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The Covid-19 Pandemic:
economic impact and policies for the Italian recovery

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Introduction

By the end of 2019 and the beginning of 2020 the infection generated by a virus of the family SARS-Covid, the so called Covid-19 broke out in Whuan and rapidly spread globally.

Covid-19 is a highly contagious infectious disease that affects the respiratory tract and often cause mild and moderate symptoms, however in severe cases the disease can degenerate into symptoms that sometimes even lead to death. The national governments of the countries concerned, in order to contain the spread of the disease, have had to adopt social distancing measures, while scientists have been trying to develop an effective vaccine. The lockdowns introduced by governments have provided for restrictions on the mobility of individuals and have led to the closure of schools and public spaces, the stop of commercial activities and non-essential services, the downsizing or reorganisation of essential production activities, the reduction of tourism activities and the quotation of import and export activities. Lockdowns and a slump in consumer spending immediately resulted in very severe economic and financial consequences. What is feared is a sharp deterioration in public finances, an increase in the insolvency rate of companies and a significant worsening of households' economic and financial conditions. To avoid an even deeper economic catastrophe, central banks and governments have had to intervene with the introduction of monetary and fiscal policies.

The aim of this paper is to analyse how the main Italian and European economic indicators have been affected by the impact of the crisis and to provide an analyses of the main measures implemented by the European Union and Italy to deal with the pandemic. In the first chapter I will provide a theoretical overview on the evolution of past and hypothetical pandemics, on the mechanisms of transmission of these shocks to the economy and a brief description of the roles of economic policies to stem the damage and support the economy. In the second chapter I will present more specifically the Covid-19 crisis and the damage caused by it, also referring to the economic literature available on the subject. I will then describe the effects of the crisis on economic growth both in Europe and, in more detail, in Italy. Finally in the last chapter I will describe the measures taken by the European Central Bank and the main initiatives and tools taken by the Italian government in response to the health emergency, as well as the main sources of funding made available by the European Union to tackle the economic collapse. These are the European Recovery Plan called Next Generation Eu (NG-EU), the European Stability Mechanism (ESM) and the Support to mitigate Unemployment Risks in Emergency (SURE). In particular, I will focus on the agreement reached on the Next Generation, which has a strong political value since for the first time the governments of the EU member states have, in fact, created a system of transfers of resources to the states that have suffered the greatest effects of the Covid-19 crisis.

CHAPTER 1

Pandemics' effect on economic growth: theoretical framework

1.1 Pandemics in the era of globalization

The term pandemic, often defined as “an epidemic occurring worldwide”, describes the spread of a given infectious disease on a global scale thus making a large part of the world population at risk of contracting.¹ According to the World Health Organization (WHO), to be able to talk about a pandemic, it is necessary to be faced with an external pathogen that has different features from those that are typical of viruses that are already in circulation within human bodies. This makes most of the population, who does not have the immune defenses or antibodies necessary to fight the pathogen, prone to infection. For this reason, the agent must be able to infect the human being, cause a disease and be transmissible from person to person.

Diseases and illnesses have haunted humanity since the earliest days. Jared Diamond in his “*Armi, Acciaio e Melattie*” pinpoints the origin of pandemics to the establishment of agriculture and breeding during the neolithic revolution, blaming proximity to animals and low hygiene for the introduction of infectious agents which were not present in the human population.² With the rise of the Roman Empire, the opening of new commercial routes has created a path and fertile ground for the distribution of pandemics. The bubonic plague which started in 1347, also famously referred to as the ‘Black Death’, spread among the human population via droplets, leading to a pneumonic plague, and was only later found to have been introduced by rats infected with a strain of *Yersinia* originated in the guts of oriental fleas.³ Like COVID-19, the plague led to a decrease in doctors, the spread of fake news with regards to its origin, the stigmatization of minorities and the adoption of quarantining methods to prevent the contagion. Yet, with its 50 year reign of horrifying symptoms and an estimated 60% of the European population being claimed, the Black Death was undoubtedly more catastrophic than COVID-19 has been so far.⁴ Despite the few similarities, in fact, the occurrence of the plague has been a turning point in history with profound socio-economic consequences among which the fall of the upper and lower classes and the emergence of the middle class, also helped by the development of highly effective, labour-saving technologies as preventative measures for the labour shortages caused by the black death.⁵

¹ (Kelly, 2011)

² (Diamond, 2014)

³ (Huremović, 2019)

⁴ (Britannica, 2020)

⁵ (Huremović, 2019), (Scheidel, 2017)

The issues of epidemics and pandemics, however, are also closely linked to the evolution of society and the shifts from early agrarian communities to increasingly modern cities, as while the rapid rise of technology and civilization has allowed trade and communication to grow on a global scale, they also provided an easier and faster vector to the spread of diseases across the world. In 1918, military movements, overcrowding and advanced modes of transportation characteristic of World War I, for example, have facilitated the spread of the H1N1 influenza a virus causing the first truly global pandemic, also known as the Spanish Flu.⁶ The flu was characterized by three waves caused by more virulent and deadlier mutations and at its peak, over a quarter of the population contracted the flu across various areas including USA, Asia, Africa, and the Pacific Islands.⁷ With a mortality rate ranging between 10%-20%, it is estimated to have taken between 50-100 million lives accounting for more deaths in a year than the Black Death had killed in a century.⁸ Retrospective studies on the influenza pandemic show this to be linked to many delayed and long lasting effects such as lower incomes and socio-economic status of children in the womb of mothers who contracted this disease.⁹

Pandemics can also greatly vary in their course depending on the characteristics of the infecting agent such as their morbidity and mortality rates. The HIV pandemic, for example, is a slow spreading pandemic yet one that proved hard to eradicate, bringing new public health challenges with each iteration. It first appeared in the USA of the early 1980s, coined as the ‘gay disease’ due to its predominance in the queer population, caused a lot of concern and stigma for its inevitable progression from AIDS to death.¹⁰ Today, the advancements of modern medicine have allowed HIV to be managed as a chronic disease with the aid of treatments and AIDS-related deaths have been reduced by 60% since the peak in 2004.¹¹ Nonetheless, with a prevalence rate of 0.79% it still affected 38 million people just in 2019 and while this makes it a 23% decline in new infections since 2010 these are still three times higher than the 2020 target, highlighting a slow progress on prevention tactics.¹² Nonetheless, its overall annual economic and social burden is much lower than that caused by COVID-19 and it is mainly concentrated specifically on some sub-Saharan African countries.¹³

⁶ (Huremović, 2019)

⁷ (Simonsen L, 1998)

⁸ (Flecknoe D, 2018)

⁹ (Almond, 2006)

¹⁰ (Huremović, 2019)

¹¹ (HIV.gov, 2020)

¹² *Ibidem*

¹³ (Kristen Danforth, 2017)

While pandemics are not new to history, recent statistics seem to suggest they are on the rise. Just between 2011 and 2018, WHO tracked 1483 epidemic events in 172 countries.¹⁴ Furthermore, many of today's viruses, including COVID-19, Ebola (2014-2016) and Zika (2015-2016), are not as new as some many think. As they spread and reproduce, viruses can evolve quickly and sometimes become more virulent and resistant to pre-existing vaccinations and antibodies. Cases of coronaviruses in humans, for example, had already been identified back in the 1960s, and among the most renowned variants include SARS (2003), MERS (2012), and the latest, COVID-19.¹⁵ In the case of Ebola and Zika, instead, the first infections can be traced back to the 1970s and 1950s respectively, leading to major pandemic events only within the last few years.¹⁶

One explanation for this rise is to be found in external factors such as the political and socio economic landscape of the 21st century and particularly in the overpopulation, disproportionate socioeconomic disparities and the level of pollution which characterise globalised societies and which have been identified as strong determinants of general public health. Particularly, the latter has been found to be strongly correlated to the mortality rates and symptoms severity associated with diseases caused by Ebola, Zika and COVID-19 as these have respiratory modes of transmission. The way global political leaders and organizations deal with the above issues, therefore, influences also the capacity of viruses to spread, evolve and affect people and societies across the world. In relation to the Spanish influenza, Brainerd and Siegler (2003) found economic growth in the following year.¹⁷ Today, however, our medical knowledge and equipment has greatly improved making it hard to make an accurate forecast, especially given that since 1918 the world has not experienced another global pandemic until the advent of COVID-19.

While the future remains uncertain, hindsight is a powerful tool to make sense of our precarious and almost unbelievable present. Drawing the similarities and differences between past and present pandemics events provide us with valuable information on the assumptions to make when predicting future impacts. As such, the link between pandemics and economics has often been studied, both in relation to past events and hypothetical futures, aimed at quantifying and predicting the shocks of a pandemic in terms of lost output and growth. Yet, the unpredictability associated with the very nature of a pandemic has often led to approximate or even contrasting results. For example, Young (2004) and Bell and Gersbach (2004) studies, using one theoretical model, reached opposite conclusions

¹⁴ (Global Preparedness Monitoring Board 2019)

¹⁵ (Jagdish Khubchandani, 2020)

¹⁶ *Ibidem*

¹⁷ (Elizabeth Brainerd, 2003)

with regards to the future effects of the AIDS epidemic on the net per capita consumption of South Africa, the latter arguing for an increase. A limitation of these studies being the results' dependency on the availability of data and the model used, especially if considered that these may carry many 'rigid' assumptions and can disregard the flexibility and adaptability, that characterises modern economy, when exposed to shocks.

In conclusion, while it is impossible to determine exactly how the COVID-19 will compare with previous pandemics now, looking back on the similarity and differences between each pandemic and reconsidering the past learnt lessons, can inform us how to translate current events into foreseeable consequences and prediction. The question that lingers is whether the COVID-19 pandemic will bring about permanent economic, social and political changes and what might these be?

1.2 Pandemics Macroeconomic effects

As seen in the previous 'chapter', pandemics often have had long lasting effects, that have shaped the economic, political, and social aspects of human civilization. Among these, the economy is probably one of the first and most notable sectors to be struck by a pandemic, firstly in terms of costs of medical equipment and personnel to fight the virus, secondly by a series of trickling effects on the market's supply and demand triggered by an overwhelmed health system and the continued containment measures adopted to stop the spread. Understanding these on a macroeconomic level, is pivotal for building predictions on the upcoming future. In order to do so, firstly, it is important to understand the type of threat that a pandemic poses on a macroeconomic level. Secondly, it is to understand the channels by which the spread of a virus can affect the market and ultimately, the economy, in terms of supply and demand.

A certain level of fluctuation in the economy is often normal, if not to be expected. In the case of a major disaster, instead, for instance a tsunami, the economy of one or more countries can be severely disrupted as the loss of lives and landscape destruction directly affect the capital. Unlike a natural disaster, however, the effect of a pandemic, like the one caused by the COVID-19 virus, are further reaching: they are prolonged events, often characterized by multiple waves of contagion, spread across the whole world and thusly harming the market sphere with an impact that aggregates as it propagates across sectors, states, and countries.

Furthermore, pandemics are characterized by the inevitable succession of three types of economic shocks. The first is given by the pressing demand for assistance on the health system and the

weakening of the workforce caused by the increase of people that need medicalization. The second is caused by the introduction of containment measures aimed at hinder contagion by limiting social activities thus including the closure of many non-essential businesses. Finally, the third shock is linked to the way the pandemic impacts the behaviour, beliefs and decision-making of individuals through its relentless impacts the normal lifestyle of populations as well as their physical and mental wellbeing. These 'indirect' effects cause the main economic damages. A study conducted by Smith et al (2011) to estimate the possible macroeconomic effects of an influenza pandemic in England, in fact, showed that social restrictions and fear can have significant impact on the GDP thus making "the disease is not necessarily the main concern from a macroeconomic perspective".¹⁸ In case of the advent of a new influenza pandemic, the study estimated an overall GDP reduction between 0.3% and 0.6% up to 1.14 -1.42%, if considering the effects of prophylactic absenteeism and school closures as well.¹⁹ In order to do such economic calculations, we need to distinguish between supply and demand effects:

- The supply effects derive from a loss in hours worked. An overloaded health system can trigger the closure of schools and businesses in the attempt to slow down the spreading and limit the need for rescue. Furthermore, death, illness, and/or the so-called prophylactic absenteeism - "absence from work of a healthy individual in order to avoid infection" - whether imposed by the government through the introduction of containment measures and lockdowns or as a result of people's fear, flow into a productivity drop which can have a domino effect on multiple sectors, industries and countries in the case of globalized societies.²⁰ Most companies today, in fact, outsource their products' production and manufacturing to other suppliers for a more cost-effective and efficient solution. For example, the food industry may rely on companies operating in the plastic industry for the production of packaging. Overall, the complexity of today's production chains can, on one side, have a ripple effect on multiple sectors and/or the economy of different countries, on the other, it can act as a safety net by preventing a single point of failure. In the case of the logistical restrictions linked to the Covid-19 pandemic, in fact, had an impact on the supply chain of about 75% of companies.²¹ Working towards a more coordinated international response, however, has been suggested as an important risk management solution which can also help companies and the economy to reopen safely.

¹⁸ (Smith RD, 2011)

¹⁹ (Smith RD, 2011)

²⁰ (Richard D Smith, 2009)

²¹ (Mazzucco, s.d.)

- Demand effects, on the other hand, arise primarily from precautionary measures taken by the population to avoid infection. According to Say's law or the law of the market, 'supply creates its own demand' thus implying that no supply equals no demand. In a pandemic scenario, therefore, the loss of supply discussed above leads to a drop in demand and to a collapse of international trade and foreign investments in a domino fashion.²² Sectors like tourism, transport, entertainment and retail are among the most affected. For example, the Hong Kong tourism industry in the second quarter of 2003, with the advent of SARS, saw a 90% decline in just two months.²³ Furthermore, people tend to spend less, as consequence of the reduction in disposable income due to the reduction of wages and/or the loss of job for many workers which followed the slowdown or closure of activities. This 'income effect', nonetheless, occurs in the short term and should be transitory since after the pandemic is overcome, productivity is expected to return to pre-crisis levels. Consumption, once the spread of the pandemic is over or contained and consumer confidence is restored, could rebound and partially offset the negative effects caused by the decline in confidence. This can be especially true if the government applies expansionary fiscal policies, thus increasing public spending. As for tourism, it may take longer for people to regain confidence and start traveling again.

In order to estimate the economic effects in the short and in the long run, it is important to also take into consideration other factors such as the morbidity and mortality rate of a pandemic. In the short term, the morbidity rate can have more devastating effects than the death rate as a study by Kilbourne (2004) in relation to influenza highlighted. This can be blamed on the stalling of social activities etc. In the long run, as we adjust to the new pandemic lifestyle, however, the death rate can be a greater predictor of the economic state. Meltzer, Cox et al (1999), in their study examining the effects of an influenza pandemic, identify the mortality rate as the cause of 83% of economic loss.²⁴ Other factors such as the more or less effective containment of the number of infections and a possible resurgence of the virus, as it is a very common phenomenon when it comes to pandemics or epidemics, are variables to consider when drawing an estimation. The Spanish flu pandemic can be an example of this, as three were waves that hit the world in 1918-1919.

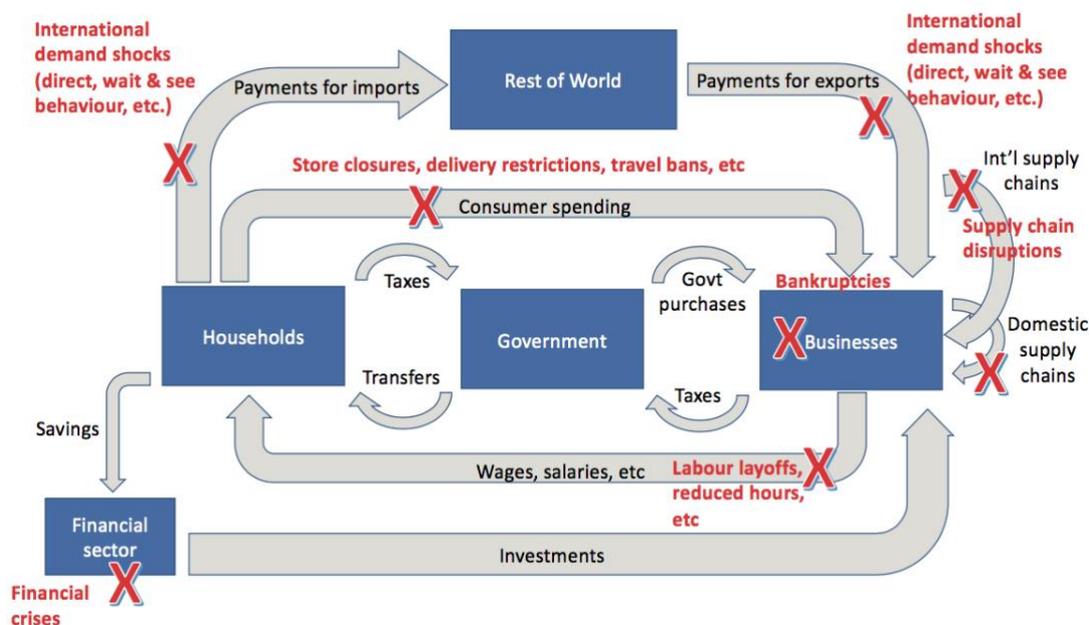
²² (Veronica Guerrieri, 2020)

²³ (Lars Jonung, The macroeconomic effects of a pandemic in Europe. A model-based assessment, 2006)

²⁴ (Warwick J McKibbin, 2006)

Another aspect characteristic of pandemics is that it creates a psychological state of uncertainty and fear of being infected which leads to a decrease in consumer confidence, heavily affecting the demand for goods and services. Consumers do not only limit spending to avoid contagion, but also find themselves limiting expenses to what is necessary and increasing savings in preparation for an uncertain future. The same is true for companies which, faced with an overall decline in demand accompanied by an increase in uncertainty and risk, tend to decrease and postpone investments. This is aggravated by a similar response from the banking system furthering the disruptions to the flow of money. Non-performing loans, due to debtors' insolvency, could weigh on banks' balance sheets, which will find themselves absorbing credit losses and paying interests on deposits. This will make it more difficult for banks to provide new loans and financing to households and businesses, therefore compromising access to credit and the prospects for recovery. This effect would further contribute to the interruption of the flow of money.

Figure 1: Multiple Strikes in the Circular Flow of Income Diagram



Source: Baldwin and Di Mauro, *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*, 17

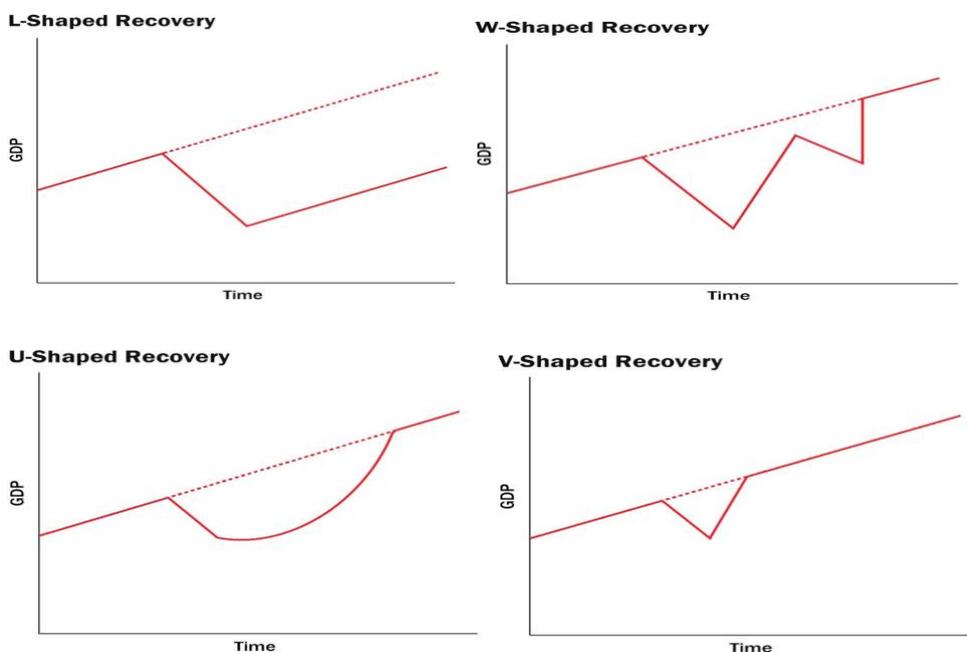
In conclusion, pandemics can slow down or even block, partially or completely, companies' activities, putting them in front of important logistical difficulties, especially if measures to combat the infection are introduced.

The size of these effects on businesses and on the overall supply, depends on the level of supply chain integration and the degree of globalization that characterise industries and companies. This factor is directly proportional to the spread of supply shocks between sectors and nations.

1.3 Recessions and possible economic recovery shapes post pandemics

The strikes caused by a pandemic in the business cycle can lead to a recession. Once the recession hits bottom and the economy slowly starts growing again, we can talk about recovery. However, recoveries have different stages and can take different forms. It is important to consider leading and lagging indicators to understand the trend of a recovery, the former predict economic trends, such as the change in prices, while the latter do not predict, but follow economic trends (eg. GDP and CPI). In this paragraph, we will look at the four different forms that recoveries can take following a pandemic:

Figure 2: Recovery shapes



Source: (Hansen, 2020) *Forbes*

- V-shaped recovery

In this case the economy undergoes a rapid collapse in GDP, which then quickly rebounds and returns to previous levels. Economic growth then continues at the same level as before the recession. This recovery is due to a rapid upturn in consumption, which causes the demand shock to be completely reabsorbed.

- U-shaped recovery

Even in the case of a U-shaped recovery economic growth returns to the same level as before, however not as quickly as in the case of a V-shaped recovery.

- W-shaped recovery

A W-shaped recovery is characterized by two recessions. In fact, following the first recession, the recovery seems to follow the same path of the V-shaped recovery and therefore GDP rises again, however, before it reaches previous levels, it falls back into another, often less severe, recession.

- L-shaped recovery

In this type of scenario, the economy falls into a recession, but unlike the other scenarios, the economy does not return to previous levels of growth. High levels of unemployment and low levels of investment often characterize this type of recovery.

Jonung and Roeger (2006) and Darby et al (1999) in their studies on the spread of a hypothetical pandemic in Europe and in the UK, both estimated a V-shaped recovery for the economy. Jonung and Roeger, in fact, tried estimating the economic effects of a possible pandemic in Europe, using data from past pandemics. In their model they apply a morbidity and mortality rate of 30% and 2.5% respectively and per worker estimate an average of three weeks lost from work. In the worst case scenario, considering also the psychological factors that could affect the population and consequently the demand, such as prophylactic absenteeism, the decrease in trade flows and the negative effects that could then spill over to the financial markets, they estimate a loss of GDP between 2 and 4 percent. Darby et al (1999), instead tried estimating the effects of a hypothetical pandemic in England with a duration of three months. According to their finds, in the most severe case, a loss of 1-2 percent is expected. Both these studies presume the fall in GDP to be reabsorbed once the emergency is over, as productivity and consumption return to pre-crisis levels.

This is what happened in the US with the advent of the Spanish flu. According to the study carried out by James and Sargent (2006) the US retail sales saw a V-shaped recovery between November 1918 and January 1919. The growth of sales firstly fell to -6%, while after the pandemic rebounded to 8%.

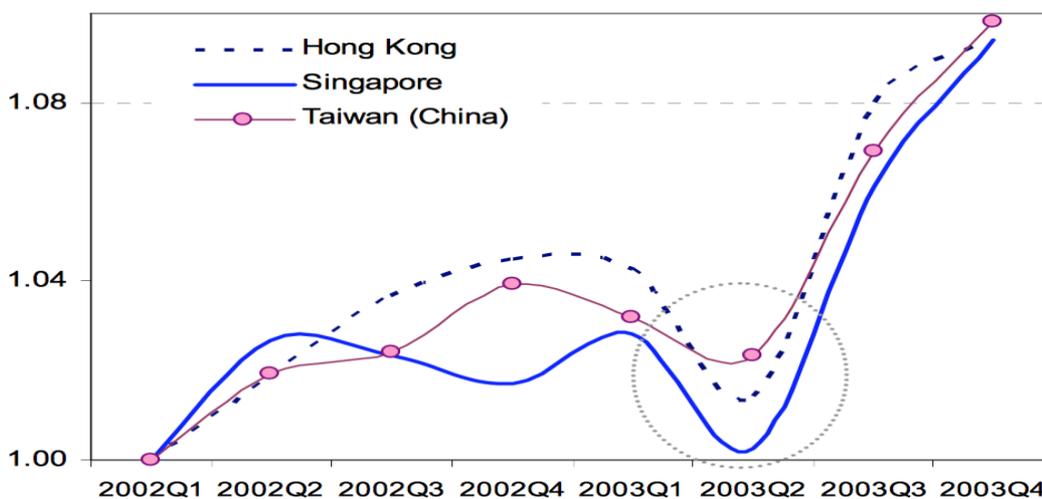
Despite the studies mentioned, post-pandemic scenarios could be more severe and show slower recoveries or even no recovery at all. For example, regarding the COVID-19 pandemic, Fornaro and Wolf (2020) stated that the recovery could follow an L-shaped path and therefore not return to the initial level of economic growth. “Our analysis suggests that the supply disruption caused by the

coronavirus epidemic, if it turns out to be persistent, might cause a severe slump driven by weak aggregate demand”.²⁵

For what concerns actual events, we can refer to the 2003 SARS pandemic and the effects it had on Hong Kong, Taiwan and Singapore which presented a V-shaped recovery. As we can see in figure 3 the sharp drop in GDP in the second quarter of 2003 is then followed by a rebound in the third quarter. For example, we can take into consideration Hong Kong’s GDP which presented the same yearly growth rate, of about 4.5%, two quarters before and two quarters after the outbreak.²⁶ The decline was mainly due to the reduction in the growth of services and manufacturing, caused by the quarantine measures introduced by governments and people’s fear of infection.²⁷ As the outbreak was brought more under control and the number of cases started dropping, population’s confidence restored and consumption recovered. Consequently, retail sales showed a promising increase after May 2003 and fully returned to pre-crisis levels towards the end July.²⁸ This rapid increase in growth is principally due to the return of tourists and visitors.

It’s important to state that both the SARS and the Swine flu pandemic mainly resulted in a demand shock. The recovery shape a pandemic might follow a different pattern in the event of both a demand and supply shock.

Figure 3: Real GDP in 3 SARS Affected Economies – seasonally adjusted; Index 2002: Q1 = 1



Source: On SARS Type Economic Effects during Infectious Disease Outbreaks
<https://openknowledge.worldbank.org/handle/10986/6440>

²⁵ (Luca Fornaro, 2020)

²⁶ (Milan Brahmbhatt, 2008)

²⁷ (Chris Kushlis, SARS Is Not a Model for Coronavirus, 2020)

²⁸ (Alan Siu, 2004)

From studies concerning the Spanish flu, a similar pattern emerges. The pandemic, which began in September 1918 and ended in December of the same year, led to a negative growth in retail sales of around -6% in December. However, retail sales growth jumped back to 8%, in January 1919. The reconstruction of consumption from one quarter to another is not only caused by the advent of epidemics and pandemics, but can also be caused by other disasters. For example, the terrorist attack of 11 September 2001 led to a meaningful redistribution of consumption between the third and fourth quarters.²⁹

1.4 The role of economic policies

During the course of a pandemic, the government institutions have a pivotal role in navigating the country and its people to safety. The most immediate danger is that caused by the infection making the government's primary goal to flatten the epidemiological curve reducing the rate of infection. The introduction of containment measures, such as social distancing rules, can help with the latter yet they can consequently open the way to the more insidious and lingering dangers caused by the economic effects of the crisis. It quickly becomes evident therefore, that the role that governments must assume in these cases is tricky and requires a sound response that is both balanced and efficient.

This response can greatly vary depending on the type of pandemic, taking for example parameters the morbidity and mortality rate to draw predictions. In the case of lighter pandemics, for example, strict containment measures might unnecessarily increase the economic damage. On the other hand, as evidenced in a study by Smith et al (2009), “In more serious pandemics, the relative economic impact of school closures decreases and the gains from school closure in mitigating the pandemic increase”.³⁰ This type of solution, in fact, should allow to keep the pandemic peak under control and lower its level, allowing schools to reopen later and parents to resume their work, instead of forcing them to stay at home to take care of their children. As for the more severe pandemics, school closures cost less when you consider the gains in terms of victims.

In the case of lighter pandemics, for example, once the peak of the emergency is over, the government could introduce measures to encourage people to resume economic activities, trying to offset the negative effects caused by the panic generated by the spread of the virus. In addition, policies and financial arrangements may be needed to support the businesses and sectors that have been most affected.

²⁹ (Lars Jonung, The macroeconomic effects of a pandemic in Europe – A model-based assessment, 2006)

³⁰ (Richard D Smith, 2009)

In the case of more severe pandemics, in order to stimulate the economy, in addition to measures to maintain the financial stability of businesses and households, the introduction of monetary and fiscal policies will be necessary.

Governments therefore have to make sure such measures well contrast the health risk, without them resulting in a disproportionate economic crisis, and the means by which they can do so is by establishing policies which are proportionate to supply and demand shocks and that they intercept transmission channels by supporting households, businesses and banks, so to mitigate the effects on the circular flow of income. Particularly, there are two type of policies which are applied to mitigate the impact of a serious pandemic:

- Monetary policy

Monetary policy is the series of actions undertaken by Central Banks aiming at influencing money supply in the economy, in order to accomplish pre-determined macroeconomic objectives, such as the managing of inflation, consumption, growth and liquidity. Central banks control money supply through interest rates, forex rates, buying and selling government bonds and through the change in the required reserve ratio for banks.

During a recession, the aim of a monetary policy is that to increase aggregate demand, which can be done by increasing money supply, as this in turn lowers interest rates and stimulates higher consumption and investment spending.

However, monetary policies could play a limited role depending on the level of interest rates present before the crisis, as they could have reached or be near the zero lower bound. The supply shock, that characterises a pandemic, drives prices and consequently inflation up and pushes down real interest rates, making the zero rate constraint less stringent. This leads to the kick-off of an expansive monetary policy, without the need of central banks to lower nominal rates. However, this can be problematic in presence of a demand shock as with nominal rates stuck to zero and with the decrease in inflation, real rates will go up turning the monetary policy into a restrictive one.³¹ In this case, to avoid the contraction of the economic activity, caused by the supply and demand shock, it would then be necessary to apply other measures to provide liquidity to the banking system and to businesses. For example, central banks could relax prudential regulations, provide banks with liquidity and intervene in the bond market to ensure inflow of liquidity to businesses.

³¹ (Monacelli, 2020)

- Fiscal policy

A Fiscal policy is an economic policy which aims at influencing the level of consumption and investment spending made by households and businesses. It does so through changes in public spending and tax revenues.

In the case of pandemics, an expansive fiscal policy could be more effective than a monetary policy, as it would lead to an increase in investments and consumption, moving the GG curve upwards.³²

However, it's important to consider that an extremely aggressive expansionary fiscal policy would further increase public debt and therefore its possible application would depend on the level of debt sustainability and the level of pre-existing debt.³³ Another important aspect concerns the means of intervention, because, depending on the instrument used, there will be different effects. For example, through transfers (e.g. subsidies to companies and unemployment benefits) they do not rage with the reaction of the market, in the same way that forms of public guarantee for financing would rage.

Table 1: Fiscal and Monetary policies

	<u>Fiscal policy</u>	<u>Monetary policy</u>
<u>SARS</u>	<p>Singapore introduced a S\$230 million SARS Relief Package for tourism, transports and retail industries³⁴:</p> <ul style="list-style-type: none"> - Tax reductions for commercial properties - Bridging Loan Programme for SME - Enhanced training grants for tourism courses - Diesel tax reduction for transports - Reduction in aircraft landing fees 	<p>Neutral policy stance of a zero percent appreciation for the trade-weighted Singapore dollar nominal effective exchange rate.³⁵</p>
<u>MERS</u>	<p>Mexican government introduced a set of fiscal measures:</p> <ul style="list-style-type: none"> - Tax reduction for hospitality and tourism - Creation of a special fund for SME and for the promotion of tourism activities³⁶ 	

³² (Luca Fornaro, 2020)

³³ (Óscar Jordà, 2020)

³⁴ (Ministry of Finance and Ministry of Trade and Industry, 2003)

³⁵ (Monetary Authority of Singapore, 2003)

³⁶ (Brito, 2020)

CHAPTER 2

Covid-19 effects on Italian economy in the European Context

2.1 The Covid-19 crisis

In early January 2020, Chinese authorities informed the World Health Organisation (WHO) of a severe upper respiratory tract syndrome rapidly spreading through the city of Wuhan. The majority of people affected were reported experiencing mild to moderate pneumonic complications which could quickly turn into critical or even death for elderly and people with pre-existing health conditions. Furthermore, concerns for what is now known as COVID-19, were amplified by the high morbidity rate of the virus. With numbers of infected and victims multiplying overnight the Chinese government took action by enforcing an unprecedented lockdown on approximately sixty million people across the city of Wuhan and almost all Hubei province. In the meantime, scientific research into this mysterious illness quickly led to the identification of a new type of coronavirus as the responsible pathogen.

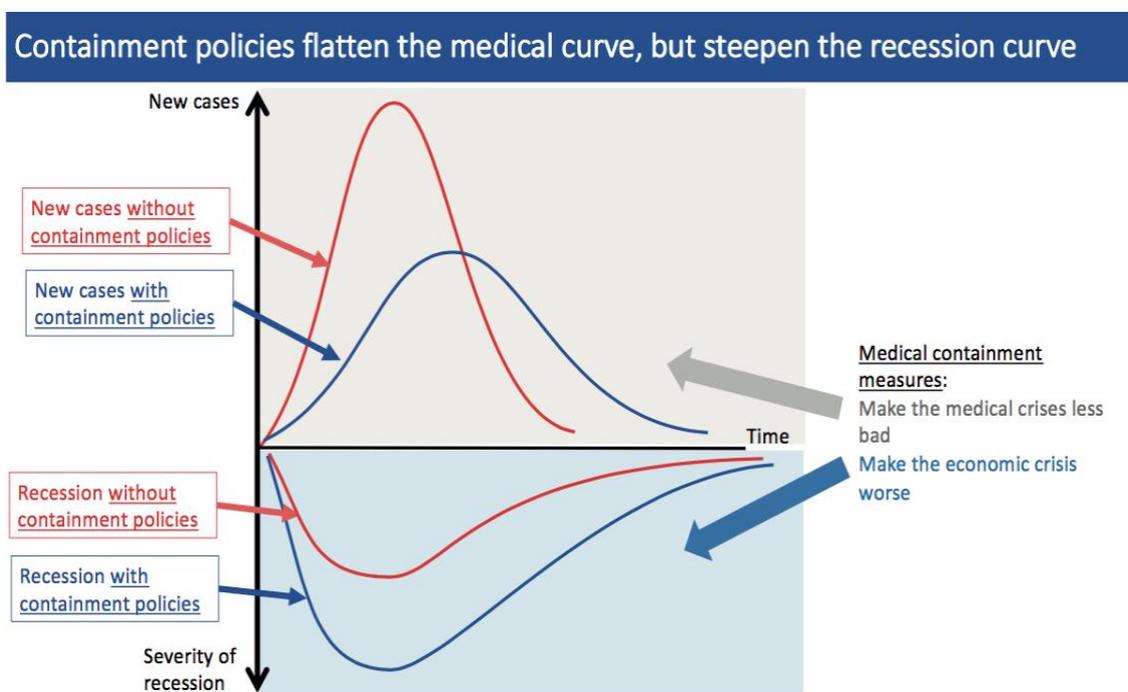
Coronaviruses, so called for their ‘crown’ structure characterized by spikey projections on its outer body, have been known since the 1960s and the International Committee for the Taxonomy of Viruses has established the naming of more than 40 coronaviruses.³⁷ All coronaviruses have a zoonotic origin and they mostly affect animals but in some cases they can jump onto a human host through mutation, recombination and adaptation. Previously to the COVID-19 pandemic, however, only three other coronaviruses - SARS-CoV and MERS-CoV - caused severe enough symptoms to capture the attention of the public and the scientific community, in 2003 with SARS and 2012 with MERS, but most of the time human coronaviruses only cause mild illnesses such as the common cold. For this common origin, COVID-19 shares a range characteristics with its, above mentioned, siblings, such as primarily affecting the respiratory tract and spreading via respiratory droplets produced when the infected individual sneezes or coughs. Symptoms can include fever and a range of pneumonic complications, from cough to shortness of breath, and usually show up in a time frame between two days to two weeks.

The difference between these viruses therefore stands in the velocity of spread and the geographical reach obtained by the COVID-19 virus. Towards the end of January, in fact, the first cases of Covid-19 began to be registered in an increasing number of countries across Europe, thus shifting public

³⁷ (Tyrrell, 1966)

concern on the precarious state of many national health systems. The WHO immediately affirmed the outbreak was a health emergency of international concern and urged member states to take prompt action and implement extraordinary public health measures. From China, the virus spread to Italy first and quickly reached even the most powerful economies in the world, including all of Europe and North America. Only China, the USA, Japan, the UK, Germany, Italy and France together make up 60% of the world GDP.³⁸ Eventually the pandemic also reached emerging economies in April. Overall, the steep infection curves from the affected places highlighted the high morbidity rate of the virus, aggravated by the risk of asymptomatic victims unknowingly spreading the disease, and remarked the need for immediate containment measures aimed at reducing that spread of the illness otherwise resulting in a bottleneck effect for the health systems. In the absence of vaccines, the only way to flatten the epidemiological curve is to diminish the possibility of contact with infected individuals, which was obtained by governments enforcing a concoction of school shutdowns, travel bans, social distancing measures, the introduction of ‘smart working’ where possible, all to reduce the traffic and number of people reversing in public places. During peaks of contagion, lockdowns of different intensities have been inevitably introduced in most countries across the world. Italy, for example, adopted more stringent measures and for a longer period than Germany and Spain.

Figure 4: Recession curve and containment policies



Source: *Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes*

³⁸ (Mauro, 2020)

Needless to say, as reported in Figure 4, such actions undertaken reduce economic activity making the recession a “public health measure”.³⁹ Figure 4 shows in fact the impact of containment policies on the economy, and the inversely proportional relationship that characterises the infection curve and the recession curve, making this a proper trade-off between health and wealth.

From a macroeconomic point of view, the pandemic initially generated a supply-side shock, what economists define as global supply chain disruption, and then consequently caused a simultaneous supply and demand shock. The enforcements of lockdowns forced many factories to shut down and workers to stop going into work, preventing much of the intermediate inputs to reach final producers, this way contracting aggregate offer. Moreover uncertainty that spread with the virus, caused serious concerns regarding health and economics. To respond to the uncertain climate households postponed unnecessary expenses and increased precautionary savings, hence, reducing consumption. The same happened with firms and businesses, who postponed projects and investments, as a response to the decrease in sales. The overall decline in consumption and investments led to considerable fall in aggregate demand.

The uncertainties generated by the health crisis are several and concern various aspects, such as the morbidity rate of the virus, lethality, the ability of the human body to generate antibodies, the ability of the health system to cope with the shock, the effectiveness of vaccines and social distancing measures and the duration of the latter, impact that containment policies will have on the market and the economy, the speed of recovery if the pandemic recedes, impact on businesses and firms and if they will resist such shocks, employment, investments and many other factors. Pointedly Baker et al (2020) capture the effects of uncertainty through three forward-looking indicators, these are the implied volatility of the stock markets, the expectations expressed by market operators in surveys and the frequency with which terms such as ‘policy’ ‘economics’ and ‘uncertainty’ recur in newspaper articles. Through those they estimate a contraction of the US product due for about half to the negative effects generated by the uncertainty on the developments of the Covid-19 pandemic.⁴⁰

Returning to the pandemic, the relative supply and demand shocks could be drastic for the economy if the right economic policies are not introduced. Particularly, Guerrieri et al (2020) argue that effects of the pandemic, or else the shutdowns, firm exits and layoffs may have the feature of Keynesian supply shocks, meaning that the aggregate demand changes sparked by the supply shocks are greater than the actual shocks. Specifically, negative temporary supply shocks that in turn lower output and

³⁹ (Mauro, Mitigating the COVID Economic Crisis: Act Fast and Do Whatever It Takes, 2020) pg 8

⁴⁰ (Terry, 2020)

employment can be somewhat considered an efficient response, however in the case of Keynesian supply shocks, the contraction in output and employment might be larger than the supply shock itself and strong enough to shut down most of the economy.⁴¹ While Fornaro and Wolf (2020) in their study state that the pandemic would depress global demand by amplifying the initial shock on supply. This would then be followed by a long period of low growth and high unemployment, caused by agents' pessimistic expectations, and thus leading to a stagnation period and an L-shaped recovery.⁴²

The Covid-19 shock might be the hardest shock the world has witnessed after the Great depression, and could be compared to the financial crisis of 2008 for the way it spread, that is, without borders. The financial crisis caused a sudden fall, considered the steepest and deepest fall in world trade ever recorded in history since the Great Depression, which required the use of monetary and fiscal policies.⁴³ Yet, in 2008, the crisis caused direct damage to supply, especially on the banking and financial side and the industrial damage was due to the recession rather than the shock of the crisis itself. On the other hand, the pandemic caused both a supply and demand shock simultaneously. Furthermore, the restrictions on circulation and social distancing, that today directly affect the supply and demand of some sectors did not occur during the financial crisis. This is to say that the Covid-19 crisis is by far the worst crisis of the last ninety years.

Many are the studies that try to quantify or predict the overall economic effects of the crisis, however this is hard to do as the future is still very uncertain. Moreover, there is a lack of events of this calibre that give sufficient empirical guidance and the spread of the illness is difficult to predict, many fear a third wave. Just in November the effectiveness of some of the Covid-19 vaccines, such as *Pfizer-BioNTech* and *Moderna*, have been announced and in late December many countries started their roll-out. Nonetheless, predictions say it may take over a year to vaccinate a sufficient share of the population and the restrictions and social distancing measures might stay as long, despite they may be gradually eased as the number of infected people decreases.

2.2 Macroeconomic impact of the crisis in Europe

The pandemic has battered the European economy especially in the first half of the year. We can capture some of its effects by looking at three indicators: composite leading indicators (CLI), the economic sentiment indicator (ESI) and the economic policy uncertainty index (EPUI).

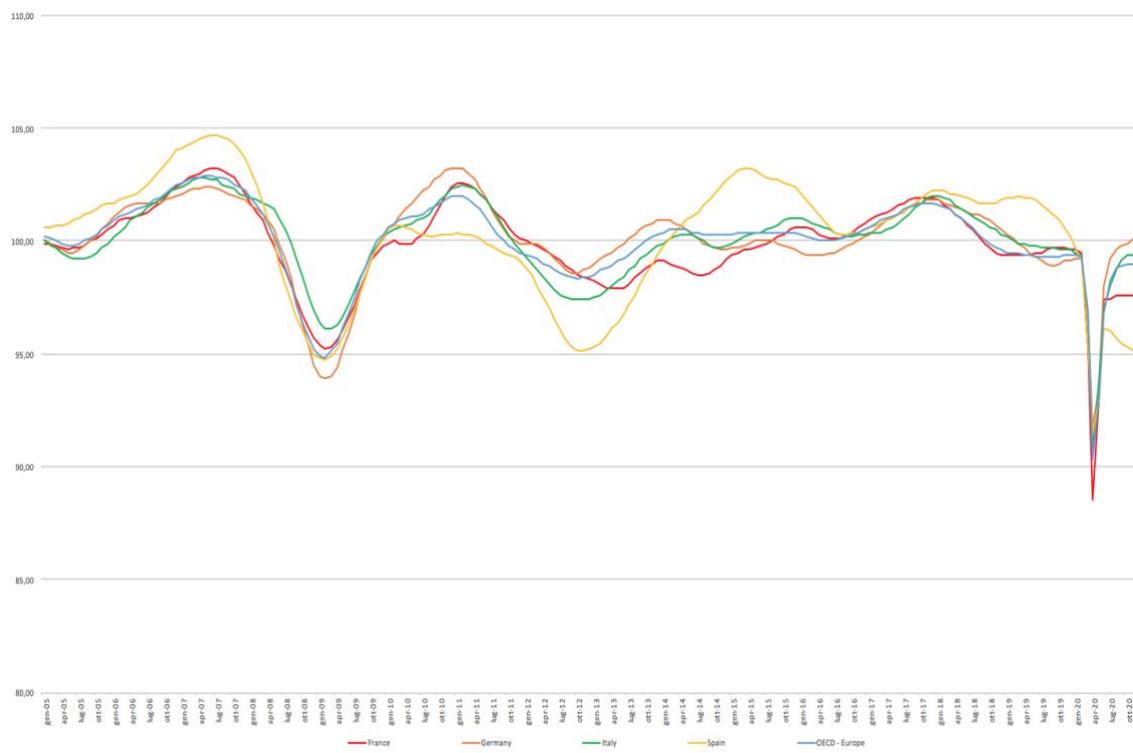
⁴¹ (Werning, 2020)

⁴² (Luca Fornaro, Coronavirus and macroeconomic policy, 2020)

⁴³ (World Trade Organization, 2020)

Composite leading indicators provide qualitative information and anticipate turning points in business cycle, such as deviation of economic activity from the potential long-term levels. These indicators recorded a sharp decline for the economies affected by Covid-19 in the first months of 2020, marking a negative deviation from the long-term level of activity, followed in the second quarter of the year by a rebound which, among the major countries of the euro area, is more pronounced for Germany and less pronounced for Spain.⁴⁴

Figure 5: Composite leading indicators (CLI)- monthly data



Source: OECD <https://data.oecd.org/leadind/composite-leading-indicator-cli.htm>

The economic sentiment indicator shows a drastic decline in the months of March and April due to the containment measures enforced across Europe. The second quarter of 2020 however shows slight signs of recovery, that concerns 30% of combined losses of March and still put them 28.2 points below February levels, detected starting from the easing of containment measures.⁴⁵ Italy, recorded a more significant decline (-30.1), having been hit earlier by the pandemic.⁴⁶

Finally, the indicators that reflect the uncertainty about economic policy and the perception that any policies to combat the crisis are insufficient, transitory or prelude to a greater tax levy in the future,

⁴⁴ (OECD, Composite leading indicator, 2021)

⁴⁵ (European Commission, 2020)

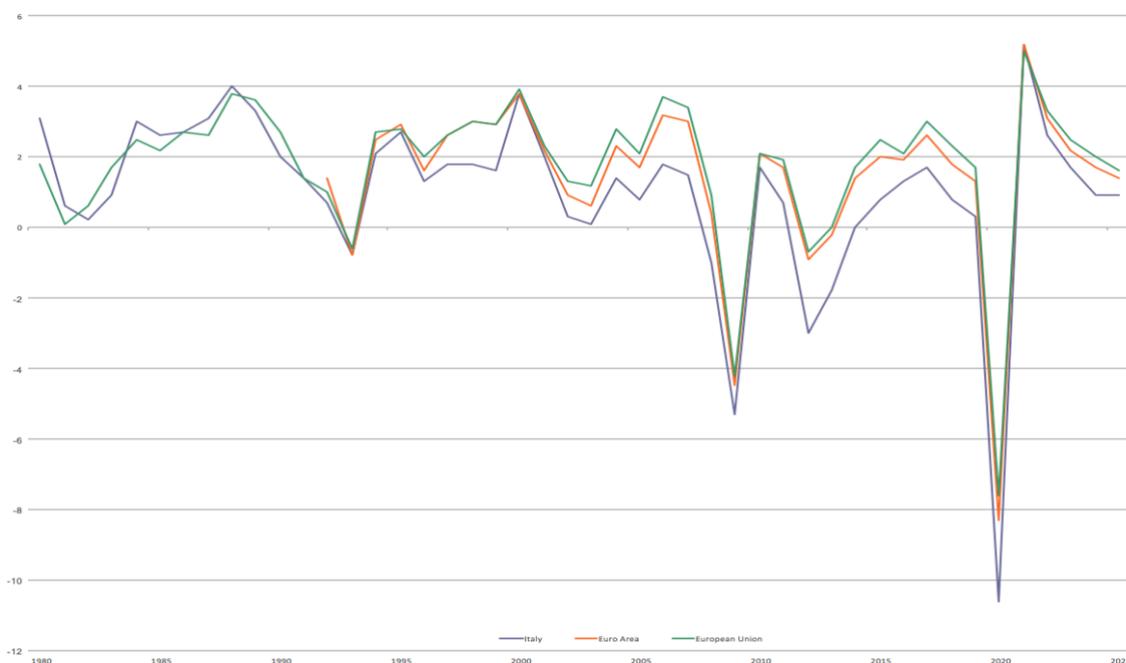
⁴⁶ *Ibidem*

have also moved in the same direction.⁴⁷ After the peak in March, which in Italy largely exceeded the levels recorded during the 2008 global financial crisis, the indicators followed a declining trajectory.⁴⁸

The introduction of containment policies throughout most European countries has caused a sudden and deep fall in economic activity, which led to a downward revision of economic growth estimates. However, the impact of the crisis resulted uneven across countries due to differences in policy responses, in the duration and intensities of the containment measures introduced and in the way economies are structured, or else their dependence on the hardest hit sectors. For example, countries that are highly dependent on tourism or countries depend on sectors with composite value chains are probably the ones that suffered the most the effects of the crisis.⁴⁹ Furthermore, the pandemic heavily affected SMEs, as they mostly operate in contact-intensive sectors, this consequently had a huge impact on the European economy as they account for one half of total output.⁵⁰

According to Eurostat, EU's seasonally adjusted GDP in the first quarter of the year underwent a drop of 3.3% and of 11.8% in the second quarter.⁵¹

Figure 7: Real GDP growth annual percentage change



Source: IMF https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/ESP/EU/EURO

⁴⁷ (FRED, 2021)

⁴⁸ (FRED, 2021)

⁴⁹ (INTERNATIONAL MONETARY FUND, 2020)

⁵⁰ *Ibidem*

⁵¹ (Chris Kushlis, SARS Is Not a Model for Coronavirus, 2020), (Eurostat, 2020)

The reduction in GDP in the first two quarters saw a decline in government final expenditure and external balance, yet it was mainly given by the reduction in households' consumption which accounted for -6.3%, probably due to most countries being in lockdown and households' higher propensity to save given the uncertain times, investments strikingly contributed as well to the reduction in economic growth by -3.4%.⁵² Overall the IMF estimated an annual percentage change for 2020 of -7.6 of real GDP for the European Union, consistently the OECD estimates an annual reduction in real GDP of -7.5.⁵³

The decline in economic activities also had its effects on the labour market. The employment quarterly rate fell at unprecedented levels, especially in the second quarter, with larger decreases for Spain, Ireland and Hungary.⁵⁴ However the losses in terms of people employed could have been greater compared to reduction in economic activity and have been contained thanks to the policy responses put in place by Europe and its member countries, the keener fall in hours worked highlights the effective use of such schemes.⁵⁵

The beginning of the second half of 2020 was characterised by the initial phase of recovery, given the decrease in the number of infected cases and the easing of containment measures throughout European countries, which was also supported by the economic policies provided to member States by the European Union. However, many countries in late October and November have found themselves re-introducing confinement measures given the worsening of the number of infections. These will probably weigh on the recovery that started in the summer months characterised by a strong rebound of economic activity, yet this time measures are better addressed and though they will still have negative effects, especially on consumption and investments, they are expected to be not as strong as the ones that marked the spring months.

Economic activity in 2021 is predicted to improve with the introduction of vaccines and the consequent gradual easing of containment measures, with a better adaptation of the health system and economic agents to the pandemic environment and with the introduction of some of the support tools provided by the EU to Member States. Notwithstanding the climate will remain uncertain, moreover the less beneficial trading relationship between the EU and the UK will put further pressure on both economies, although a deal has been reached.

⁵² *Ibidem*

⁵³ (International Monetary Fund, s.d.), (OECD, 2020)

⁵⁴ (European commission, 2020), (Eurostat, 2020)

⁵⁵ (European commission, 2020)

Table 2: Effects of the Covid-19 crisis in Italy, the Euro-area and in the USA

	<u>Italy</u>	<u>Euro-area</u>	<u>USA</u>
<u>GDP losses 2020</u>	-10.6%	- 8.3%	- 4.3%
<u>Unemployment</u>	11%	8.9%	8.9%
<u>Inflation</u>	0.1%	0.1%	2.1%

Source: International Monetary Fund

2.3 Macroeconomic impact of the crisis in Italy

Italy is one of the hardest hit countries in Europe in terms of number of infections and deaths and in economic terms. This is due to Italy being the first country after China in which the virus spread. The measures taken to contain the pandemic have immediately been very strict, starting from March, they have firstly involved the closure of schools and public events, after a few days a proper lockdown was introduced and the whole of Italy was declared red zone. This consequently had a huge impact on the tertiary sector, with the closure of many commercial activities, and later, starting on the 28th of March, also on the manufacturing industry with the stop of non-essential industrial activities.⁵⁶ The measures have been gradually eased starting from May until June 3rd, when the limits on the mobility between regions were lifted. In August there was a progressive increase in the number of infected which led to the introduction of new containment measures in November. Such measures are however lighter than the ones introduced in March and saw Italy divided by regions according to their contagion index Rt.

The Italian economy showed signs of lower growth right before the pandemic spread in the country. In 2018 GDP showed a growth of +0.9% and in 2019 of +0.3%, this stagnation period was mainly due to a drop in domestic and foreign demand.⁵⁷ Therefore, the spread of the pandemic occurred in a critical period for the Italian economy and the virus containment measures introduced in March and April have had dramatic effects threatening the stability of the system. Such measures, according to the data published by the Istituto Nazionale di Statistica (Istat), have involved 34% of production and 27,1% of value added and have had both direct and indirect effects, the former linked to the interruption of production activities and the latter linked to the disruption and worsening of inter-

⁵⁶ (Confcommercio Mantova, 2020)

⁵⁷ (Confindustria, 2020)

sector relations.⁵⁸ With the gradual easing of containment measures demand started rising and the economy slowly started recovering in May and June. This marked an improvement in production activities, the decline recorded in April narrowed from 42,5% to 20% in May, relative to 2019.⁵⁹ The service sector showed a recovery as well with the increase of domestic tourism, however still suffered the loss of foreign tourism.

The labour market inevitably suffered the effects of the Covid-19 crisis which materialised and became more evident in the second quarter of the year. As a matter of fact, the stop of production activities has led to the contraction of the employment by -101 thousand units (-0.4% qoq) in the first quarter and by -470 thousand units (-2% qoq) in the second quarter.⁶⁰ The number of people employed, relative to the second quarter of 2019, fell by -841 thousand units, which equates to a drop of -3.6%.⁶¹ Furthermore, the emergency in the second quarter contributed to the increase in the share of inactive workers, mostly composed by the potential labour force rather than people not actually looking for a job. This was given by the impossibility of conducting actual job searches during the lockdown which resulted in a “fake” reduction in the unemployment rate.⁶² The drop in the unemployment rate, in fact, corresponds to a drop in the participation rate. In March the number of unemployed started emerging till the unemployment rate reached 9.7% in August and the inactivity rate fell to 35.5%.⁶³

A study conducted by Banca Italia shows that the female employment and the youth employment, have been the most affected by the crisis. This is mainly due to their significant presence in the hardest hit sectors, such as tourism and services in which women make up about three thirds of employees, but it also due to the wide spread of forward contracts especially among individuals between 15-24 years old.⁶⁴ The pandemic, in fact, having had a stronger impact on sectors that make greater use of fixed-term work, prevented people from getting contract extensions or transformation into permanent ones. Indeed, the fall of fixed term employees was of -677 thousand units (-21.6% yoy), and mainly concerned people working in wholesale and retail trade and in hotel and restaurant industry.⁶⁵

The employment losses have been somewhat mitigated thanks to the introduction of several measures by the government. These included the use of leave (e.g. parental leave) and the disposal of holidays,

⁵⁸ (Istat, 2020)

⁵⁹ (Istat, 2020)

⁶⁰ (finanze, 2020)

⁶¹ *Ibidem*

⁶² *Ibidem*

⁶³ *Ibidem*

⁶⁴ (Banca d'Italia, 2020)

⁶⁵ (Istat, 2020)

the income supplements through the extension of the CIG redundancy fund, introduced by the “*Cura Italia*” decree, and the prohibition of employment dismissals.⁶⁶ However, they mainly contributed to the support of employment for what concerns permanent contracts, but the crisis still interfered with the creation of new employment relationships and the extension of contracts for fixed-term workers.

The third quarter of the year showed more positive signs linked to recovery of economic activity. The employment rate in fact increased to 57.9%, recording an increase of +0.2 points relative to the second quarter.⁶⁷

Moreover the effects on the labor market also reversed on households’ disposable income which sharply declined in the first quarter, however the gradual recovery of economic activity and the use of income support tools for workers and firms managed to contain the fall of disposable income and of households’ purchasing power as well.⁶⁸ Following Banca Italia’s study, in April and May over half of the population in Italy has suffered a decline in income due to the containment measures adopted. Towards the end of summer, families reported a slight improvement in their economic conditions, which, however, still remained well below the levels prior to the emergency. Consumer choices showed to be highly influenced by the progression of the pandemic, the Banca Italia investigation state that 60% of households would stop shopping for non-essential goods and services.⁶⁹

In addition to considering the impact the pandemic has had on households in economic terms, it is important to consider the impact it has had on Italian firms. Cerved states that in 2020-2021 Italian businesses might end up losing between 250 and 650 billion in revenue with hospitality and automotive suffering larger losses. The economic consequences of the health emergency will increase the liquidity needs of companies, especially those facing high fixed costs that will contribute to a persistent decline revenue. Moreover, the longer the crisis lasts, the higher the risk of insolvency for companies with outstanding debt. In this regard, Cerved estimated a probability of default for companies that ranges between 4.9%, in the case of a soft scenario, and 10.4% in case of a hard scenario.⁷⁰

⁶⁶ Cassa Integrazione Guadagni (CIG) is an instrument through which the government intervenes in support of companies forced to contract or suspend their activities due to crisis situations or difficulties defined by the law. It consists in the provision, managed by INPS, of an indemnity in lieu of remuneration in favor of employees suspended from work or subject to a reduction in working hours.

⁶⁷ (Istat, 2020)

⁶⁸ (Istat, 2020)

⁶⁹ (Banca D'Italia, 2020)

⁷⁰ (Cerved, 2020)

In the first two quarters of 2020 the double supply and demand shock has had drastic effects on the Italian economy, which can be observed by looking at the unprecedented GDP contraction. Relative to the previous year it decreased by 17.9 percentage points.⁷¹ In the third quarter instead, it showed a good recovery of +15.9% on a quarterly basis, according to the data published by Istat.⁷² We can take a closer look and analyse how the restrictive measures generated by the pandemic outbreak and the consequent spread of uncertainty and fear affected consumption, investments and net exports:

The anxiety and concerns about the future and the decline in households' disposable income indeed resulted in more prudent consumer choices and in a rather higher propensity to save. Therefore, consumption underwent a shift mainly towards necessary goods, this led to a greater drop in durable goods rather than semi-durable and non-durable ones. Overall the fall in consumption in the first two quarters and on a yearly basis reached 13.4%.⁷³

For what concerns the third quarter consumer spending marked a recovery and data shows an increase in spending for services and durable goods. For 2020 however, a sharp fall in consumption is expected, as well as increase in households' propensity to save, while for 2021 households are expected to increase their spending, yet this strongly depends on the way the crisis unfolds.⁷⁴

Investments as well underwent a drop of 22% in the second quarter of 2020 relative to the previous year, which involved transports and construction to a greater extent, but included all types of investment goods.⁷⁵ The third quarter recorded a strong increase in investments, that however did not make up for the losses that previously occurred. The data for investments could improve in 2021 depending on the measures undertaken by the government, that could favour investment spending.

International trade flows of goods and services are likely to significantly reduce given the shocks to the countries' production, demand, supply chain and human flows. Therefore, net exports also suffered the effects of the crisis, also due to the disruption of global value chains. Italy is strongly dependent on exports and consequently it hardly felt the effects of contractions in international trade. Istat data for the month of May on a yearly basis show a 35% decline for imports and a 30% decline for exports, that are however slightly more positive compared to April 2020.⁷⁶ Despite this, they

⁷¹ (Ministo dell'economia e delle finanze, 2020)

⁷² (Istat, 2020)

⁷³ (Ministo dell'economia e delle finanze, 2020)

⁷⁴ (Istat, 2020)

⁷⁵ (Ministo dell'economia e delle finanze, 2020)

⁷⁶ (Istat, 2020)

showed a little recovery in the following months and a gradual recovery for 2021 is expected with respect to both imports and exports.⁷⁷

To conclude the effects of the crisis have already been catastrophic and could have even worse effects in the absence of adequate policy responses, especially in the case of further pandemic waves. These, in fact, could result in the growth of insolvencies and in the triggering of a vicious circle of transmission of the effects of the crisis through 'real' channels, thus affecting aggregate demand, and financial channels that would prevent households and businesses access to credit, restraining and slowing down the path to recovery.

⁷⁷ (Istat, 2020)

CHAPTER 3

European policies in support of the Italian recovery

3.1 The EU responses to the crisis

To support the economic recovery following the Covid-19 pandemic, the leaders of the European Union agreed and then adopted a series of measures aimed at protecting people health and well-being.

The EU response to Covid-19 was divided into four key points, highlighted as follows:

- reduce the spread of the virus
- grant the supply of medical materials and equipment
- promote and boost research on therapies and vaccines
- support and shield employment, businesses and the economy

The EU response is then structured on several levels, ranging from the economic, to the health and to the social level.

Form a health and social point of view, EU leaders also agreed to continue the effort by focusing on the use of rapid antigen tests, cross-border contact tracing, adoption of specific quarantine rules and the development, production and dissemination of vaccines. Regarding the strategy adopted by the EU for vaccines, the European Commission has supported the efforts and increased the safe and effective vaccines' development and availability. To date, the use of two Covid-19 vaccines has been authorised in the EU following the green light positive of the European Medicines Agency. On 21 December 2020, *BioNTech and Pfizer*, becomes the first Covid-19 vaccine authorized in the EU.⁷⁸ On January 6, 2021, conditional marketing authorization was granted by the European Commission also for the Covid-19 vaccine developed by *Moderna*, making it the second authorized vaccine in the EU.⁷⁹ For what concerns *BioNTech-Pfizer* and *Moderna* vaccine, the contracts, entered into by the Commission, allow the purchase of the vaccines by all EU member states, as well as the donation to low- and middle-income countries or the redistribution to European countries. Moreover, since the beginning of the state of emergency following the spread of Coronavirus, the EU has also committed itself to guaranteeing the supply of personal protective equipment such as masks and sanitizing products, with the aim of increasing the supply of all necessary equipment.

⁷⁸ (ANSA, 2020)

⁷⁹ (ANSA, 2021)

From an economic point of view we can divide the responses to the health crisis in monetary and fiscal policy.

i. Monetary policy

Central banks all over the world immediately intervened with monetary policies so to stabilise the markets and create the necessary conditions to ensure the correct policy transmission mechanism to the real economy. They used both conventional and non-conventional tools also depending on their reference interest rates levels. Particularly, the European Central Bank (ECB), to ensure liquidity to the private sector in the Euro area, having had very low interest rates for some time, had to recur also to the use of non-conventional tools.⁸⁰

Quantitative easing, aimed at stimulating the economy, represents one of the different ways in which the Central Bank intervenes in the economic-financial system by increasing the debt currency in circulation. The ECB has provided an additional 120 billion euros in addition to the 20 billion euros per month to the pre-existing *Asset Purchase Program* (APP), which consists on the purchase of bonds issued by non-financial companies of the euro area countries, public securities issued by euro area countries, securitized securities and covered bank bonds.⁸¹

On June 4th 2020, the ECB further increased its purchases of debt for the pandemic emergency, increasing the 'PEPP' (*Pandemic Emergency Purchase Program*), which initially amounted to 750 billion euros, by 600 billion euros and by 500 billion euros in December, bringing the total to 1850 billion euros.⁸² The PEPP was born on March 18, 2020 and was presented for the first time by the ECB following an extraordinary meeting called by surprise.⁸³ This program represents a temporary purchase tool for Greek government bonds and the securities covered by the APP, it was created with the aim of stemming the economic collapse, caused by the rampant pandemic situation, and the growing risk of deflation, by preserving favourable financing conditions in order to reduce uncertainty and boost confidence, encouraging investments and consumer spending. A total liquidity injection of 1850 billion euros, which will allow Member States to pay lower interest rates, allowing banks to inject more liquidity into the European economic ecosystem. The

⁸⁰ The objectives set by the European Central Bank are precisely: helping the economy to absorb the shock caused by the current crisis; keep the cost of financing affordable; support access to credit by businesses and households; ensuring short-term worries don't block credit; increase the financing capacity of banks; preserve financial stability through international cooperation

⁸¹ (European Central Bank, 2020),

⁸² (European Central Bank, 2021)

⁸³ (Banca D'Italia, 2020)

purchases with the PEPP have now been extended to March 2022 and the time period within which to reinvest the principal repaid on securities maturing under the PEPP has been extended to the end of 2023.⁸⁴ It is expected that over 2020-2021 the ECB's sovereign bonds purchases will represent roughly 85 percent of the euro area's projected fiscal deficit of about €1.7 trillion.⁸⁵

Furthermore, several programs were launched to support credit to businesses and households by increasing the liquidity available to credit institutions. Specifically these include *longer-term refinancing operations* (LTRO), *targeted longer-term refinancing operations* (TLTRO III) and *pandemic emergency longer-term refinancing operations* (PELTRO). LTRO are new longer-term bank refinancing operations that provide immediate liquidity to the banking sector at a cheaper cost than the previous ones; TLTRO are a targeted longer-term refinancing operations aimed at favoring the disbursement of bank credit to the real economy, at a lower cost and for a higher total amount of funds, this will provide banks with enough liquidity to extend loans with beneficial lending terms to companies and households. PELTRO were introduced to maintain adequate levels of liquidity in the banking system even beyond the term of LTRO.

To provide capital relief to banks, the ECB will relax temporarily the level of capital defined by the *Pillar 2 Guidance* (P2G), the *capital conservation buffer* (CCB), the *liquidity coverage ratio* (LCR) and the *countercyclical capital buffer* (CCyB), by conceding banks to operate below such levels.

To prevent markets from becoming unstable, following the higher demand for foreign currency assets drove by the heightened uncertainty, Central banks have also established currency swap lines. Such lines will allow one country's central bank to swap national currency reserves with those of another central bank. This way central banks will be able to cope with the higher customer demand even if they do not hold enough foreign exchange reserves.

The measures launched by the ECB have helped to ease the tensions in the financial markets caused by the uncertainty about future scenarios and the large amount of newly issued government bonds. The inflation rate is expected to remain below the 2% target set by the Central Bank for a long time, since the upward pressures attributable to the supply-side shock should be more than offset by the downward pressures linked to the contraction of the demand and expectations of

⁸⁴ (European Central Bank, 2020)

⁸⁵ (INTERNATIONAL MONETARY FUND, 2020)

further decline. Furthermore, the ECB will keep unchanged or will further reduce the rate on loans (zero) and that on bank deposits (-0.50%), until inflation firmly approaches 2%.⁸⁶

In January, the ECB bought another 53 billion euros of public and private securities with its PEPP pandemic crisis program, the cumulative total of which thus exceeded 810 billion euros.⁸⁷

Table 3: ECB objectives and Instruments

ECB Objectives	Instruments
Helping the economy bolster and absorb the shocks caused by the Covid-19 crisis	Pandemic emergency purchase programme (PEPP)
Keep the cost of financing affordable	Keeping interest rates at historically low levels
Support access to credit by businesses and households	Increased liquidity to banks (TLTRO, PELTRO, Collateral easing measures)
Ensuring short-term worries don't block credit	Additional longer-term refinancing operations (LTRO)
Increase the financing capacity of banks	Capital and Operational relief to Banks
Preserve financial stability through international cooperation	Swap liquidity lines

Source: <https://www.ecb.europa.eu/home/search/coronavirus/html/index.it.html>

ii. Fiscal policy

In addition to the monetary policy responses adopted, fiscal policy responses, to stem the devastating effects of the Covid-19 crisis, didn't lack. Indeed, the European Union has activated for the first time the safeguard clause that allows the suspension of the *Stability Pact* to deal with the drastic effects caused by the coronavirus pandemic. This will allow member States to inject cash into their economies without the limits set by the *Stability Pact*.

On 23 April 2020, EU heads of state and government introduced *SURE (Support to mitigate Unemployment Risks in Emergency)*, a 540 billion dollar program created with the aim of avoiding a drastic rise in unemployment during the emergency, helping workers keep their jobs.⁸⁸

⁸⁶ (Soldi Online, 2021)

⁸⁷ (Il Messaggero, 2021)

⁸⁸ (Consiglio Europeo, 2020)

The main aim of the instrument is therefore to preserve jobs and the production capacity and human capital of companies, by reducing the cost of company labour. It will make loans of up to € 100 billion available to the Member States to cover part of the costs associated with the creation and extension of national schemes to reduce working hours and layoffs.⁸⁹ The loans of this new European employment support instrument have been granted by the EU to member states with convenient conditions, and will allow countries in difficulty to face the increases in public spending necessary to support the labor market. EU countries will therefore be able to benefit from low financing costs; the loans will be used on a voluntary Member State guarantee scheme vis-à-vis the EU. So far the European Commission has issued 53.5 billion euros Social bonds in order to finance SURE, these consist in 5,10 and 15-year bonds and 90.3 euros have already been approved by the Council to support financially 18 Member States.⁹⁰

On the same day, the European Council has also agreed to make part of the resources of the *European Stability Mechanism* (ESM) available to countries most in need and so to establish a new emergency credit line within the ESM called *Pandemic Crisis Support*.⁹¹ The ESM represents a mechanism aimed at maintaining the financial stability of the euro area by issuing loans under very strict conditions with the aim of helping the countries in difficulty. This is realised on the basis of an existing precautionary credit line (ECCL); the loans available to all Eurozone countries will be granted up to the two percent of GDP, for a total value of 240 billion euros.⁹² The ESM will be used only by states that ask for it to be activated to respond to the pandemic emergency and the only condition for access to it is that the resources are spent exclusively for health costs directly or indirectly related to the COVID-19 emergency. In case of use of the PCS, the *Early Warning System* (EWS) is a monitoring tool, that will be activated, with which the ESM controls the short-term liquidity situation, access to markets and the medium-long term sustainability of the government debt. Member States have until December 2022 to apply for credit and repay loans, at very low rates, within 10 years.⁹³ In Italy, the aid could reach up to 37 billion euros; the conditions are the most convenient currently available on the market: ten-year maturity, an annual rate of 0.1%, a one-off activation fee of 0.25% and an annual management cost of 0.005%.⁹⁴

⁸⁹ (Commissione Europea, 2020)

⁹⁰ *Ibidem*

⁹¹ (Parlamento Europeo, 2020)

⁹² *Ibidem*

⁹³ *Ibidem*

⁹⁴ *Ibidem*

On May 27, 2020 the European Commission, the European Parliament and EU leaders agreed on a 750 billion European economic recovery plan renamed '*Next Generation EU*', also called *Recovery Fund*, which includes 250 billion loans and 500 billion euros grants.⁹⁵ The new long-term budget will enhance and strengthen flexibility mechanisms to ensure that unforeseen needs can be met. It will therefore be adapted not only to current realities, but also to the uncertainties of the near future. Particularly this instrument holds a strong political value, it is the first time that members of the EU have created a system of transfer of resources between countries to help those that have been most affected by the crisis. Italy is entitled to the largest amount of *Recovery Fund* grants and loans, overall, the Italian “share” is approximately 209 billion divided into 81.4 billion in subsidies and 127.4 billion in loans.⁹⁶ Seven are the instruments that make up the NG-EU. The broadest instrument is the '*Recovery and Resilience Facility*' (RRF) which amounts to 672.5 billion euros of which 360 billion in loans and 312.5 in grants. In order to access the funds of the RRF, member countries will have to present a *Recovery and Resilience Plan* (RRP), that must follow the Commission guidelines.⁹⁷ The plan, in fact, has to contain reforms and investments countries intend to carry out, however such have to pursue four main objectives. They have to alleviate the economic and social impact of the crisis, promote the Union cohesion on an economic social and territorial level, strengthen social and economic resilience and finally support the green and digital transition. The commission made clear that at least 37% of resources must be directed towards climate objectives and 20% towards digitalization, an important and complicated issue as regards Italian companies that are far behind for what concerns digitalization.⁹⁸ Just over three companies out of a hundred have reached technological maturity in Italy according to Istat.⁹⁹ Furthermore, the plan is expected to contribute to boosting growth and job creation and it's fundamental that the countries will use the funds, put in place by the EU, for public and private investments, as they should be limited time disbursements able to generate higher revenues in order to balance the expenses. For the transfer of funds it will be necessary for countries to achieve specific objectives that can be measurable by the Commission. This tool is particularly important for European growth and the sustaining of high expenses due to fiscal support put in place. A stylised simulation of Next Generation EU shows that by 2024 it could raise real GDP levels by around 2%, compared to a baseline scenario, and that it would create up to 2 million additional jobs.¹⁰⁰

⁹⁵ (Commissione Europea, 2020)

⁹⁶ (Parlamento Europeo, 2020)

⁹⁷ (Commissione Europea, 2020)

⁹⁸ (European Commission, 2020)

⁹⁹ (GRIMALDI, 2020)

¹⁰⁰ (Maarten Verwey, 2020)

Table 4: Next Generation EU Partition

Recovery and Resilience facility (RRF)	€672.5 billion
of which loans	€360 billion
of which grants	€312.5 billion
ReactEU	€47.5 billion
Horizon Europe	€5 billion
InvestEU Fund	€5.6 billion
Rural Development	€7.5 billion
Just Transition Funds (JTF)	€10 billion
RescEU	€1.9 billion
TOTAL	€750 billion

Source: https://ec.europa.eu/info/strategy/recovery-plan-europe_en

In addition to the abovementioned instruments, the European Investment Bank (EIB) set up a guarantee fund for the support of European small and medium sized enterprises (SME) for the amount of 25 billion euros, this fund could mobilise up to 200 billion euros.¹⁰¹

To support Member States in overcoming the crisis, the European Union has allowed less rigidity in the application of EU rules on state aid, on public finance and budget policies and in the use of structural funds. Thanks to the latter provision, Member States will be able to transfer resources between different European funds according to the needs of the territories.

Part of the EU funds will be used; around 37 billion euros will go to support health systems and small and medium-sized enterprises (SMEs) and up to 28 billion euros of structural funds, coming from the 2014-2020 national allocations not yet assigned to projects, will instead be used to strengthen the response of countries to the crisis.¹⁰²

Finally, € 800 million coming from the EU Solidarity Fund will be used to support the States most heavily affected, by extending the breadth of the fund to public health crises.¹⁰³ The EU initiative also includes said for farmers and fishermen and a review of the *Fund for European Aid to the Most Deprived* (FEAD). The latter consists of a series of interventions promoted by EU countries in order to provide the poor with essential items for personal use (eg. Food, clothing etc.). National authorities

¹⁰¹ (European Investment Bank, 2020)

¹⁰² (Parliament, 2020)

¹⁰³ *Ibidem*

can also support non-material assistance to the destitute to help them integrate better into society by taking the first steps out of poverty and marginalization.

The direct and inevitable consequences that stem from the impact of the pandemic is the ones we have on public finances. The extraordinary spending programs launched and the reduction of tax revenues, due to the overall decline in taxable income, increase public debt. According to IMF's estimates for the government gross debt as a percentage of GDP for 2020 for the Euro Area and the European Union are respectively 101.1 and 95.3 and for Italy 161.8, while for 2021 they expect them to slightly decrease to 100, 94.4 and 158.3.¹⁰⁴ Public debt growth increases the risks linked with debt financing, so far low interest rates and purchases of securities by the Euro have helped manage it. Once ECB interventions will cease it's important that the debt/GDP ratio of the member States will fall at a both steady and good pace. An important parameter for assessing a country's exposure to refinancing risk is the percentage of debt held by foreign investors. For example, according to data published by Prometeia, in 2019 53% of Italian debt was in the hands of Italian operators and 27% in the hands of foreign operators.¹⁰⁵ Furthermore, the government budget deficit in the Euro area is expected to increase to 8.8% of GDP in 2020 from 0.6% in 2019, however the gradual easing of containment measures is expected to improve the overall economic outlook leading to the decline of the deficit ratio to 6.4% and 4.7% in 2021 and 2022 respectively.¹⁰⁶ The high levels of public debt and government deficit indicate that it is crucial that member States assure their medium-term fiscal sustainability, while promoting their economies' recovery. The Commission states that the countries should "In line with the general escape clause, take all necessary measures to effectively address the pandemic, sustain the economy and support the ensuing recovery" and "When economic conditions allow, pursue fiscal policies aimed at achieving prudent medium-term fiscal positions and ensuring debt sustainability, while enhancing investment".¹⁰⁷ Therefore, in order to face the crisis it is necessary that the instruments used by member States correspond to a high level of growth.

Precisely in the regard of debt, many times it has been talked about the creation of the so-called *Eurobonds*, or else a bond issued jointly with Europe. Many started talking about this debt-sharing instrument precisely because of the evident need to respond to an exogenous and common shock. However, many countries have showed to be strongly reluctant towards it, as they fear the risk of most indebted countries moral hazard. Many have expressed their contrasting opinions on such instruments that could in some way be considered more effective than other monetary policy

¹⁰⁴ (International Monetary Fund , s.d.)

¹⁰⁵ (E. Bergianti E R. Parrella, 2019)

¹⁰⁶ (European Commission, 2020)

¹⁰⁷ (Stephan Haroutunian, 2020)

operations, as they could better contribute to a stable market and as they would provide lower costs for member countries to meet their financial needs.

3.2 Italian responses to the crisis

With the support of the EU, in Italy, in the course of 2020, the Government and Parliament have allocated a considerable volume of financial resources to tackle the Covid-19 emergency: over 108 billion euros in terms of net debt raised through four subsequent budget variances.¹⁰⁸

It was an action launched from the early days of the crisis with the *Cura Italia Decree*, which provided for urgent measures to protect the health of citizens with the overall the strengthening of the National Health System and to support workers and businesses affected by the crisis. Specifically, the *Cura Italia Decree*, signed by the President of the Republic Sergio Mattarella in mid-March 2020, authorized the issuance of government bonds for an amount of up to 25 billion euros for the entire year for the for the emergency.¹⁰⁹

A few weeks later, with the *Liquidity Decree*, new and wider measures were envisaged to favor the liquidity of households and businesses. To facilitate the restart of the Italian production system, it was decided to transform the Guarantee Fund for small and medium-sized enterprises into an instrument capable of guaranteeing up to 100 billion euros of liquidity, strengthening its financial endowment and extending its use to companies up to 499 employees.¹¹⁰ In addition, a strong simplification of the bureaucratic procedures to access the guarantees granted by the Fund, represented as follows:

- 100% guarantee for loans up to 25,000 euros, without any creditworthiness assessment, for an amount not exceeding 25% of revenues. This way, the loans will be provided without the need of waiting for the green light of the Guarantee Fund;¹¹¹
- 100% guarantee for loans up to 800,000 euros, without performance evaluation, for an amount that does not exceed 25% of revenues;¹¹²
- 90% guarantee for loans maximum up to 5 million euros, without performance evaluation.¹¹³

¹⁰⁸ (Marco Mobili, 2021)

¹⁰⁹ (Italia Oggi, 2020)

¹¹⁰ (Ministero dello sviluppo economico, 2020)

¹¹¹ *Ibidem*

¹¹² *Ibidem*

¹¹³ *Ibidem*

It has been possible to grant state guarantees to companies on bank loans through measures aimed at strengthening the tools to support the export of Made in Italy, internationalization and corporate investments.

In May 2020, as the country was beginning to emerge from the first pandemic wave, the launch of the *Relaunch Decree*, the broadest economic measure with a set of interventions with a total value of 55 billion on net debt. The decree aim is that of reviving the economy, supporting workers, businesses, families, but also intervening with greater intensity on health, tourism, transport and education. The innovation introduced in the *Relaunch Decree* concern the "super bonus" for the seismic upgrading of buildings (bonus earthquake) and energy improvement (eco bonus) to the extent of 110%; already foreseen for the first homes, it was also extended to second homes consisting of one or two real estate units of the same owner.¹¹⁴ The bonus was also made applicable for demolition and reconstruction interventions. To stimulate the automobile market, which is considered to be one of the fundamental ones of the market, the possibility was introduced to take advantage of a bonus for the purchase, from 1 August to 31 December 2020, of a less polluting car. Employers who have taken advantage of the layoffs for their workers have been entitled to extend the maximum duration limit initially envisaged in 14 weeks overall by a further 4 weeks.¹¹⁵

Some of the interventions envisaged by the *Cura Italia* decree and the *Relaunch Decree* were considered eligible for financing with the SURE instrument. This resulted extremely beneficial for Italy as the expected saving is roughly 4.6 billion euros, considering the average average rate of the ten-year BTP was equal to 1.29%.¹¹⁶ These instruments included the extension of existing working time reduction schemes for employees; indemnity for self-employed, fixed-term workers in the agricultural, entertainment, domestic, on-demand and sports collaborators sectors; parental leave and disability leave benefits, as well as the bonus for baby-sitting services; tax credits for the improvement of safety and for the health of the workplace; non-repayable grants for independent workers and individual businesses.

¹¹⁴ (Governo Italiano Presidenza del Consiglio dei Ministri, 2020)

¹¹⁵ *Ibidem*

¹¹⁶ (Confindustria, 2020)

The government's commitment then continued with the variance of 25 billion that preceded the *August Decree*.¹¹⁷ The latter has assigned additional resources for the Italian health sector, for social safety nets and has provided for new sector measures for economic recovery.

Finally the Government launched the *Refreshment Decree* in October 2020, with a set of quick and as automatic as possible measures, including non-repayable contributions, suspension and tax reductions, contributions, payments and new weeks of layoffs, aimed at the most affected by the new restrictions.

For what concerns the *Next Generation Eu*, the Italian government will adopt a strategy that overall will mobilise over 300 billion euros, with over 210 billion coming from the *Next Generation Eu* program and the rest supplemented by the funds allocated with the 2021-2026 budget planning.¹¹⁸ Of the 210 billion euros, 144.2 billion will finance 'new projects', while the remaining 65.7 billion will be used for 'existing projects'. The plan consists of investments and reforms that are expected to increase growth and employment.

Numerous are the legislative reforms that should accompany the use of resources and make it effective. For example, in line with the European recommendations to Italy, the reforms are aimed at strengthening competitiveness, reduce bureaucratic burdens and remove the constraints that have slowed down the implementation of investments or reduced their productivity, while other reforms are planned to be on the tax system, the labor market and so on. The impact on GDP in the final year of the Recovery Plan, that is 2026, will be approximately 3 percentage points, considered that investments and reforms will boost growth and employment.¹¹⁹ The Plan proposed by the Italian government is divided into six missions, in line with European guidelines, in fact the resources will be used for the digitization of the public administration and to support digital innovation and the internationalization of businesses, for the ecological transition, for education and research and for gender equality and social and territorial cohesion, in particular for the development of the south of Italy, and for the health system. The Confindustria Study Center estimated the possible macroeconomic effects of the non-repayable resources, which account for 79.5 billion euro, provided by *Next-Generation Eu*. They estimate that the Italian GDP would be 1.4% in 2024 and 0.6 % higher in 2026 compared to the base scenario. Therefore showing a substantial impact resulting from the use of these resources.¹²⁰

¹¹⁷ (Ministero dell'Economia e delle Finanze, 2020)

¹¹⁸ (Ministro dell'Economia e delle Finanze, 2021)

¹¹⁹ *Ibidem*

¹²⁰ (Confindustria, 2020)

Conclusion

The Covid-19 pandemic has now been around for more than a year, causing all over the world more than 2 billion victims.¹²¹ The pandemic has overwhelmed and continues overwhelming the globe and our lives, with the transmission of the virus been favoured by the high rate of globalization that characterizes today's world.

Through the study of past experiences and hypothetical scenarios it was possible to learn what are the main economic repercussions that hit a particular country affected by a virus, and what are the possible scenarios that can be designated following the spread of a virus on a large scale. These highly depend on the morbidity and mortality rate, as well of the possible resurgence of the virus, that can be taken as parameters when predicting the unfolding of a pandemic. While the duration of most past pandemics has been confined to relatively short periods, about a quarter of a year, thus triggering a rebound in economic activity, following the end of the emergency, and limiting the impact on the economy to the short term effects, the Covid-19 pandemic seems to be a pandemic like no other. Nonetheless, the conclusions arising from the first chapter of this paper allowed to understand the transmission channels of the shock to the economy and the direct and indirect effects that arise in presence of an event of this caliber, giving us the knowledge necessary to better understand the consequences caused by Covid-19.

The spread of Covid-19 globally led to a deep economic crisis in most countries all over the world causing serious economic repercussions by simultaneously creating a supply shock and a demand shock, making it the most dramatic shock experienced since the Great Depression. Both Italy and the Euro Area, were hit at a time when the economy was already experiencing signs of a slowdown, with the introduction of containment measures, the collapse of activity and demand together with the decline in employment and disposable income have amplified the already existing weaknesses. The drastic effects immediately flooded the European and the Italian economic scenarios with a high level of uncertainty, which we captured by looking at composite leading indicators, the economic sentiment indicator, and the economic policy uncertainty index. The effects on GDP have been as well severe especially in the first half of the year and showed signs of recovery following the lockdown, better are the predictions for 2021 also with the arrival of vaccines which lets us hope that the health emergency will gradually come to an end.

¹²¹ (Ministero della Salute, 2021)

The biggest challenge remains that of knowing how to manage uncertainty and collaborate, at a national and universal level, to face the crisis and prevent economic collapse. The European Central Bank immediately took the measures, trying to provide the necessary liquidity to the banking system, to keep the cost of financing affordable to households and businesses, with the introduction of non-conventional tools such as the Pandemic Emergency Purchase Program. Furthermore, the fiscal policy applied by the European Commission has been very effective, providing various tools to member countries to face the crisis and ensuring business continuity and saving citizens from unemployment, but also, with the introduction on Next Generation EU, trying to ensure future economic growth that will make the accumulated debt more sustainable. Governments will then play key roles firstly in implementing an efficient vaccination plan and also ensuring a steady recovery with the correct use of the European tools. Italy so far has introduced five decrees, the Cura Italia, the Liquidity, the Relaunch, the August and the Refreshment decree, to sustain the health system and the Italian economy, by supporting workers, businesses and households, and especially the sectors hardest hit by the crisis. Moreover, the Recovery Fund represents a really important instrument Italy could get access to, as its estimated impact on GDP in 2026 is expected to be approximately 3 percentage points, its use will involve a large number of investments and reforms that will finally reduce bureaucratic burdens that have so far reduced investments' implementation and productivity.¹²²

¹²² (Confindustria, 2020)

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