more than 1.5 percentage points that of the three best performing Member States in terms of price stability. It is forbidden to have an annual government deficit greater than 3 % of GDP and a public debt greater than 60 % of GDP. The countries must not devalue its currency. Finally, the long-term interest rates must not exceed by more than 2 % those of the three best performing Member States in terms of price stability.³⁴

³² Malingre Virginie, 18/05/2020. La France et l'Allemagne proposent un plan de relance européen de 500 milliards d'euros. Le Monde. Website.

³³ Wikipédia, 11/04/2020. *Politique de relance*. Website.

³⁴ INSEE, 13/10/2016. *Critères de convergence (traité de Maastricht)*. Website.

The Italian government prepared an emergency plan with the agreement of the European Union. It enables to increase its deficit. The situation in Italy was serious enough for the European Union to set aside its budgetary rigour as we saw in the article of Beniamino Morante in the newspaper *Courrier International*. “Flexibility clauses in the event of exceptional circumstances are already provided for in the Growth and Stability Pact,” said Paolo Gentiloni, the EU Commissioner for Economic Affairs, on 26 February 2020. It was interpreted as a green light for Brussels to important measures. The Italian economic Minister Roberto Gualtieri announced a series of measures to support the economy. He decided to spend €3.6 billion, which represents 0.3% of the Italian GDP. Robert Gualtieri said that it was certain that “Italy would get the necessary flexibility from the Commission.” No one should lose their job because of the coronavirus.

All businesses that experienced a drop in turnover more than 25% could have tax reductions, tax credit and measures for unemployment. This aid was in addition to the 900 million euros that the government has already released for the inhabitants of the 11 cities quarantined in the north of the country. Thus, the right-wing Italian newspaper *Il Giornale* reports, “Matteo Salvini considers the resources announced by the executive insufficient”. The former Minister of the Interior declared that: “3.6 billion is not at all okay: to seriously help businesses and families in difficulty because of the epidemic, we would need 20 billion immediately. And if Europe said no, it would be an unacceptable outrage”. However, this proposition is more difficult for Brussels to accept, given Italy’s debt ratio. In 2019, it reached 134% of GDP, the second highest debt in the eurozone.³⁵

Fiscal stimulus means worsening public deficits. Let us take the case of Italy: the release of 3.6 billion euros in the 2020 budget to deal with Covid-19 represents an increase in the Italian deficit of 0.3% of the wealth produced by the country over the year. It is 0.3% more than the 2.2% initially planned.³⁶

To support the economy, jobs and businesses, the French Government has put in place an emergency support plan of 110 billion euros. 26 billion euros are allocated to protect employment: to finance short-time work. To support companies in difficulty, 300 billion euros of bank loans are guaranteed by the State. They establish a Solidarity Fund of €7 billion to support smaller businesses and to safeguard industry, businesses, and jobs. The State

³⁵ Beniamino Morante, 02/03/2020. *Budget Coronavirus : l’Italie dégage des mesures exceptionnelles pour soutenir son économie*. *Courrier International*. Website.

³⁶ Emmanuel Cugny, 06/03/2020. *Covid-19 : augmenter la dépense publique pour limiter la casse économique ?*. *Franceinfo*. Website.



offered the possibility of deferring the social contributions payable to the URSSAF (Unions de Recouvrement des cotisations de Sécurité Sociale et d'Allocations Familiales - Unions for payment of social security and family benefit payments) or in the most difficult situations, a remission of direct taxes. For start-ups, they put in place an emergency support plan of nearly €4 billion euros. Moreover, the government has a special support for the sectors mainly affected by the crisis which are the tourism, the automobile, the aeronautics and the start-up.³⁷

d) Impacts of the Covid-19 pandemic on global energy markets, electricity demand, and energy investment

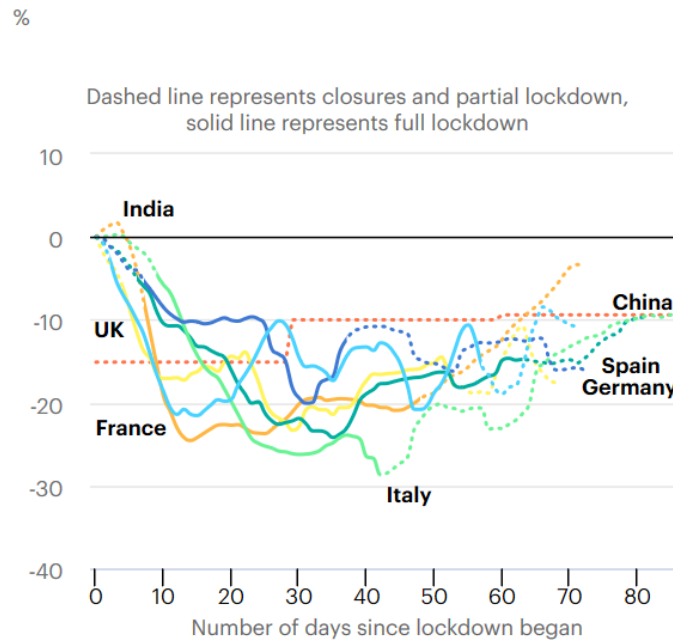
The energy sector is severely affected by this Covid-19 pandemic. It slowed down trade, transport, and economic activity all around the world. Thanks to the analysis of IEA (International Energy Agency)³⁸, we constated that the countries in full lockdown had an average decrease of 25% in energy demand per week and countries in partial lockdown an average decrease of 18%.

During the crisis, there were a big decline in demand for mobility. Because of global lockdown measures, road transport in regions with lockdowns in place dropped between 50% and 75% compared to 2019. Lockdowns have also decreased the electricity demand. Full lockdown measures pushed down electricity demand by 20%, with smaller effects for partial lockdowns. The demand in electricity decreased more in Italy than in France. The graphics are from the International Energy Agency.

³⁷ Gouvernement, 25/06/2020. Relancer le pays. Website.

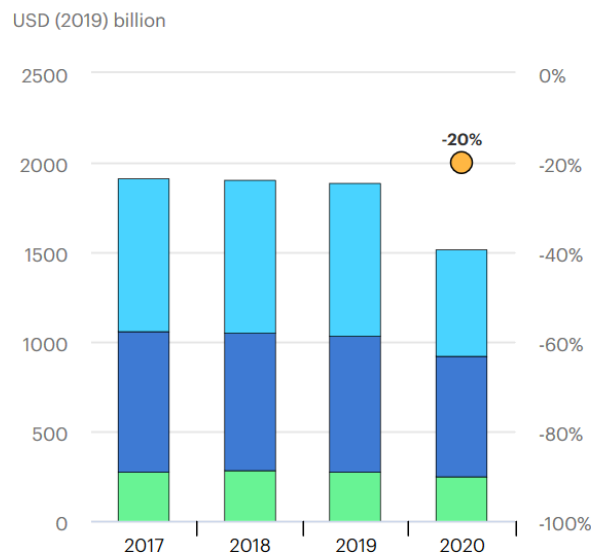
³⁸ IAE, 01/04/2020. COVID-19.

Reduction of electricity demand after implementing lockdown measures in selected countries 0 to 86 days by IAE.



Energy investment fall also in 2020. It is due to lockdowns which interrupt the movement of people, goods and the supply of machinery.

Total global energy investment from 2017 to 2020 by IAE



A question could be asked during this crisis: the Covid-19 is an accelerator or a stopper of decarbonisation? This pandemic had an impact on the gas and oil markets. Before the crisis, European gas markets were already in a situation of oversupply. But this pandemic was not improving the situation. The gas market price decreased because of the stop of the productive activities, transport, and the important economic recession. So, after the lockdown, the consumption of gas had an exponential increase. The EU Emissions Trading Scheme was affected by this Covid-19 pandemic too, the Co2 price has decreased. So, the consumption will increase. To conclude with IEA's warning: "This situation is a test of governments and companies' commitment to clean energy transition [...] They have a historic opportunity today to steer those investments onto a more sustainable path".³⁹

e) Stop of the associations and humanitarian aid associations and growth of social distancing

Beyond disease and confinement, society has been greatly affected by the Covid-19 crisis in various ways.

The pandemic created panic movements that pushed the population to buy in very large quantities in supermarket. Shortages of pasta, rice and toilet paper are observed in several countries. However, there were no major shortages during the Covid-19 pandemic in France and Italy. The agri-food sectors could continue to produce. Bruno Le Maire, the French Minister of Economy, assured: «The security of supply of food and necessities is guaranteed in the days and weeks to come».⁴⁰ The States called for the rationality and solidarity of citizens.

The sport was also significantly impacted. All sports associations had to close the time of confinement. Many sports competitions are suspended or cancelled due to the pandemic. In basketball, the NBA and the French and Italian championships are suspended, as well as all European competitions like Euroleague and Champions League. Many cultural events are suppressed or postponed. The last two days of the Carnival of Venice are cancelled.⁴¹ The Chinese New Year parade in Paris are also suppressed.⁴² The activities of humanitarian and social associations have been limited. The homeless have received less assistance and support. In France, the second round of municipal elections was postponed

³⁹ Ilaria Conti, 11/05/2020. *Covid-19: an accelerator or a stopper of decarbonisation?*. FSR. Website.

⁴⁰ Casalegno Elsa, 19/03/2020. *Coronavirus Pas de pénurie alimentaire à craindre*. Quechoisir. Website.

⁴¹ Le Temps, 23/02/2020. *Italie : onze villes en quarantaine, le Carnaval de Venise annulé*. Website.

⁴² 20 Minutes, 26/02/2020. *Coronavirus : Le défilé du Nouvel an chinois annulé à Paris*. Website.



following the pandemic.⁴³ In Italy, the constitutional referendum planned on March 29th, 2020 has been postponed at a later date.⁴⁴

Moreover, the epidemic context could be a source of stress. Isolation at home could have significant psychological effects. Isolation affected many people. The lockdown had disrupted their daily, social, professional, and family life. Sometimes, it could cause anxiety disorders, panic fear or depression. Desocialization during weeks could lead to an increase in social distancing. At the end of March, the number of domestic violence reports in France increased by 30%. To cope with this increase, the French Secretary of State for Gender Equality, Marlene Schiappa, reported, on March 29th, the launch of a “campaign to publicize the platform called stoptheviolence.gouv.fr on which twenty-four hours a day, seven days a week, you have trained policemen and gendarmes who take reports, launching investigations and interventions into domestic violence.”⁴⁵

However, confinement had also some good points and had sometimes increased mutual aid and cohesion between people. In Italy, in the evening, some people played music on their balcony. In France, every evening at 8 p.m., the people applauded at their windows to congratulate the nursing staff. Sports coaches went downstairs to teach people from their balcony. Confinement also allowed parents to spend more time with their children. But also, parents realized the difficulty of making school at home. This confinement had the merit to restore the profession of teacher.

⁴³ Collectivités Locales, 20/04/2020. *Elections municipales : report du second tour*. Website.

⁴⁴ Wikipédia, 11/05/2020. *Référendum constitutionnel italien de 2020*. Website.

⁴⁵ Le Monde, 30/03/2020. *Hausse des violences conjugales pendant le confinement*. Website.

II - The alleged and potential long-run consequences of the Covid-19 pandemic

It is still too soon to perfectly determine what the long-run consequences of this crisis will be. The aim of this research is to help to better understand the changes in France and in Italy that are going to happen because of the Covid-19 pandemic.

1) Direct consequences of the crisis in France and Italy

a) Health impacts: Experiences of SARS and MERS.

The number of people infected with Covid-19 has greatly reduced in recent weeks. The hospitals are no longer saturated, and many people were able to get out of intensive care unit and go home. However, some patients who have suffered from Covid-19 still have effects over several weeks or up to months. With the testimony of people cured of coronavirus, we can constatae that there are many sequelae: persistent fatigue, burning in the lungs, dry cough, cardiovascular damage, and neurological symptoms like headache. The scientists still do not have the necessary distance to define if the virus could weaken the body forever. A significant amount of scientific research by the UK's National Health Service or Chinese researchers shows that the sequelae of Covid-19 are still largely underestimated and unknown.⁴⁶

In April 2020, Ahmed H., Patel K., Greenwood D. et al., a team from the Universities of Manchester and Leeds published a meta-analysis on the long-term sequelae of SARS (Severe Acute Respiratory Syndrome) and MERS (Middle East Respiratory coronavirus Syndrome).⁴⁷ They observed patients for 6 months or more after healing. They constated that the Covid-19 sequelae are similar to two other coronavirus respiratory infections: SARS and MERS. The SARS is an infectious lung disease due to a coronavirus which first appeared in China in November 2002. It caused an epidemic from May 2003 in 29 countries, infected more than 8,000 people and killed at least 774. The disease was present until May 2004. The MERS is the name of a highly pathogenic coronavirus variant discovered in 2012 in the

⁴⁶ Stéphane Korsia-Meffre, 16/06/2020. *COVID-19 : quelles séquelles à long terme ? L'expérience du SRAS et du MERS.*

⁴⁷ Ahmed H, Patel K, Greenwood D et al., 2020. *Long-term clinical outcomes in survivors of coronavirus outbreaks after hospitalisation or ICU admission: a systematic review and meta-analysis of follow-up studies.* Research paper.

Middle East Orient, causing a symptom of acute pneumonia and respiratory syndrome. Since then, 1,219 cases have been diagnosed, resulting in 449 deaths.

In the research paper of Ahmed H., Patel K., Greenwood D. et al, they constated that these experiences from the past infections could provide an overall view of what could happen with Covid-19. One year after a contamination of SARS or MERS, about a quarter of the patients were still suffering from a decrease in their lung capacity. In addition, a year later, physical limitations were observed and 17% of people had still not resumed their work at the same level as before the disease. After SARS, psychological sequelae were common, even after several months. There was post-traumatic stress disorder in 39% of patients, depression in 33% and anxiety in 30%. The quality of life was impacted also. Six months after infection, a significant decrease in quality of life was observed in physical capabilities, emotional abilities, and social life. Fatigue and pain were present in about one third of people with SARS, for up to 40 months. These past experiences show that the patients who have benefited from lung rehabilitation had a better recovery.

2) Indirect consequences of the crisis in France and Italy

a) Environmental consequences: the Covid-19 is a ‘time bomb’ for the climate?

In a short term, the pandemic consequences on the environment was mostly positive. But the reduction in Co2 emissions was just during the lockdown and does not solve anything in the long term. It only happened because the human and industry activities are forced to stop. For decades, the overall trend has been to increase greenhouse gas emissions to develop the production and the economy. The European Union policies like the pollution permits allow to reduce a bit the emissions but it is not sufficiently efficient.

In France like in Italy, there will be a risk that emissions increase after this crisis. The population can fear a rebound in CO2 emissions if the stimulus plan aims to regain growth at any price and does not take account about environment. François Gemenne, a French researcher at the University of Liège expressed his concerns in an article published in the Belgian daily newspaper, Le Soir, by calling the Covid-19 a «time bomb for the climate». He said: “First of all, greenhouse gas emissions always tend to rebound after a crisis. We already see it in China, where industrial activity has already resumed, as we saw after the economic crisis of 2008-2009”. He is also afraid that many industries “would prefer to give

a lifeline to the fossil industry instead of a Green New Deal”.⁴⁸ In 2008, the measures taken around the world to curb the financial crisis benefited mainly to the wealthiest and polluting industries. Although the context and nature of the crisis are very different in 2020, the government cannot afford to repeat the same mistakes. To decrease the emission of Co2, the government should set up a recovery plans which give priority to citizens, their health, well-being, environment, and climate, and not to polluting industries. The postponement of major international events such as COP26 gets worse the situation. The major international decisions about climate change will be delayed.

The main goal of a lot association like Greenpeace is that the environmental emergency become a priority.⁴⁹ The Covid-19 shows that it is possible to adapt the economic model to deal with an emergency, whether sanitary or climate. Billions are injected into the economy and it is used principally to finance the companies that pollute the most. For instance, the Air France group has just received aid from the French State for a total amount of 7 billion euros to overcome the crisis.⁵⁰ France’s medium-term recovery plans are focused on the fossil sectors.

This crisis could be the beginning of a new era. If the population want to move the situation, it is time to invest in the ecological transition by creating jobs for the future and to impose obligations on large companies to reduce their greenhouse gas emissions. This coronavirus crisis shows that it is possible to drastically intervene in the economy. “Big changes seem impossible in the beginning and inevitable in the end,” said Greenpeace founder Bob Hunter.

Under the “Green Deal”, 17 European Ministers (Austria, Denmark, Finland, Italy, Latvia, Luxembourg, the Netherlands, Portugal, Spain, Sweden, France, Germany, Greece, Slovakia, Ireland, Slovenia and Malta) signed a text for an economic environmental recovery post Covid-19. The Commission will present a plan for its 2030 targets by September 2020. The objective will be a reduction of 50% to 55% in greenhouse gas emissions compared to 1990 levels.⁵¹ This European plan aims to further develop investments in sustainable

⁴⁸ François Gemenne, 28/03/2020. *Pourquoi la crise du coronavirus est une bombe à retardement pour le climat*. Le Soir. Geographic Department, University of Liège. Website.

⁴⁹ Greenpeace, 24/03/2020. Covid-19, climat et environnement. Website.

⁵⁰ Nadine Levratto, Gilles Raveaud, 05/05/2020. *Coronavirus : 7 milliards d’euros pour Air France, sans contrepartie environnementale ou sociale, voilà qui pose question*. Le Monde. Website.

⁵¹ Climate Home News, 09/04/2020. *European Green Deal must be central to a resilient recovery after Covid-19*. Website.

mobility, renewable energy, building restoration, research and innovation, and the circular economy.⁵²

b) The potential economic consequences of the Covid-19 crisis: Experiences from the past.

The Covid-19 pandemic had, at first, short-run consequences on economic activity in France and in Italy. The majority of workers could not work. The production sites were closed. For these reasons, the still active production sites had lack of intermediate goods. Therefore, they are forced to slow down the pace of their production. Since each company tended to reduce its production, it reduced its orders into intermediate goods. The people are forced to reduce their social interactions, which force them to reduce their consumption. The increase in the unemployment rate were without precedent.

However, this pandemic also has long-run effects on the economy. Richard E. Baldwin, a professor of international economics, constated that the uncertainty about the exact effects on the economy slows down investment, which reduces demand and encourages people to do precautionary savings. Governments are adopting stimulus plans to support activity. But, by stimulating demand in a contained supply environment, it could in the medium term create shortages and inflationary pressures.⁵³ Stimulus plans are likely to have negative effects too, but it does not mean that the authorities should not try to help their economy. In particular, efforts must be made to prevent companies from going bankrupt and unemployment rising. The most important is to prevent a collapse of the banking system and a financial crisis due to the increase in defaults on payments. Lessons from past events can be useful to understand how the future usually unfolds.

To predict the consequences, many analyses tried to use the last European pandemic: the Spanish flu. Unfortunately, work to determine the economic impact is difficult because the Spanish flu epidemic appeared just after the First World War, so that it is tough to distinguish the impact of the epidemic from that of the conflict.

Other economic studies have focused on an older pandemic: The Black Death in the fourteenth century.⁵⁴ The economist and economic historian Temin Peter worked on this

⁵² 20 minutes, 10/04/2020. *Coronavirus : Dix ministres européens de l'Environnement appellent à une relance post-Covid « verte »*. Website.

⁵³ Baldwin Richard, 2020. *The supply side matters: Guns versus butter, COVID-style*. Research paper.

⁵⁴ Temin Peter, 2014. *The Black Death and industrialisation: Lessons for today's South*. Research paper.

subject. This epidemic decimated one third of the European population in three years and more than half in the next century. It considerably impacted the economy, but there are not only negative points. The labour shortage had several positive effects: it has increased the bargaining power of workers. The wages strongly increased. In England, the epidemic reduced the supply of work from 25% to 40% and increased by 100% the real wages. Clark Gregory, an economic historian, set out these positive points in two research paper published in 2007 (*The long march of history: Farm wages, population, and economic growth, England 1209–1869*)⁵⁵ and 2010 (*The macroeconomic aggregates for England, 1209–2008*).⁵⁶ Labour shortages also encouraged businesses to innovate. In particular, they stimulated technological innovation in the agricultural sector. Moreover, it led to an improvement of the role of women in the society. Women were more invited to enter in the working life. They had the right to delay their marriage and become more independent. In addition, the Black Death epidemic increased the per capita endowments of land and capital for the survivors.

In a new study called *Longer-run Economic Consequences of Pandemics* published in 2020, Oscar Jordà, Sanjay R. Singh and Alan M. Taylor focused their research on previous pandemics and how they affected economic activities to long-term.⁵⁷ To do this, they studied rates of return on assets using a database dating back to the fourteenth century. In this case, they are based on data compiled by Paul Schmelzing in 2020⁵⁸, which includes Germany, Spain, France, Italy, the Netherlands, and the United Kingdom. They used fifteen large pandemics from XIV to XXI centuries:

⁵⁵ Clark Gregory, 2007. *The long march of history: Farm wages, population, and economic growth, England 1209–1869*. The Economic History Review, vol. 60, n° 1.

⁵⁶ Clark Gregory, 2010. *The macroeconomic aggregates for England, 1209–2008*. Research in Economic History, vol. 27.

⁵⁷ O. Jordà, S. R. Singh, A. M. Taylor, 01/03/2020. *Longer-run Economic Consequences of Pandemics*. Federal reserve bank of San Francisco - working paper series: 1 – 15. Research paper.

⁵⁸ Schmelzing, 2020. *Eight centuries of global real interest rates, R–G, and the ‘suprasecular’ decline, 1311–2018*. Bank of England Staff Working Paper 845. Research paper.

Table of the fifteen large pandemic events with at least 100,000 deaths

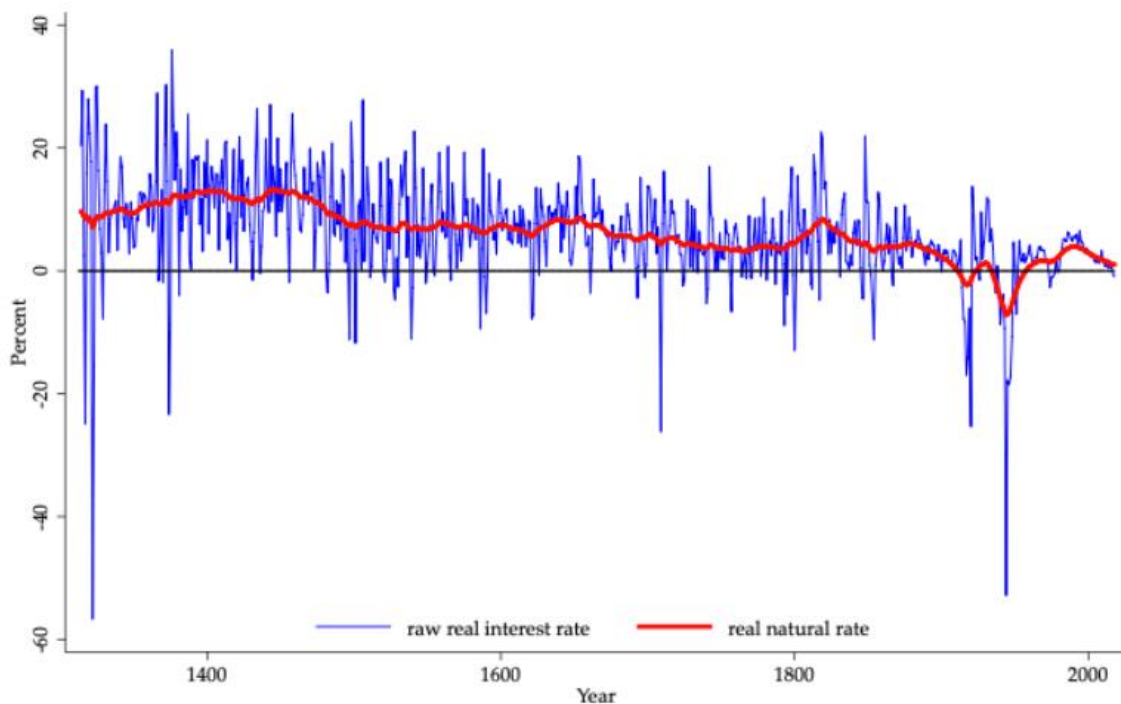
<i>Pandemics</i>	<i>Start</i>	<i>End</i>	<i>Nb. of deaths</i>
<i>Black Death</i>	1347	1352	75,000,000
<i>Italian Plague</i>	1623	1632	280,000
<i>Great Plague of Sevilla</i>	1647	1652	2,000,000
<i>Great Plague of London</i>	1665	1666	100,000
<i>Great Plague of Marseille</i>	1720	1722	100,000
<i>First Asia Europe Cholera Pandemic</i>	1816	1826	100,000
<i>Second Asia Europe Cholera Pandemic</i>	1829	1851	100,000
<i>Russia Cholera Pandemic</i>	1852	1860	1,000,000
<i>Global Flu Pandemic</i>	1889	1890	1,000,000
<i>Sixth Cholera Pandemic</i>	1899	1923	800,000
<i>Encephalitis Lethargica Pandemic</i>	1915	1926	1,500,000
<i>Spanish Flu</i>	1918	1920	50,000,000
<i>Asian Flu</i>	1957	1958	2,000,000
<i>Hong Kong Flu</i>	1968	1969	1,000,000
<i>H1N1 Pandemic</i>	2009	2009	203,000

Each of these fifteen pandemics had at least 100 000 deaths. With the research of Schmelzing in 2020 about the yields of long-term sovereign debt since the 14th century, they were able to estimate the natural rate of interest from 14th to 21st century including the fifteen major pandemics. The natural rate of interest is an important policy variable and economic barometer. It is a concept used by economists to describe the level of the real interest rate that keeps inflation stable. It was first described by the Swedish economist Knut Wicksell in 1898 in his book *Interest and Prices*.⁵⁹ Inflation decreases when output is below its potential level, the natural interest rate keeps output at its potential level. The real interest rate refers to the effective interest rate less the expected inflation rate. For example, if the populations save more, the supply of savings increases. When the growth decreases, the investments become less attractive. In both cases, the natural rate declines to restore equilibrium.

⁵⁹ Wikipédia, 25/04/2020. *Knut Wicksell*. Website.

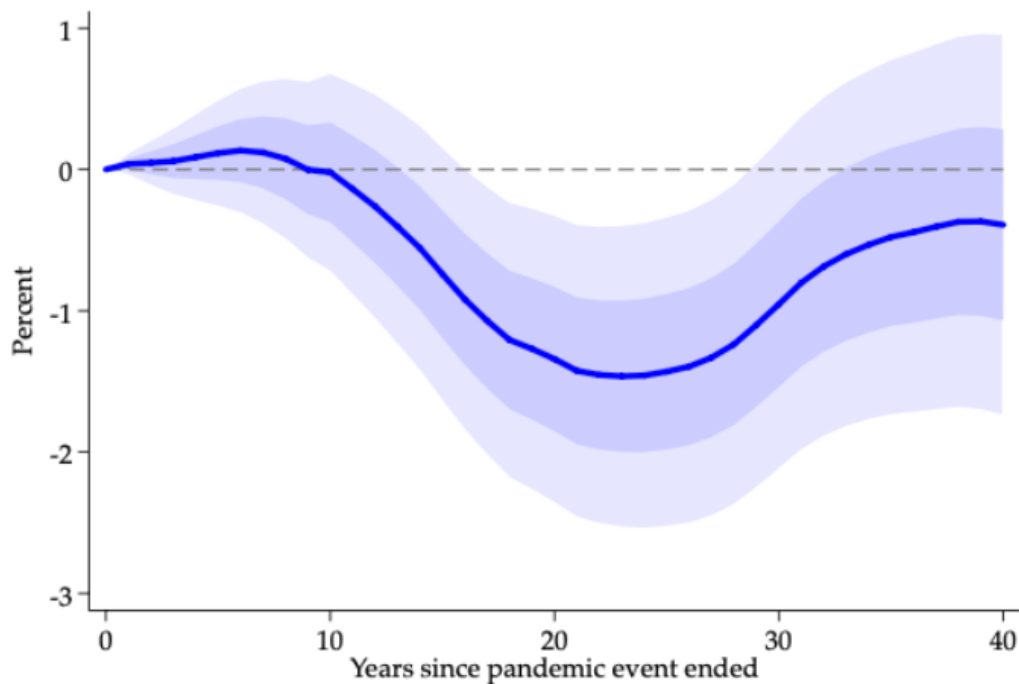
In the figure below, we observe the raw real interest rate and the real natural rate from 1315 to 2018. We constated that the natural rate declined for centuries. From this database, Jordà, Singh and Taylor reconstructed the gross interest rate for all these GDP-weighted economies and then sought to estimate the natural interest rate.

Figure 1: The European real natural rate of interest, 1315-2018 by Oscar Jordà, Sanjay R. Singh and Alan M. Taylor



In the Figure 2, we see the impact of a pandemic on the natural rate 1 to 40 years from the end of the pandemic. Thanks to this graphic, we constated that a pandemic has effects on the economy few decades after the end of this pandemic. 20 years later, the natural rate of interest nearly has dropped by 1.5 percent. The natural rate needs about four decades to return to the level it would be expected to have if the pandemic had not taken place.

Figure 2: Response of European real natural rate of interest following a pandemic
by Oscar Jordà, Sanjay R. Singh and Alan M. Taylor



However, it is important to highlight that most historical studies are focused in one country or region. But in large-scale pandemics like the Covid-19, the consequences will spread the boundaries and will impact the global economy. This effect is recent, it is due to the globalization, international markets, travels...

These fifteen pandemics were linked with subsequent low returns to assets. Thanks to the past pandemic experiences, we constated that pandemics are followed by sustained periods with low investment opportunities. It is due to the excess capital per unit of surviving labour, and the desires to save of the population. The people who survive of a pandemic generally do precautionary saving in order to rebuild their wealth. If the historical trends that we have highlighted play out similarly for Covid-19 pandemic, the world economy risk to enter in a secular stagnation for the next two decades or more. The notion of secular stagnation is used for the first time by Alvin Hansen in 1939.⁶⁰ It designates an economic

⁶⁰ Wikipedia, 18/06/2020. Secular stagnation. Website.

situation where the end of population growth and technical progress lead to a period of anaemic economic activity. This idea was taken up by Lawrence Summers in 2014.

Central banks have an important role to play. They currently low interest rates down to zero and conduct large scale asset purchases to mitigate the impact of the lockdown. A sustained period of low real interest rates will allow the governments to mitigate the consequences of economic stimulus interventions. The main goal is to avoid the decrease of the real interest rate.

France and Italy are in Europe and both depend on the European Central Bank. So, their interest rate will be the same. The long-run economic consequences should be similar in the two countries. The differences will be about each government decisions and their recovery strategy.

c) Society changes

The society has suffered major upheaval due to the Covid-19 pandemic. These changes mainly occurred, in the short term, due to the containment. But even after the end of confinement, the reopening of businesses and schools, changes are being felt in society.

In France, the government accompanies employers and employees to the return to “normal”. The Ministry of Labour put in place a national deconfinement protocol for the resumption of work on 11 May. These rules apply to all sectors, such as flow management, personal protective equipment, screening and cleaning and disinfection of premises. These measures could be applied on the long-term.⁶¹

The second consequence is the wearing of the compulsory mask in transport, at schools, at work and in some shops. This wearing of the mask is likely to last in time and to enter little by little in the mores. It is likely that wearing the mask will become mandatory over the long term. The covid-19 pandemic is not over. New cases appear every day, the population is not immune to a new peak and a new confinement. Several months after the deconfinement, some cities near Beijing have been urgently confined again after the discovery of a great number of new cases. Traffic is restricted, schools are closed, and

⁶¹ Gouvernement, 25/06/2020. *Santé et protection des salariés : la priorité*. Website.



residential areas are confined.⁶² Similarly, in Italy, a hospital, and a building are confined in Rome.⁶³ This crisis will bring changes and reflections on the relationship with others, at work and inside the family.

Moreover, the economic consequences of the Covid-19 have an impact on gender equality during the lockdown and the recovery. We constated that the decrease of employment due to the social distancing measures has a bigger impact on sectors with a large female employment. The closures of schools have increased childcare needs. So, it has a large impact on working mothers. Nevertheless, there are forces which can promote gender equality. First, the company are rapidly adopting flexible work arrangements like teleworking. Second, nowadays, there are also many fathers who take care of their child. This crisis can improve the distribution between men and women of the division of labor in housework and childcare.⁶⁴

However, the situation for the population has improved in recent weeks. The boundaries within the Europe reopened. Travel is again allowed in the European countries. Cinemas have reopened. The club and association have restarted to exercise their activities. The situation seems to be slowly returning to normal.

⁶² Jade Psychieras, 14 /06/2020. Coronavirus : 57 nouveaux cas en Chine en 24 heures, la ville de Pékin en partie reconfinée. France bleu. Website.

⁶³ Franceinfo, 16/06/2020. *Coronavirus : reconfinement local, campagne de tests... Comment les pays confrontés à une résurgence de cas tentent de prévenir une seconde vague.* Website.

⁶⁴ M. Alon, M. Doepke, J. Olmstead-Rumsey, M. Tertilt, 01/04/2020. *The Impact of COVID-19 on Gender Equality.* NBER Working Paper No. 26947. NBER Program(s): Economic Fluctuations and Growth.

Conclusion

Covid-19, a global pandemic, has affected countries far beyond disease and death. In this thesis, we defined what are the real short-run and the potential long-run consequences of this pandemic in France and Italy. Our research aimed to determine the impacts that this epidemic has had and will have directly and indirectly during the pandemic and over the coming months and years.

First, we discussed about the short-run impacts. The first effect was on the population with the number of cases and deaths. The Covid-19 was initially a sanitary crisis. This pandemic impacted hospitals with the explosion of medical expenses and the saturation of beds. To mitigate the propagation, the countries put in place a total lockdown of the population. This total containment had a terrible effect on the economy. Countries are wondering about the implementation of an economic recovery to counter the decline in their GDP. The epidemic also had good with a pause for the environment. Moreover, it had effects on global energy markets, electricity demand, and energy investment. The society was also impacted by the stop of the associations and humanitarian aid associations and the growth of social distancing.

Second, we determined what could be the alleged and potential long-term impacts of Covid-19. Based on experiences of the SARS and MERS pandemic, this crisis could have long-effect on the old contaminated. In addition, the containment was just maybe a time bomb for the environment. We drew on the experience of previous pandemics such as the Black Death, the Spanish flu and SARS to determine the future economic consequences.

We cannot really determine these impacts but simply hypotheses based on past experiences. But what will be the real long-run impacts of Covid-19? Only time will tell. We will have to wait and see.

References

Ahmed H, Patel K, Greenwood D et al., 2020. *Long-term clinical outcomes in survivors of coronavirus outbreaks after hospitalisation or ICU admission: a systematic review and meta-analysis of follow-up studies*. MedRxiv. (Reference 47)

Baldwin Richard, 2020. *The supply side matters: Guns versus butter, COVID-style*. Research paper. (Reference 53)

Beniamino Morante, 02/03/2020. *Budget Coronavirus : l'Italie dégage des mesures exceptionnelles pour soutenir son économie*. Courrier International. Available on : <<https://www.courrierinternational.com/article/budget-coronavirus-litalie-degaine-des-mesures-exceptionnelles-pour-soutenir-son-economie>> [03/06/2020] Title in English : *Coronavirus budget: Italy draws exceptional measures to support its economy*. (Reference 35)

Bertrand Boucey, 29/05/2020. *La récession économique en Italie plus forte que prévu*. Les Echos Investir. Available on : <<https://investir.lesechos.fr/marches/actualites/la-recession-economique-en-italie-plus-forte-que-prevu-1911245.php#:~:text=Sur%20un%20an%2C%20la%20baisse,8%25%20comme%20en%20premi%C3%A8re%20estimation.&text=Le%20PIB%20de%20l'Italie,%2C%25%20en%20premi%C3%A8re%20estimation.>> [07/06/2020] Title in English : *The economic recession in Italy is stronger than expected*. (Reference 27)

Casalegno Elsa, 19/03/2020. *Coronavirus. Pas de pénurie alimentaire à craindre*. Quechoisir. Available on : <<https://www.quechoisir.org/actualite-coronavirus-pas-de-penurie-alimentaire-a-craindre-n77275/>> [08/06/2020] Title in English : *Coronavirus. No food shortage to fear*. (Reference 40)

Center for Systems Science and Engineering (CSSE), update every day. *COVID-19*. Johns Hopkins University. Available on : <<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>> [18/05/2020] (Reference 6)

Chauvin Hortense, 09/04/2020. *Consultations publiques suspendues : le Gouvernement déroge aux distances d'épandage de pesticides*. Actu-environnement. Available on : <<https://www.actu-environnement.com/ae/news/distance-epandage-enquete-publiques->



[gouvernement-chartes-35301.php4](#)> [06/06/2020] Title in English : *Public consultations suspended: Government waives pesticide application distances.* (Reference 25)

Clark Gregory, 2007. *The long march of history: Farm wages, population, and economic growth, England 1209–1869.* The Economic History Review, vol. 60, n° 1. Research paper. (Reference 55)

Clark Gregory, 2010. *The macroeconomic aggregates for England, 1209–2008.* Research in Economic History, vol. 27. Research paper. (Reference 56)

Climate Home News, 01/04/2020. *Cop26 climate talks postponed to 2021 amid coronavirus pandemic.* Available on:

<<https://www.climatechangenews.com/2020/04/01/cop26-climate-talks-postponed-2021-amid-coronavirus-pandemic/>> [01/07/2020] (Reference 23)

Climate Home News, 09/04/2020. *European Green Deal must be central to a resilient recovery after Covid-19.* Available on :

<<https://www.climatechangenews.com/2020/04/09/european-green-deal-must-central-resilient-recovery-covid-19/>> [29/06/2020] (Reference 51)

Collectivités Locales, 20/04/2020. *Elections municipales : report du second tour.*

Available on : <<https://www.collectivites-locales.gouv.fr/elections-municipales-report-second-tour>> [17/06/2020] Title in English : *Municipal elections: postponement of the second round.* (Reference 43)

Edoardo Secchi, 02/03/2020. *Le coronavirus frappe l'économie de l'Italie de plein fouet et menace celle de l'Europe et du monde.* Le HuffPost. Available on :

<https://www.huffingtonpost.fr/entry/le-coronavirus-frappe-leconomie-de-litalie-de-plein-fouet-et-menace-celle-de-leurope-et-du-monde_fr_5e5d245fc5b6732f50e5c47e>

[02/06/2020] Title in English : *Coronavirus hits Italy's economy and threatens Europe and the world.* (Reference 29)

Elysée, 16/03/2020. *Adresse aux Français, 16 mars 2020.* Available on :

<<https://www.elysee.fr/emmanuel-macron/2020/03/16/adresse-aux-francais-covid19>> [20/05/2020] (Reference 4 and 18)

Emmanuel Cugny, 06/03/2020. *Covid-19 : augmenter la dépense publique pour limiter la casse économique ?.* Franceinfo. Available on : <<https://www.francetvinfo.fr/replay-radio/le-brief-eco/le-brief-eco-covid-19-augmenter-la-depense-publique-pour-limiter-la>>

[casse-economique_3834565.html](#)> [03/06/2020] Title in English : *Covid-19: increase public spending to limit economic damage?* (Reference 36)

Franceinfo, 12/03/2020. *Coronavirus : aux abois, l'Italie va être aidée par la Chine.*

Available on : <https://www.francetvinfo.fr/sante/maladie/coronavirus/coronavirus-aux-abois-l-italie-va-etre-aidee-par-la-chine_3862931.html> [03/06/2020] Title in English : *Coronavirus: desperate, Italy will be helped by China.* (Reference 15)

Franceinfo, 28/04/2020. *Coronavirus : le surcoût pour les hôpitaux publics est estimé à ce stade entre 600 et 900 millions d'euros.* Available on :

<https://www.francetvinfo.fr/sante/maladie/coronavirus/coronavirus-achats-de-materiel-salaires-des-personnels-le-surcout-pour-les-hopitaux-publics-est-evalue-a-ce-stade-entre-600-et-900-millions-d-euros_3938599.html> [03/06/2020] Title in English : *Coronavirus: the additional cost for public hospitals is estimated at this stage between 600 and 900 million euros.* (Reference 12)

Franceinfo, 16/06/2020. *Coronavirus : reconfinement local, campagne de tests... Comment les pays confrontés à une résurgence de cas tentent de prévenir une seconde vague.*

Available on : <https://www.francetvinfo.fr/sante/maladie/coronavirus/coronavirus-reconfinement-local-campagne-de-tests-comment-les-pays-confrontes-a-une-resurgence-de-cas-tentent-de-prevenir-une-seconde-vague_4008813.html> [01/07/2020] Title in English: *Coronavirus: local containment, testing campaign... How countries facing a resurgence of cases try to prevent a second wave.* (Reference 63)

François Gemenne, 28/03/2020. *Pourquoi la crise du coronavirus est une bombe à retardement pour le climat.* Le Soir. Département de Géographie, Université de Liège.

Available on : <<https://plus.lesoir.be/290554/article/2020-03-28/pourquoi-la-crise-du-coronavirus-est-une-bombe-retardement-pour-le-climat>> [25/06/2020] Title in English : *Why the coronavirus crisis is a time bomb for the climate.* (Reference 48)

Gouvernement, 10/05/2020. *Comprendre le Covid-19.* Available on :

<<https://www.gouvernement.fr/info-coronavirus/comprendre-le-covid-19>> [18/05/2020] Title in English : *Understanding the Covid-19* (Reference 1)

Gouvernement, 01/06/2020. *Covid-19 – France.* Available on :

<<https://www.gouvernement.fr/info-coronavirus/carte-et-donnees>> [01/06/2020] (Reference 8)

Gouvernement, 25/06/2020. *Relancer le pays*. Available on :

<<https://www.gouvernement.fr/info-coronavirus/retour-au-travail>> [29/06/2020] Title in English : *Revive the country*. (Reference 37)

Gouvernement, 25/06/2020. *Santé et protection des salariés : la priorité*. Available on :

<<https://www.gouvernement.fr/info-coronavirus/retour-au-travail>> Title in English : *Health and protection of employees: the priority*. (Reference 61)

Gouvernement, 10/05/2020. *Tests et dépistage*. Available on :

<<https://www.gouvernement.fr/info-coronavirus/tests-et-depistage>> [27/06/2020] Title in English : *Tests and screening*. (Reference 9)

Governo Italiano, 09/03/2020. *Conferenza stampa del Presidente Conte a Palazzo Chigi*.

Video. Available on : <<http://www.governo.it/it/articolo/conferenza-stampa-del-presidente-conte-a-palazzo-chigi/14273>> [04/06/2020] Title in English : *Press conference of President Conte at Palazzo Chigi*. (Reference 17)

GreenPeace, 24/03/2020. *Covid-19, climat et environnement*. Available on :

<<https://www.greenpeace.fr/covid-19-climat-et-environnement-5-questions-a-se-poser/>> [29/06/2020] Title in English : *Covid-19, climate and environment*. (Reference 49)

IAE, 01/04/2020. *COVID-19*. Available on : <<https://www.iea.org/topics/covid-19>>

[12/06/2020] (Reference 38)

Ilaria Conti, 11/05/2020. *Covid-19: an accelerator or a stopper of decarbonisation ?*. FSR.

Available on : <<https://fsr.eui.eu/covid-19-an-accelerator-or-a-stopper-of-decarbonisation/>> [12/06/2020] (Reference 39)

INSEE, 30/04/2020. *Comptes nationaux trimestriels*. Available on :

<<https://www.insee.fr/fr/statistiques/4485632>> [03/06/2020] Title in English : *Quarterly national accounts*. (Reference 30)

INSEE, 13/10/2016. *Critères de convergence (traité de Maastricht)*. Available on :

<<https://www.insee.fr/fr/metadonnees/definition/c1348>> [20/06/2020] Title in English : *Convergence criteria (Maastricht Treaty)*. (Reference 34)

INSEE, 26/06/2020. *Nombre de décès quotidiens*. Available on :

<https://www.insee.fr/fr/information/4470857#graphique-figure_evol> [23/05/2020] Title in English : *Number of deaths per day*. (Reference 7)

J. Baruch, P. Breteau, G. Dagorn, M. Ferrer, A. Dahyot, L. Sanchez, update every day.
Coronavirus : visualisez l'évolution de l'épidémie en France et dans le monde. Le Monde.
Available on : <https://www.lemonde.fr/les-decodeurs/article/2020/05/05/coronavirus-age-mortalite-departements-pays-suivez-l-evolution-de-l-epidemie-en-cartes-et-graphiques_6038751_4355770.html?utm_source=old_tracker> [01/06/2020] Title in English : *Coronavirus: visualize the evolution of the epidemic in France and the world.* (Reference 5 and 10)

Jade Psychieras, 14 /06/2020. *Coronavirus : 57 nouveaux cas en Chine en 24 heures, la ville de Pékin en partie reconfinée.* France bleu. Available on : <<https://www.francebleu.fr/infos/sante-sciences/coronavirus-la-ville-de-pek-in-en-partie-reconfin-ee-1592051470>> [01/07/2020] Title in English : *Coronavirus: 57 new cases in China in 24 hours, the city of Beijing partially reconfigured.* (Reference 62)

Jean-François Julliard, 31/03/2020. *Crise du coronavirus : quels impacts sur l'environnement ?.* Greenpeace. Youtube video. Available on : <https://www.youtube.com/watch?v=pLWFITeeSbQ&feature=emb_logo> [22/05/2020] Title in English : *Coronavirus crisis: what impacts on the environment?* (Reference 21)

Le Monde, 30/03/2020. *Hausse des violences conjugales pendant le confinement.* Available on : <https://www.lemonde.fr/societe/article/2020/03/30/hausse-des-violences-conjugales-pendant-le-confinement_6034897_3224.html> [17/06/2020] Title in English : *Increased domestic violence during confinement.* (Reference 45)

Le Monde, 29/03/2020. *Le coronavirus dans le monde : l'Europe et les Etats-Unis, épicentres durables de la pandémie.* Available on : <https://www.lemonde.fr/planete/article/2020/03/29/le-coronavirus-dans-le-monde-trois-milliards-de-personnes-confinees-trump-renonce-a-placer-new-york-en-quarantaine_6034798_3244.html> [18/05/2020] Title in English : *Coronavirus in the world: Europe and the United States, sustainable epicentres of the pandemic.* (Reference 3)

LeParisien, 22/03/2020. *Coronavirus : faute de touristes, les eaux de Venise redeviennent transparentes.* Video. Available on : <<https://www.leparisien.fr/video/video-coronavirus-faute-de-touristes-les-eaux-de-venise-redeviennent-transparentes-22-03-2020-8285349.php>> [01/07/2020] Title in English : *Coronavirus: lack of tourists, the waters of Venice become transparent again.* (Reference 20)

Lepetitjournal Milan, 02/03/2020. *Italie : 3,6 milliards d'euros débloqués pour soutenir l'économie*. Available on : <<https://lepetitjournal.com/milan/actualites/italie-36-milliards-deuros-debloques-pour-soutenir-leconomie-275167>> [07/06/2020] Title in English : *Italy: €3.6 billion released to support the economy*. (Reference 28)

Le Temps, 23/02/2020. *Italie : onze villes en quarantaine, le Carnaval de Venise annulé*. Available on : <<https://www.letemps.ch/monde/italie-onze-villes-quarantaine-carnaval-venise-annule>> [22/05/2020] Title in English: *Italy: eleven cities in quarantine, the Carnival of Venice cancelled*. (Reference 41)

Libération, 15/03/2020. *L'Union européenne va limiter les exportations de masques vers l'extérieur*. Available on : <https://www.liberation.fr/direct/element/lunion-europeenne-va-limiter-les-exportations-de-masques-vers-lexterieur_110574/> [03/06/2020] Title in English : *The European Union will limit exports of masks to the outside world*. (Reference 13)

M. Alon, M. Doepke, J. Olmstead-Rumsey, M. Tertilt, 01/04/2020. *The Impact of COVID-19 on Gender Equality*. NBER Working Paper No. 26947. NBER Program(s): Economic Fluctuations and Growth. Research paper. (Reference 64)

Malingre Virginie, 18/05/2020. *La France et l'Allemagne proposent un plan de relance européen de 500 milliards d'euros*. Le Monde. Available on : <https://www.lemonde.fr/economie/article/2020/05/18/la-france-et-l-allemande-proposent-un-plan-de-relance-europeen-de-500-milliards-d-euros_6040040_3234.html> [06/06/2020] Title in English : *France and Germany propose a European recovery plan of 500 billion euros*. (Reference 32)

Marina BERTSCH, 06/04/2020. *Pandémie de coronavirus : quels effets sur l'environnement?*. Video Élément Terre. FRANCE24. Available on : <<https://www.france24.com/fr/europe/20200406-pandemie-de-coronavirus-quels-effets-sur-l-environnement>> [22/05/2020] Title in English : *Coronavirus pandemic: what effects on the environment?* (Reference 22)

Nadine Levratto, Gilles Raveaud, 05/05/2020. *Coronavirus : 7 milliards d'euros pour Air France, sans contrepartie environnementale ou sociale, voilà qui pose question*. Le Monde. Available on : <https://www.lemonde.fr/idees/article/2020/05/05/coronavirus-7-milliards-d-euros-pour-air-france-sans-contrepartie-environnementale-ou-sociale-voila-qui-pose-question_6038668_3232.html> [29/06/2020] Title in English : *Coronavirus: 7*

billion euros for Air France, without environmental or social counterpart, that raises a question. (Reference 50)

Newburger Emma, 25/03/2020. *Coronavirus could weaken climate change action and hit clean energy investment, researchers warn.* CNBC. Available on:

<<https://www.cnbc.com/2020/03/13/coronavirus-could-weaken-climate-change-action-hit-clean-energy.html>> [01/07/2020] (Reference 24)

Ô. Jordà, S. R. Singh, A. M. Taylor, 01/03/2020. *Longer-run Economic Consequences of Pandemics.* Federal reserve bank of San Francisco - working paper series: 1 – 15.

Available on : <<https://www.frbsf.org/economic-research/files/wp2020-09.pdf>> (Reference 57)

OECD, 08/06/2020. *Sur la voie de la reprise, l'économie mondiale est sur une ligne de crête, selon l'OCDE.* Available on : <<https://www.oecd.org/coronavirus/fr/>> [01/07/2020]

Title in English : *On the road to recovery, the global economy is on a crest, by OECD.* (Reference 26)

ParisMatch, 06/03/2020. *Coronavirus : Le gel hydroalcoolique pourra être fabriqué en pharmacie, son prix fixé par l'Etat.* Available on :

<<https://www.parismatch.com/Actu/Sante/Coronavirus-Le-gel-hydroalcoolique-pourra-etre-fabrique-en-pharmacie-son-prix-fixe-par-l-Etat-1677569>> [03/06/2020] Title in

English : *Coronavirus: The hydroalcoholic gel can be manufactured in pharmacy, its price fixed by the state.* (Reference 14)

Poirier Damien, 30/04/2020. *Le Maire appelle "un maximum de Français" à retravailler le*

11 mai. Ma Commune. Available on : <<https://www.macommune.info/le-maire-appelle-un-maximum-de-francais-a-retravailler-le-11-mai/>> [21/06/2020] Title in English :

Le Maire calls "a maximum of French people" to work again on May 11th. (Reference 31)

Pourquoidocteur, 17/03/2020. *Paracétamol : une seule boîte par personne dans les pharmacies.* Available on : <<https://www.pourquoidocteur.fr/Articles/Question-d-actu/31819-Paracetamol-seule-boite-pharmacies>> [03/06/2020] Title in English :

Paracetamol: one box per person in pharmacies. (Reference 16)

Prof. Andrea Remuzzi, Prof. Guiseppe Remuzzi, 17/04/2020. *COVID-19 and Italy: what next?.* The Lancet. Volume 395, Issue 10231, Pages 1225-1228. (Reference 11)

Stéphane Korsia-Meffre, 16/06/2020. *COVID-19 : quelles séquelles à long terme ?*

L'expérience du SRAS et du MERS. Available on :

<https://www.vidal.fr/actualites/25119/covid_19_quelles_sequelles_a_long_terme_l_experience_du_sras_et_du_mers/> [24/06/2020] Title in English : *COVID-19: what long-term effects? The experience of SARS and the MERS* (Reference 46)

Temin Peter, 2014. *The Black Death and industrialisation: Lessons for today's South*. Research paper. (Reference 54)

The European Space Agency, 27/03/2020. *Coronavirus lockdown leading to drop in pollution across Europe*. Available on:

<https://www.esa.int/Applications/Observing_the_Earth/Copernicus/Sentinel-5P/Coronavirus_lockdown_leading_to_drop_in_pollution_across_Europe> [06/06/2020] (Reference 19)

Schmelzing, 2020. *Eight centuries of global real interest rates, R–G, and the 'suprasecular' decline, 1311–2018*. Bank of England Staff Working Paper 845. Research paper. (Reference 58)

Wikipédia, 25/04/2020. *Knut Wicksell*. Available on:

<https://fr.wikipedia.org/wiki/Knut_Wicksell> [30/06/2020] (Reference 59)

Wikipédia, 11/04/2020. *Politique de relance*. Available on :

<https://fr.wikipedia.org/wiki/Politique_de_relance> [06/06/2020] Title in English : *Recovery Policy*. (Reference 33)

Wikipédia, 11/05/2020. *Référendum constitutionnel italien de 2020*. Available on :

<https://fr.wikipedia.org/wiki/R%C3%A9f%C3%A9rendum_constitutionnel_italien_de_2020> [19/06/2020] Title in English : *Italian Constitutional Referendum of 2020*. (Reference 44)

Wikipedia, 18/06/2020. *Secular stagnation*. Available on:

<https://en.wikipedia.org/wiki/Secular_stagnation> [02/07/2020] (Reference 60)

World Health Organization, 30/01/2020. International Health Regulations Emergency Committee on novel coronavirus in China. Available on : <<https://www.who.int/news-room/events/detail/2020/01/30/default-calendar/international-health-regulations-emergency-committee-on-novel-coronavirus-in-china>> [18/05/2020] (Reference 2)

20 minutes, 10/04/2020. *Coronavirus : Dix ministres européens de l'Environnement appellent à une relance post-Covid « verte »*. Available on :



<<https://www.20minutes.fr/planete/2758631-20200410-coronavirus-dix-ministres-europeens-environnement-appellent-relance-post-covid-verte>> [29/06/2020] Title in English : *Coronavirus: Ten EU environment ministers call for a post-Covid “green” relaunch.* (Reference 52)

20 Minutes, 26/02/2020. *Coronavirus : Le défilé du Nouvel an chinois annulé à Paris.*
Available on : <<https://www.20minutes.fr/paris/2703811-20200126-coronavirus-defile-nouvel-an-chinois-annule-paris>> [17/06/2020] Title in English : *Coronavirus: Chinese New Year parade cancelled in Paris.* (Reference 42)