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Course of Corporate Finance

The impact of COVID-19 on small and medium Italian enterprises

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To my parents, I am infinitely grateful for always supporting me and backing my every decision. Thank you for giving me so many opportunities to grow.

A special thanks to my friends for sharing the most important experiences with me during these three years. The affection and support shown make this achievement even more precious.

Thanks also to Professor Ugo Zannini who was able to guide and advise me throughout the path of writing this thesis.

Finally, I dedicate this thesis to myself, to my sacrifices and tenacity that have allowed me to get this far.

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INTRODUCTION

The world economic scenario has been strongly affected by the diffusion of the virus COVID-19 that has led the world into an economic crisis. The pandemic represents a global shock with a remarkable magnitude that is comparable to the 2008 economic crisis. In order to understand the macroeconomic impact on different countries it is useful to compare the variation in level of Gross Domestic Product in the last year, however, as we will see this is not the only measure for macroeconomic variation, even though it may be the most significant. This thesis aims at reporting and evaluating how the COVID-19 has affected the economy looking at the most recent published report by the International Monetary Fund, the European Central Bank and the Bank of Italy together with the report by Istat and Cerved. The first chapter will have the goal to build a clear and complete image of the world economy starting with the impact of the crisis in the USA, moving then to Europe and then to China and Japan. Italy will later become the protagonist of the thesis as we will focus on the general framework that was characterizing the peninsula few months before the arrival of the virus.

The second chapter is entirely dedicated to the effects of the economic crisis on small and medium companies. The analysis of the current situation will be made through a careful evaluation of several sources. Specifically, we will analyze the 2020 report focused on small and medium companies developed by the Cerved and the paper "The COVID-19 shock and Firms' R&D Plans: Evidence from the Recent Italian experience" written by Prof E. Brancati who kindly granted me the possibility to have access to the macro-data of the two surveys on which the report is based. A descriptive analysis of both reports will be developed. This will allow to construct a clear and diversified image of the Italian economic situation during the spread of the virus and more specifically of the situation for small and medium companies. I have decided to concentrate my thesis on this topic as SMEs represent 99% of Italian industry and have been forced to face the hardest challenges to overcome the financial crisis and survive. The very high number of enterprises employed nearly 80% of the population. Not only these are companies fundamental to the country's competitiveness, but they are also standard-bearers for the nation's image around the world.

Finally, to complete our journey the focus will be moved towards the expectation for the future in the next three years that mostly depend on the development of the vaccines campaign.

CHAPTER 1: COVID-19 In the World's Economies

1.1 COVID -19 and the macroeconomic impact of a world pandemic

At the beginning of 2020, the World Health Organization (WHO) declared that Chinese health authorities had identified a new strain of coronavirus never previously identified in humans, tentatively named 2019-nCoV and later officially classified under the name of SARS- CoV-2. The virus is associated with an outbreak of pneumonia cases recorded as of December 31, 2019 in the central China city of Wuhan. On February 11, who announced that the respiratory disease caused by the new coronavirus was named COVID-19. On January 30, the Superior Institute of Health (Istituto Superiore di Sanità) confirmed the first two cases of COVID-19 infection in Italy and on February 21, it confirmed the first indigenous case in Italy (Sanity Superior Institute, 2020). In the first 6 months of 2020, starting from China, the new virus spread throughout the world reaching almost every country and eight million people. We are talking about a pandemic that has triggered an economic crisis worse than the 2008 crisis for the entire world. COVID-19 has led governments to reach a situation of uncertainty. Every country has faced difficult tradeoffs between health, economy and social causes. A major part of the population in the world has experienced containment measures consequence of a lockdown. In order to manage the pandemic and all the critical aspects coming from the crisis such as the containment measures, health care and social services subnational governments have been appointed responsible

The impact of the COVID-19 at a regional and local level is strongly heterogeneous, factor that has led to the need of a proper crisis management and the need for effective policy responses. The crisis has had different impact:

- Health/social impact: many vulnerable regions, such as unprivileged urban areas, have been affected by a higher mortality rate due to mismanagement of the health crisis. Also, vulnerable populations have been strongly affected.
- Economic Impact: the economic impact varies according to the economic characteristics of the region. Areas with a high exposure to global value chains and specialization in specific sectors like tourism have been seriously affected.
- Fiscal impact: the crisis has led to decrease in revenues and an increase in expenditure for any regions. The impact on subnational finance is not uniform however, it is expected to be long-lasting (OECD, 2020).

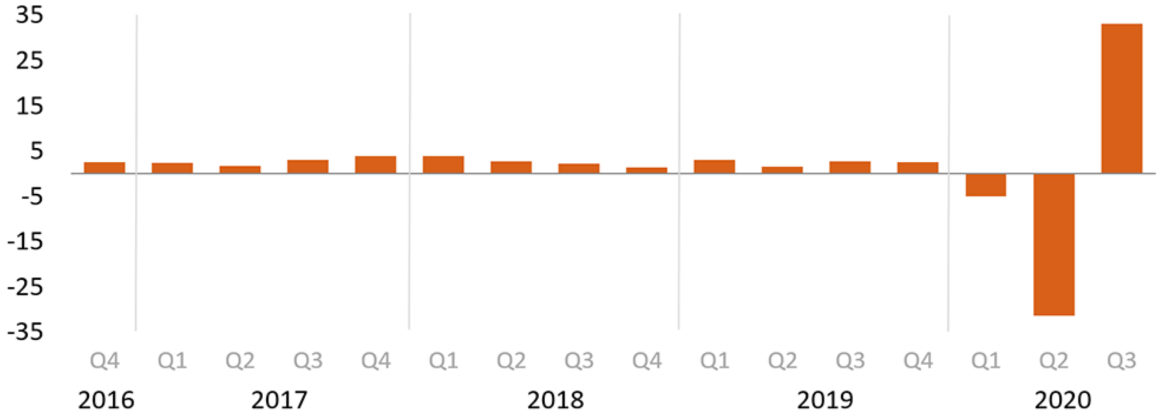
In order to understand the macroeconomic impact on different countries we will compare the different measurements. The most relevant is the Gross Domestic Output. GDP is one of the most useful and compelling measurement of national economy; it takes into consideration different element of an economy as personal consumption, private investment, government spending and exports. Real GDP is adjusted to level of inflation.

We are going to have an overlook at different areas of the world, our focus will be the USA, Europe and to have a broader view also China and Japan.

1.1.1 The USA

As in the rest of world in the beginning of February 2020, the United States experienced its worst macroeconomic shock since the 1930s. As a directly outcome of the covid-19 crisis, real GDP was poised to contract by up to 8 percent in 2020, marking the worst economic contraction since 1932. The S&P 500 Index has faced its worst decline since the 2008-9 financial crisis (-33.9 percent) and the median private sector forecaster predicted that unemployment would reach the highest level since the Great Depression and nearly double its peak in the aftermath of the 2008-9 crisis (Bartik A., Bertand M., Cullen Z., glaeser E., Luca M., Stanton C., 2020). Starting our overview from the US and looking at the variation of real GDP we can see how the gross domestic product has fluctuated strongly. As it is reported by the US Bureau of Economic Analysis and shown through graph 1, in the second quarter, real has GDP seen a decrease of 31.4 percent, fact that demonstrates the strong economic shock faced by the US. In the third quarter of 2020 Real gross domestic product (GDP) has then increased at an annual rate of 33.1 percent (Chart 1). GDP fluctuation represents the key to identify the shocks in an economy. We define the entrance in a period of recession after a strong decline in national output; an especially lengthy and deep decline in output is called a depression. The level of unemployment is directly linked to the variation of GDP, as the second rises so does the first, and vice versa. In the United States as they continued to pursue lockdown measures, unemployment continued to rise as expected. The rise of unemployment rate to 14.7 percent in April, led many economic experts to believe that the situation would worsen in the next month reaching level of unemployment higher than 20 %. Instead, thanks to the end of the lockdown measures and the consequent reopening of most economic activities, the rate of unemployment declined to an unexpected 13.3% (Bartik A., Bertand M., Cullen Z., glaeser E., Luca M., Stanton C. (2020).

Chart 1: Real GDP: Percent change from preceding quarter



Source: U.S bureau of economic analysis

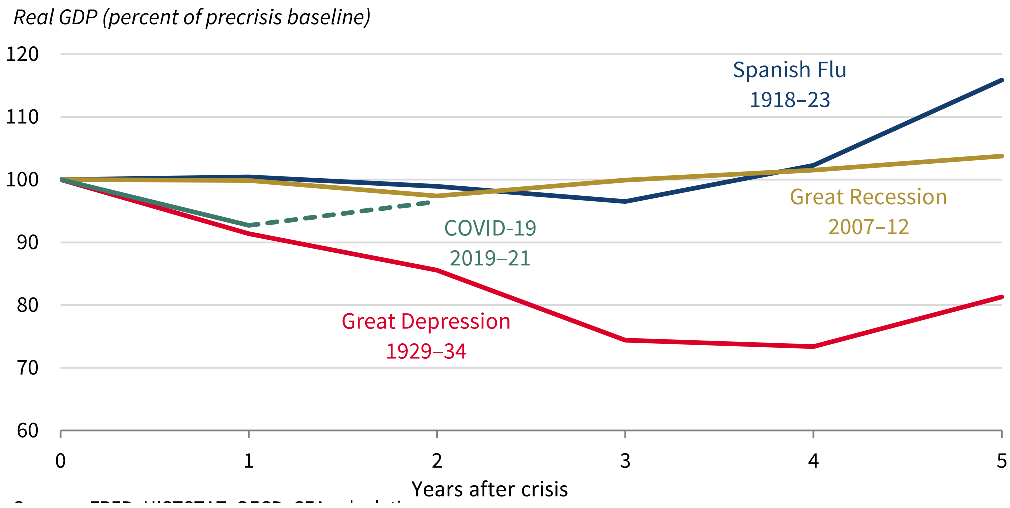
To see the situation from the other point of view in Canada and the United States employment rates dropped by 8.5 percentage points (to 64.7%) and 8.9 percentage points (to 62.5%) respectively in the second quarter. For the third quarter of 2020 more recent data show employment rates increasing in Canada (up 5.7 percentage points, to 70.4%) and the United States (up 3.8 percentage points, to 66.3%), but still remaining 2.8 and 5.1 percentage points below the level of the first quarter of 2020 (OECD, 2020).

With the objective of understanding better the impact of the pandemic in the US is useful to analyze the flow of the S&P 500[1]. With the onset of the pandemic and the confirmation of the spread of the virus in the United States, the S&P 500 begins a rough sell out that persists until March 23, losing 33.9% of its value from its peak just before the outbreak. It's evident that the pandemic caused by COVID-19 has led the US economy to a phase of recession with a strong decrease in the GDP and an increase in the level of unemployment. As said before the situation can be compared with the economic crisis that took place during the great depression and after 2008-2009, however the actual recession is fundamentally different from the ones that we mention before because the cause doesn’t have financial roots. The closest epidemiological analogue, the 1918 Spanish Flu, had a much smaller effect on GDP, with growth rates of 0.4 percent and –1.5 percent in 1919 and 1920, respectively. Further comparisons with the Spanish Flu are complicated by the context of World War I and the changes that the U.S. economy has undergone in the past century. In terms of the

[1] The S&P 500 is a stock index that charts the stock prices of 500 of the biggest public companies in the US. The index is officially identified as the Standard & Poor's 500 Composite Stock Price Index and commonly referred to as the S&P 500. It is very important as it is used to track the performance of U.S. stocks

public health response, the nonpharmaceutical interventions in 1918 and 1919 were in many ways similar to those of today (Chart 2) (National Bureau of Economic research, Bartik A., Bertand M., Cullen Z., glaeser E., Luca M., Stanton C., 2020). The following graph shows the time required to exit from the phase of recession after each crisis, as said before since the economic crisis caused by COVID-19 doesn't have economic reason behind it, it is still uncertain the result and the time needed to have a complete recovery in the US.

Chart 2: GDP Recovery from previous crises



Source: FRED; HISTSTA; OECD; CEA calculations

1.1.2 European countries

As in the US the consequences of the virus in Euro area have been appalling, changing from quarter to quarter as reported in various economic bulletin of the European central bank. Reading the bulletin of May 2020, we can perceive the gravity of the situation; The economic indicators and survey results covering the period since the coronavirus spread to the euro area showed an unprecedented decline, pointing to a significant contraction in the economic activity and to rapidly deteriorating labor markets. The industrials sector of manufacturing and services have been strongly affected by the measurements taken during the lockdown periods. This has had an impact on the euro area economy and on domestic demand. In the first three months of 2020 Europe has seen a decrease quarter on quarter of 3.8% of real GDP. The comprehension that the consequences were going to be even more severe in the second quarter came from the drastic decrease in economic activity of April 2020.

The surge in demand for loans by businesses and the use of credit lines are very evident in the survey developed by the European central bank for the first quarter of 2020. These data point to the need to meet liquidity requirements for working capital and a decrease in funding requirements for fixed investment. The credits standards for households' loans have become more stringent while the ones for business loans have instead tightened slightly less. Meanwhile the banks are forecasting a relaxation of the credit standards for business loans in the second quarter of 2020. As reported in the next graph the consequence of the pandemic have dramatically affected global and euro area[2] economic activity (Table 1). Following a significant drop in the first quarter, euro area real GDP fell by 11.8% in the second quarter as a consequence of the lockdown measures. The impact has subsequently been mitigated by the gradual unwinding of these measures since May, as well as changes in behavior in response to the pandemic. According to Eurostat, real GDP fell by 11.8% in the second quarter, pushing real GDP down by about 15% compared with the fourth quarter of 2019. The most affected euro countries have been France, Italy, and Spain. (European Central Bank, 2020). We can have a complete overview of the past level and projection of the economy in the euro area by looking at the graph developed by EUROSTAT (Chart 3) (European Central Bank, 2020).

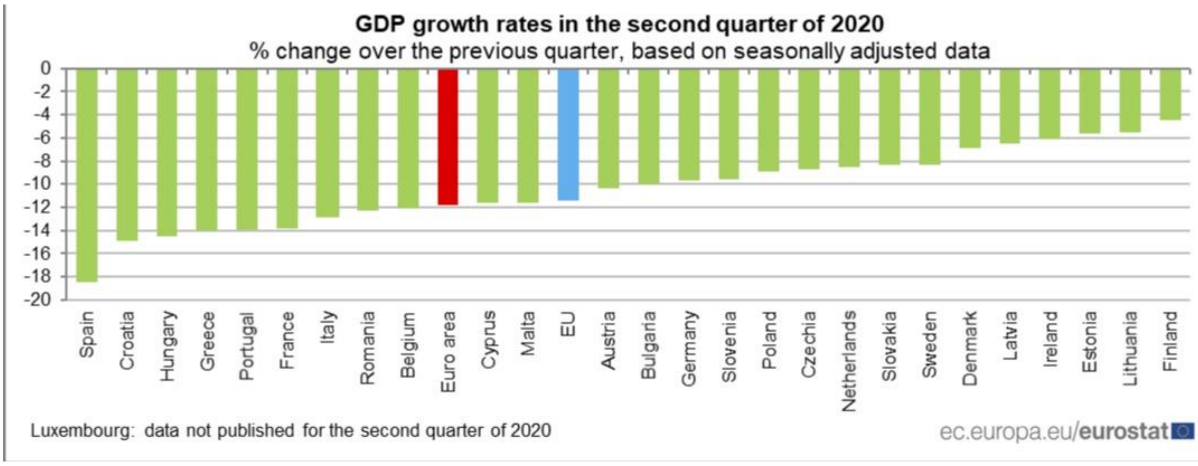
Table 1: Variation of GDP and Employment in Europe

Growth rates	To the previous quarter (q/q-1)				To the previous year (q/q-4)			
Estimates	Previous		Current		Previous		CURRENT	
Zone	Euro area	Eu[3]	Euro area	Eu	Euro area	EU	EURO AREA	EU
GDP	-12.1	-11.9	-11.8	-11.4	-15.0	-14.4	-14.7	-13.9
Employment	-2.8	-2.6	-2.9	-2.7	-2.9	-2.7	-3.1	-2.9

Source: EUROSTAT

[2] The euro area (EA19) includes Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, Slovakia and Finland.
[3] The European Union (EU27) includes Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland and Sweden.

Chart 3: GDP growth rates in the second quarter of 2020



Source: EUROSTAT

GDP growth by Member State Among Member States for which data are available for the second quarter of 2020, Spain (-18.5%) recorded the sharpest decline of GDP compared to the previous quarter, followed by Croatia (-14.9%), Hungary (-14.5%), Greece (-14.0%), Portugal (-13.9%) and France (-13.8%). The lowest declines of GDP were observed in Finland (-4.5%), Lithuania (-5.5%) and Estonia (-5.6%), followed by Ireland (-6.1%), Latvia (-6.5%) and Denmark (-6.9%).

Analyzing the table, it is evident that the impact on the economy of 2020 has been very strong. Almost every value related to the Real GDP that represents the gross domestic product adjusted to inflation are negative which implies a negative annual percentage change.

However, Europe is recovering, as we can read from the European central bank bulletin of September 2020: a continued recovery of the euro area together with a rebound in GDP in the third quarter of the year is perceivable in the incoming data and survey results, however values remain under pre-crisis levels. Together with a significant rebound in industrial and services production, there are signs of a clear recovery in consumption. Most recently, growth momentum has slowed more in the service sector compared to the manufacturing sector, something visible also in the August survey results (European Central Bank, 2020).

The evolution of crisis and its impact on the various state strongly depends on the evolution of the pandemic and the success of the containment policies.

1.1.3 China and Japan

To have a wider view of the world situation, it is necessary to see the impact of this crisis also in Asia. We can compare the values of growth of the state by looking at the monthly "Economic bulletin" of European central Bank and comparing the economic situation in the different quarters of the year. First, we will have an overlook on the situation in China and then move to Japan.

As stated by the report of May 2020 also China has been strongly affected by the pandemic. In the first quarter of 2020 GDP decreased by 6.8% year on year. However, a recovery was evidenced by the high-frequency indicators of economic activity. Real estate activity and traffic congestion indices were only marginally below the levels observed during the same period in 2019. Activity was expected to rebound only partially in the second quarter of 2020, as weak domestic demand was boosted by weak external demand, held back by cautious consumer behavior and prevailing restraint measures which, however, did not happen thanks to policy measures to support the economy and ensure liquidity in the banking system (European Central Bank, 2020).

In contrast, as reported in the September 2020 bulletin, the economy is recovering strongly but retail sales remain feeble. China's GDP increased by 11.5% quarter-over-quarter in the second quarter, returning above its end-2019 level. Investment was the main driver of growth, along with net exports, while consumption remained a drag on growth. If retail sales continue to decline (-2.6% year-over-year in July) probably as a due to household employment expectations, industrial production has recovered robustly (+4.9% year-over-year in July). Fiscal policy remains supportive of economic activity, employment and economic growth are expected to be stabilized by the expansion of unemployment insurance, increased investment and tax relief measures. Monetary policy is also supportive, however, given the recovering economy, the authorities are aware that further credit growth could pose risks to financial stability (European Central Bank).

In Japan, despite the strong policy response, the pandemic had a strong impact on business. The pandemic has struck when the economy was beginning to show signs of a moderate rebound after the sharp downturn in the last quarter of 2019 result of the October VAT increase and typhoons. The Composite PMI fell to its lowest level since the March 2011 Great East Japan earthquake and tsunami, and the Reuters Tankan signaled a further deterioration in business conditions in April. Even before declaring a state of emergency, the government announced different policy aimed at responding to the immediate crisis. A large part of the announced package is related to private sector outlays. The December 2019 fiscal stimulus and the two 2020 emergency fiscal packages are also included. This follows measures taken by the Bank of Japan, including increased liquidity availability through JGB acquisitions and dollar supply transactions, increased purchases of commercial paper and bonds, and enforcement of a special operation to facilitate corporate financing. (European Central Bank, 2020).

Analyzing the September 2020 bulletin, we can read that although private consumption remains weak, economic activity in Japan recovered in the third quarter. Real GDP declined by 7.9% in the second quarter. A state of national emergency in April and May dampened activity which led to sharp contractions in private consumption of services, a consequence of a drop in domestic demand, and a sharp drop in exports, a consequence of a drop in foreign demand. Thanks to a recovery in foreign demand, in July we see a significant rebound in industrial production, although the pace of economic recovery remains subdued. In fact, although it increased for the fourth consecutive month in August to 45.2, it still remains in contraction mode indeed, private consumption of services remains weak. In the first quarter level in June, consumption of services was remarkably unchanged from previous months although improving mobility trends for visits to restaurants, shopping malls and theme parks may suggest an ongoing recovery. This, indicates a very gradual recovery in consumption, in part related to the resurgence of new COVID-19 infections during July and August (European Central Bank, 2020).

To summarize the general situation after an overview of the major economic indices for different geographical area, it is useful to compare the results we have seen in the following table (Table 2). All data refer to the period of September 2020. Data for the level of employment in China and Japan have been difficult to retrieve.

COVID-19 has had an impact on all the major economies of the world. In the table below, we can see that China has a positive value for the real GDP of September 2020 consequence of the fact that the country has entered the crisis before the rest of the world, as the virus has started to spread first there. The overall decrease in Real GDP and Employment is a consequence of the various restrictions imposed to stop the virus, and a consequence of the effects that the crisis has had on companies, as will see in the next paragraphs.

Table 2: Comparison of real GDP and Employment across the world

Values of September 2020	USA	Europe	EU AREA	China	Japan
Real GDP (percentage change from the first quarter)	-31.4	-11.8	-11.4	+11.5	-7.9
Employment (percentage change from the first quarter)	-8.9	-2.9	-2.7	missing	missing

Source: Author

1.2 The impact on companies: overview of the effects on companies, comparison between different countries

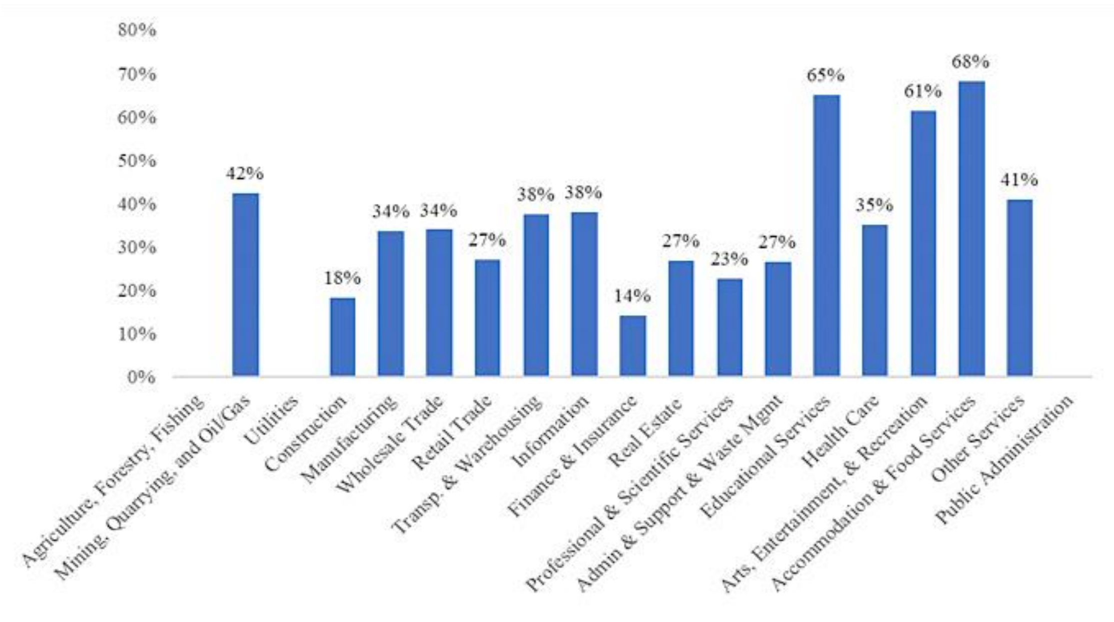
As we can see from the variation in level of GDP the impact on the economy has been devastating, and it has reflected also on company's framework. The COVID-19 pandemic outbreak forced many businesses to close, leading to an historically unprecedented interruption of business in most industries. Retailers and brands have faced many short-term challenges, such as those related to health and safety, the supply chain, the workforce, cash flow, consumer demand, sales, and marketing. Indeed, once the pandemic will be over, we will arise in a different world compared to the one we were living before. Companies, especially startups, have implemented a hiring freeze on permanent hires. At the same time, online communication, online entertainment and online shopping are seeing incredible growth.

The effects have been heterogenous according to the country of origin, the business sector and the kind of company. COVID-19 disruptions haven't and won't affect all businesses equally, some that are more essential will survive while other will be forced to exit the market. As stated by national bureau of economic research: "For a variety of reasons related to both the underlying nature of the business and management capacity, COVID-19 poses an existential threat to some and not others" (National Bureau of Economic Research, 2020).

1.2.1 The effects in the United States

As we have seen before the impact on the US GDP has been very strong. Macroeconomic changes reflect also the difficult situation faced by corporations. Even if consequences may be temporary, the impact on many on business will be severe. Many of them will reach failure, some have already failed, others will require major changes in order to survive. Failure could imply liquidation, acquisition by a rival or voluntary exit. Even companies that survive may have to renegotiate past debts, raise new funds, or downsize. A detailed picture of the pandemic on U.S. businesses is painted by a variety of data sources. Early in the pandemic, the U.S. Census in order to detect the impact of COVID -19 on small and medium-sized businesses administered periodic surveys to them. Chart 4 shows data from the most recent of these surveys, administered in late July 2020. In the chart are represented by sector the percentage of small firms reporting a “large negative effect” on their business after the pandemic. The chart discloses the recurrent pattern: entertainment, restaurants and hotels were the most affected sectors. Adverse impact on business is reported on average by more than 40% of firms in the mining, oil and gas, transportation and health care sectors. Overall all sectors have a significant share of firms that have experienced negative effects of the pandemic with the exceptions of utilities, construction, and finance and insurance (Greenwood R., Iverson B., Thesmar D., 2020).

Chart 4: Percentage of small businesses in a sector reporting severe impact of pandemic on business



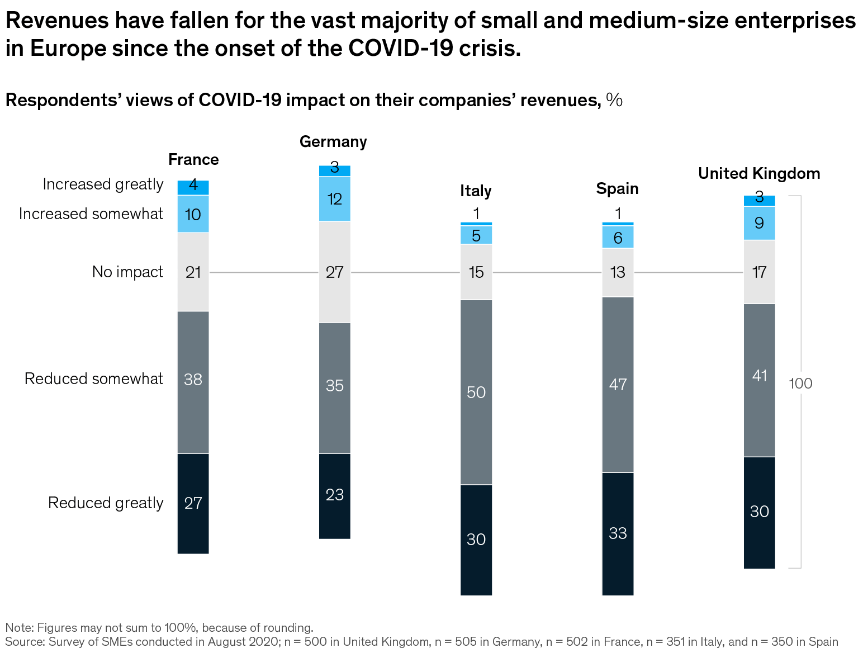
Source: Greenwood R., Iverson B., Thesmar D., 2020

1.2.2 The consequences in the European countries

We can have a concrete prospect of the impact of COVID on small and medium companies in Europe by analyzing the McKinsey survey conducted in August 2020 on more than 2200

SMEs in five different countries: France, Germany, Italy, Spain and the UK. In some countries 70 percent of the companies declared that their revenues had declined consequently to the pandemic, with severe subsequent effects. Almost one out of five companies declared to be in a precarious condition as unable of repaying loans and with risk of having to fire employees. Moreover, almost 30% feared they would have to cancel plans for growth. In aggregate, more than half felt their businesses may not survive longer than 12 months, and we also have to consider the fact that 20 percent of those companies who declared that they could “survive” had already taken advantage of the various forms of government assistance aimed at easing their financial distress, such as tax breaks or payments to furlough staff.
The vast majority of SMEs surveyed saw a decrease in revenues; however, the picture differs from country to country, mirroring the severity of the virus control measures and their impact on business activity. Compared to other country, Italian and Spanish SMEs were hit the hardest: 30% and 33%, respectively, said their revenues were sharply reduced, lower value compared to Germany where the sharp reduction in revenues involves only 23% of the companies. (Chart 5) (Dimson, J., Madlenov, Z., & Sharma, R., 2020).

Chart 5: Change in revenues in Europe



Source: Mckinsey & Company

1.2.3 Impact on Business in China

We can analyze the impact of the COVID -19 in china thanks to a recent study called "the impact of the COVID-19 pandemic on firm performance". The paper analyzes and discuss the impact of the virus on corporate performance, focusing on firm-level performance. The study found that the outbreak of the pandemic has decreased investment scales and reduced total revenues, bringing a significant negative impact on the overall performance of listed Chinese companies. The decline in corporate performance is mostly relevant in the first quarter of 2020. Production, operation, and sales of these industries have been negatively affected by the virus, element that is eventually reflected in the negative return rate. In the regions where the virus has spread has had a more severe impact, the negative consequences are much more pronounced as strict quarantine measures, limited consumptions and productions have also sent a negative signal to managers and its stakeholders.

1.3 The situation in Italy

Italy has been one of the most affected countries from an economic and health situation point of view. The pandemic started to spread in January and it is exactly on the 31st of the same month that the state of emergency is declared by the national president Conte (LAB24, 2020). The past months have been very difficult for Italy as the pandemic has had a strong impact on the economy and besides the help received by the European community the situation is still very unstable, especially after the second wave of the virus that has happened between October and November. In order to understand better the impact that the pandemic has had on the country and to analyze later how the Italian PMI have suffered and how they have reacted it is necessary to a have a macroeconomic overview of country in these months of pandemic.

Before looking at the events and their consequences on the economy it is necessary to make a brief overview of the historic Italian situation compared to the other economy in the world. This can be done by looking at the principles stock exchange indices in the different countries and their changes in the past years. Looking at the following graphs (Chart 6-7-8-9) we can see the trends in the last 20 years of the various indexes, which represent the trend of the principal industries in the various countries. We can see very clearly that after the 2007 crisis the Italian market compared to others have never been able to get back to the value's pre-crisis.

Chart 6: Nikkei 225 (Japan)

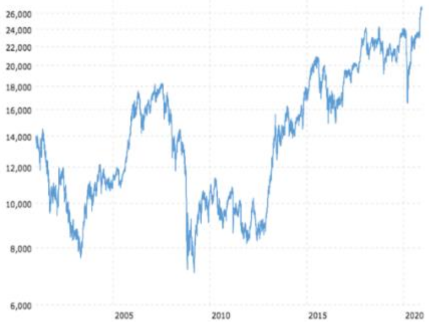


Chart 7 :DAX 30 (Germany)

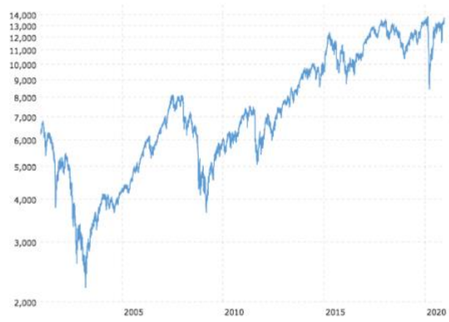
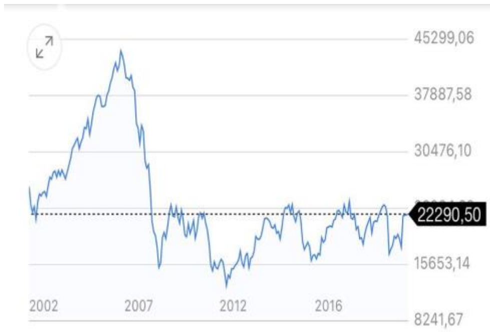


Chart 8: S&P 500 (USA)

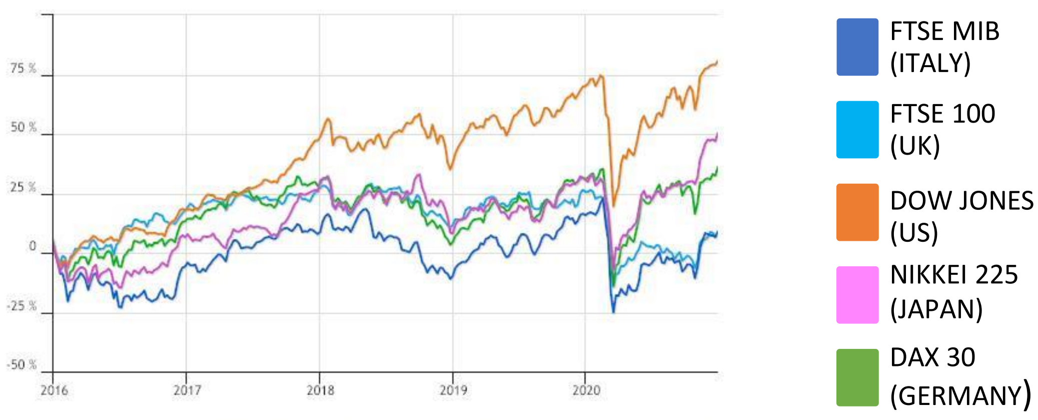
Chart 9: FTSE MIB (Italy)



Source: Macrotrends.net

In the last five years, as we can see in the next graph (Chart 10) remains the gap between Italy and the other economies. The critical initial situation of the Italian economy has implied for the firms and industries to be at disadvantage and unprepared respect other countries as we entered the period of pandemic crisis.

Chart 10: Comparison of the different stock index of the last five years



Source: teleborsa.it

1.3.1 Contraction in GDP

The pandemic-induced recession is the most severe in contemporary Italian history in peacetime. The contraction in GDP this year returns to the values of 23 years ago. In the first half of the year, GDP was 12 percent lower than the same period in 2019. In April, industrial production was more than 40 percent below the level at the beginning of the year. In this context, the Italian government has launched very extensive interventions to support the economy. As reported in the Confindustria report, we talk about the "perfect storm". It was caused in-between March and April by a double shock of supply and demand, induced by the regulatory blockade of activities in numerous sectors of industry and services, and by the restrictions on the movement of people with the aim of containing the spread of the virus, these facts produced disruptive effects on the Italian economy: GDP decreased overall by 17.8% in the first and second quarters. The measures adopted between the beginning of March and August to manage the health emergency and mitigate the impact of the crisis amounted to approximately 100 billion (6.1 percent of GDP). The violent decline in economic activity in the spring was followed by a strong, albeit partial, recovery in the summer months. In the third quarter, the return to growth (16.1 percent compared to the previous quarter) was more robust than expected and driven by the significant recovery of the industry, which in August returned to levels of activity equal to those prior to the pandemic. If GDP remained unchanged in the fourth quarter at the levels of the third, on average in 2020 it would be 8.2 percent lower than last year (Italian Bank, 2020).

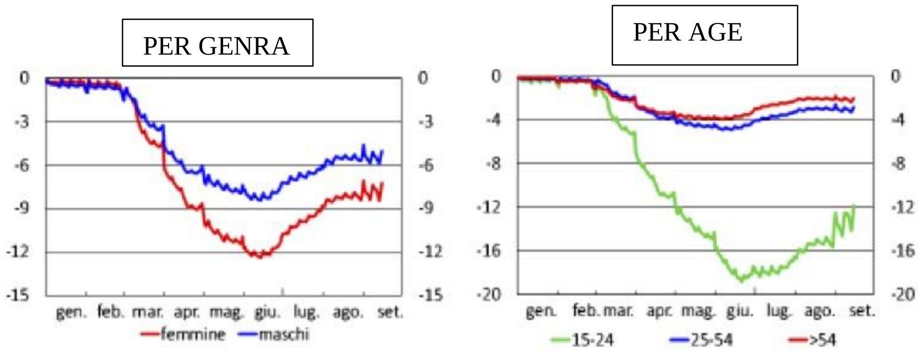
Liquidity to family and business was provided thanks to the huge measures launched by the government during the first months of the emergency. Industry sector and the tertiary sector have been the sectors with the most serious consequences, as a result of the cancellation of orders from the domestic and foreign markets. The end of the blockade in early May led to a major increase in demand, which had basically vanished in many sectors, and boosted industry business with significant gains in the third quarter, but these did not repair the losses of the first two quarters.

1.3.2 Contraction in employment rate

The heavy impact on labor input employed, which in terms of total hours worked fell by 15.1% per year on average for the first two quarters of 2020 was a consequence of the dramatic drop in activity levels in Italy: the number of employed fell by only 1.5%, while most of the adjustment came about through a decrease in hours worked per capita (-13.5%).

This is due to the massive use of tools for the integration of income from work, primarily the Redundancy Fund, which the Government has made available in derogation (Buccellato T., Capretta P., Carapella P., Caruso A. (…), Confidustria, 2020). The balance between activations and terminations of job positions has recorded marked contractions in the past months of March, April and May, when employment fell overall by about 500,000 units. The decline has had a significant impact above all on female employment (Chart 11), due to the worse performance of the sectors in which women represent a significant share of the workforce, such as tourism services, and on young people aged 15 and the 24-year-olds, most frequently employed on fixed-term contracts. The balance of job positions showed signs of improvement starting from the end of June, allowing for a recovery of almost 200,000 employees in the summer months; in September, however, the recovery almost came to a halt (D. Franco, Italian Bank 2020).

Chart 11: Activation of new job positions (differences compared to same date of 2019; units for a hundred employee



Source: D. Franco, Italian Bank, 2020

1.3.3 The Liquidity crisis

Investments are affected by demand prospects and business confidence. Their decline contributes to the reduction of overall demand. Over 40 percent of companies in industry in the strict sense and in services say that their investments throughout 2020 will be lower than expected at the end of last year; for about half of these, spending will be more than a quarter lower than in the initial plans. The projected expenditure on fixed investments for 2021, compared to 2020, would be down for more than 15 percent of companies (D. Franco, Italian Bank 2020). At the origin of the decrease in investments we have economic problems that have led to the so-called liquidity crisis. As reported from the "Sole24" in an article of august

2020, 380 thousand firms out of 1 million predict of having liquidity problems for the next 6 months. In the sample taken the liquidity crisis involves almost 60 % of the total (Greco F. 2020). The liquidity crisis that has hit Italian companies after the pandemic has found a response from the banks. The loans provided by the intermediaries have increased significantly and widely between sectors and between companies of different size, including the smallest. Business loans from the beginning of March to the end of July they grew by 47 billion; they had fallen by around 2 billion in the same period of 2019 (Italian Bank 2020).

For a better understanding of the overall situation and the possible projection from a macroeconomic point of view it is useful to see the “scenario base” developed by the Italian bank that we can see in the following table (Table 3) (Italian Bank 2020).

Table 3: Macroeconomic projections for Italian economy

		JUNE 2020		**JANUARY 2020**	
	2019	2020	2021	2020	2021
GDP	0,3	-9,2	4,8	0,5	0,9
Household consumption	0,4	-8,9	4,7	0,8	0,8
Collective consumption	-0,4	1,4	0,5	0,3	0,3
Gross fixed investments	1,4	-15,0	4,7	0,4	1,7
- *Investments in capital goods*	0,4	-16,4	7,4	0,4	1,6
- *Investments in construction*	2,6	-13,3	1,6	0,3	1,9
Total exports	1,4	-15,9	7,9	1,7	2,5
Total imports	-0,2	-17,4	9,5	2,3	2,4
Consumer prices (IPCA)	0,6	-0,1	0,0	0,7	1,1
IPCA at net of energy goods and foodstuffs	0,5	0,5	0,2	0,7	1,1
Employment (HOURS)	0,4	-9,9	5,1	0,4	0,6
Employment (EMPLOYEES)	0,6	-3,9	2,4	0,4	0,5
Level of employment	9,9	10,6	11,0	9,7	9,6

Source: Italian Bank and ISTAT

CHAPTER 2: The effects of pandemic on SMEs

In this chapter the focus will be the effect of the pandemic on small and medium companies in Italy. The chapter provides a descriptive analysis of data that have been gratefully provided by Prof. E. Brancati. These data have granted me the possibility to construct a better overview of the impact of the crisis after COVID – 19.

In order to construct a complete and effective analysis of the impact of the virus, we are going first of all to understand the characteristics of the world of small and medium companies in Italy, emphasizing their importance as provided by the policy of the capital market union. Furthermore, we will understand the general condition of the companies before the pandemic looking at how the 2007 crisis still affects many companies.

The focus will become then the real effects of the Virus on the SMEs economies emphasizing the heterogenous impact on different economic sectors. Different point of view will be provided through the evaluation of the expectation for future sales gathered in the report *The COVID- 19 Shock And Firm's R&D Plan: Evidence From The Recent Italian Experience* (Brancati, 2020) that will include also a descriptive analysis of data provided by the author of the report. Additional information and a financial statement analysis will be extrapolated from the analysis on SMEs in 2020 developed by Cerved. The chapter will conclude with evidences on the change on companies' demography.

2.1 The world of SMEs

With the acronym SME we refer to the small and medium enterprise that are part of an economy. In Italy the translation is PMI "piccole e medie imprese", and the Italian economy is mainly composed of them. In fact, the PMI have been the protagonists of one the last report of 2020 produced by Cerved[4] which is going to be a key source for the development of this thesis.

Before starting with the analysis of the impact that COVID - 19 has had on small and medium enterprise in Italy it is crucial to understand their characteristics and their situation before the spread of the virus.

What is a SME? Small and medium-sized enterprises (SMEs) are defined in the EU recommendation 2003/361. The composition and number of employees and the annual

[4] Cerved is the largest information provider in Italy and one of the major credit rating agencies in Europe. Cerved, via its subsidiary Cerved Credit Management, is also one of the leading independent players that offer solutions for the evaluation and management of credit exposures (Cerved Information solution, 2014)

return or balance sheet represents the main factors for the determination of an enterprise. (Table 4).

Table 4 – Definition of SMEs

Company category	Staff headcount	Turnover	or	Balance sheet total
Medium-sized	< 250	≤ € 50 m		≤ € 43 m
Small	< 50	≤ € 10 m		≤ € 10 m
Micro	< 10	≤ € 2 m		≤ € 2 m

Source: European commission

These limitations can be applied to the figures for individual firms only. In the case of a firm that is part of a larger group we may have to include staff headcount/turnover/balance sheet data from that specific group too (Internal Market, Industry, Entrepreneurship and SMEs, 2020).

In developing countries Small and Medium Enterprises (SMEs) play a key role for the economy. SMEs account for the majority of businesses worldwide, they contribute to the creation of new jobs and they are fundamental for the global economic development. They represent about 90% of businesses and more than 50% of employment worldwide (small and medium enterprises finance, 2020). In 2016, EU's nonfinancial business economy was composed of 24.7 million SME. Those were employing 95 million people and contributing EUR 4 018 billion to the value added. In countries as Malta, Estonia and Cyprus, the economic contribution made by SMEs was particularly relevant with SMEs providing more than three quarters of the total value added generated in each of their non-financial business economies (small and medium enterprises, an overview, 2019). The role of this type of company is fundamental for EU economies consequentially in the plan for capital market union approved in 2015 there are many policies that aims at helping small and medium enterprises. The capital markets union (CMU) is a plan to create a single market for capital. The objective of the plan is to get investments and savings flowing across the EU in order to benefit consumers, investors, and companies, regardless of where they are located.

A capital markets union will give businesses greater choice and lower cost financing options and provide SMEs in particular with the funding they need, support the post-COVID-19 economic recovery and generate jobs, offer fresh possibilities for savers and investors, and build a more inclusive and impactful economy. In general, it will enable Europe to achieve its New Green Deal and Digital Agenda, strengthening the EU's global competitiveness and

autonomy, and making the financial system more robust so that it can better adjust to the UK's exit from the EU (What is capital markets union, 2020).
One the first objective of this plan is to increase access to equity and debt finance for EU enterprises. Looking at the council conclusions on the deepening of capital markets union we can read more in depth the aims for SMEs that Eu wants to reach through this program. Indeed, the council of the European union aims at finding:

- Measure to provide listing support and ways to decrease listing cost for small and medium companies.
- Strategy for the incentivization of availability, standardization and comparability of information;
- Ways to establish major pan-European private equity funds - cross-over (pre- and post-IPO) targeting SMEs (including start-ups and scale-ups) and, if required, means to leverage EU funds, also through Invest EU, to priority areas through co-investment (Council of the European union, 2019).

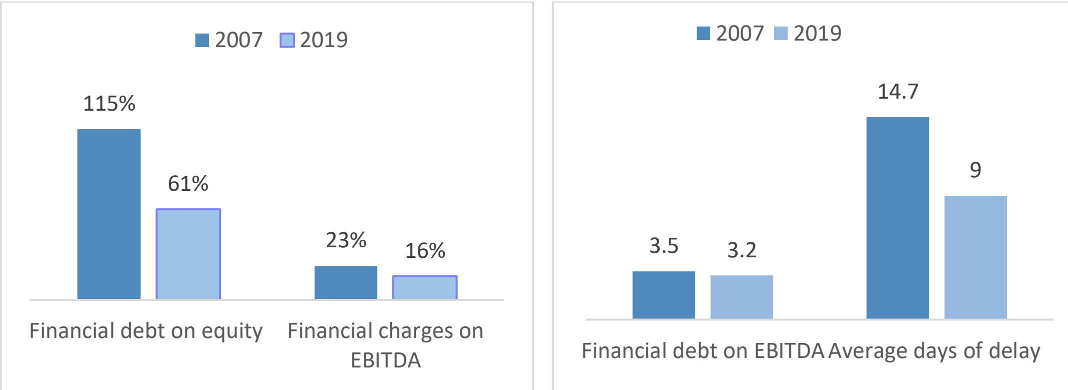
It is evident that Europe has understood the relevance of the role of SMEs for the economy but also that this kind of company in some cases are struggling to remain in the market. This holds also for small and medium company in Italy as we are going to see in the following paragraph.

2.2 The Italian SMEs: PMI

The report developed by Cerved has a key role in the analysis of the general situation. According to the latest available accounts, 158,688 companies meet the requirements of SME. Of these, 131,758 are small enterprises and 26,810 are medium-sized enterprises. SMEs account for 19.6% of enterprises who have deposited a good financial report and employ 4.2 million workers. Of these, 2.2 million work in small companies and the remaining 2 million in medium-sized companies (Cerved PMI, 2020).
After the crisis of 2007, as we have seen in the previous chapter, Italy has struggled to recover and the same holds for the Italian enterprises. After a momentum of partial return to normality, in the last years the situation has become worse as we can read in the executive summary of the Cerved report of 2019: the 2018 Cerved Report had shown that in 2017 the recovery had been consolidated with an acceleration in term of revenues and profitability of SMEs. After this peak, as stated by the data of the new Report in 2018 and in the first part

of 2019, the recovery has exhausted its momentum with regard to the growth of turnover and profits. The weaker economic situation, however, has not affected the risk profiles of companies, which further improved compared to the previous years as shown in the following graph (Chart 12).

Chart 12 – Index for financial strength of PMI before and after the 2008-09 recession



Source: Cerved report PMI 2020

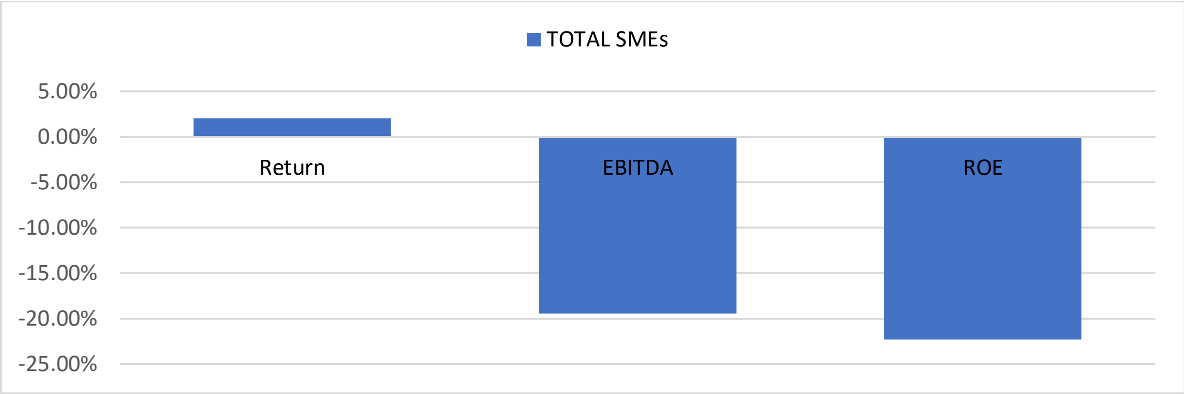
Apart from the analysis of the financial strength, in this context, SMEs will have to make significant investments to adapt to the new crisis code (Cerved PMI, 2019).

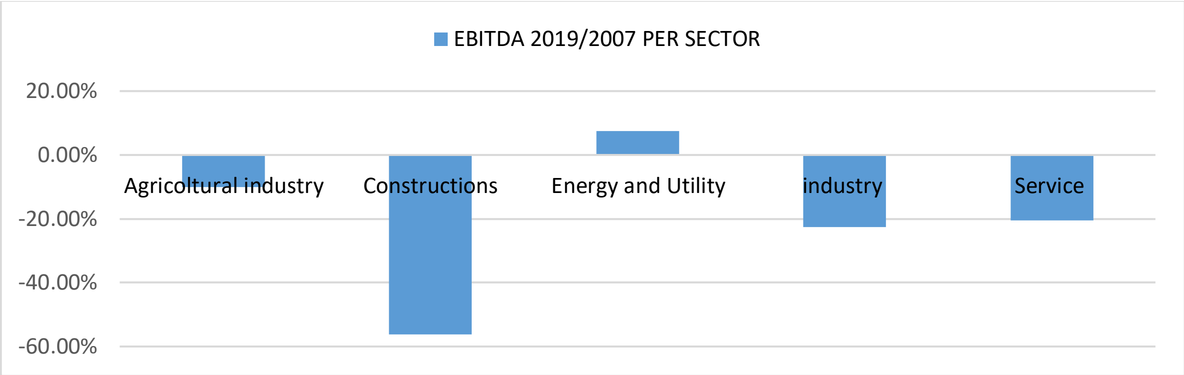
This report emphasizes the need for investments by enterprises and the already fragile situation, a situation that the pandemic hasn't helped. Looking at the 2020 Cerved report we can extrapolate that in 2019 the real turnover has increase in real term of 2.8% and the additional value with respect to the previous year is of 3.4%. This data together with the previous budgets states that the Italian system for SMEs has faced the COVID emergency after a decade characterized by slow and incomplete recovery. In real terms the turnover is back to the level of after 2007 but the profitability remains below (Chart 13) with a decrease in EBITDA[5] and Roe[6]. Most of the economic sectors have been affected, but as shown in the graph the worst one is the sector of constructions.

[5] "Margine operativo lordo" corresponds to EBITDA (earnings before interest, taxes, depreciation and amortization).

[6] The acronym Roe stands for return on equity.

Chart 13 - Billing gaps and margins after the crisis 2008-09: Rates of changes 2019/2007 in real terms

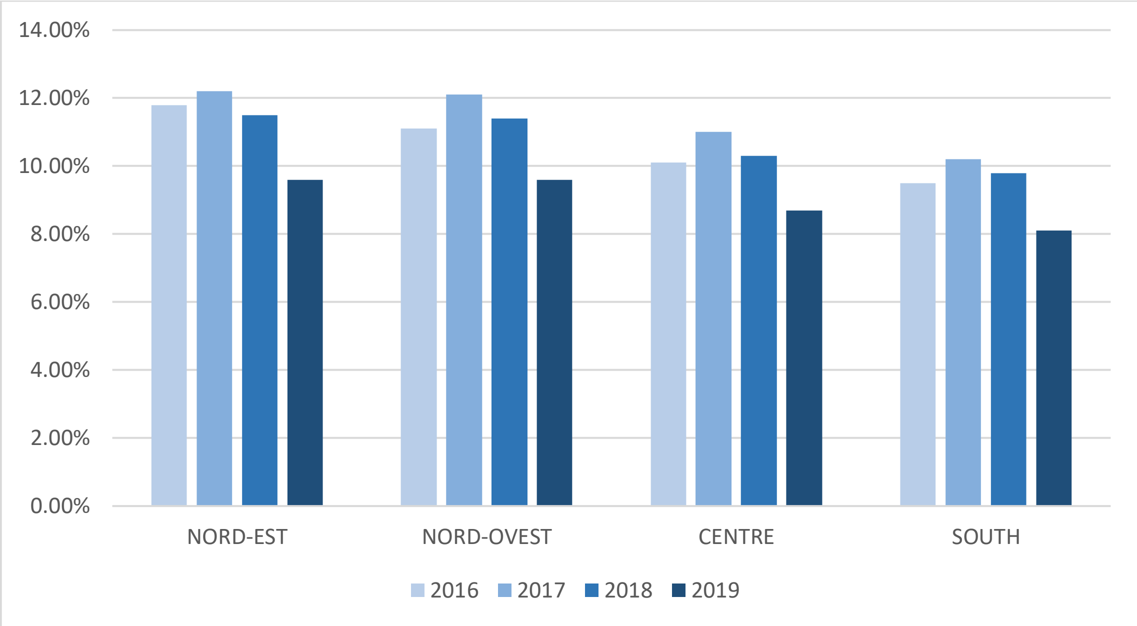




Source: Cerved report PMI 2020

Observing the next graph (Chart 14), extrapolated from the regional report of Cerved published in 2020, we can see that the net profitability, measured in terms of ROE, after the peak of 2017 (11.7%), fell in the next two years, losing seven tenths in 2018 (11%) and 1.7 points in 2019 (9.3%). At the end of 2019, the net profitability of SMEs in the North fell to 9.6%, about one point more than that of SMEs in central Italy (8.7%) and a point and a half more than that of the South (8.1%) (Rapporto regionale PMI 2020).

Chart 14 - Net profitability of SME (%ROE)



Source: Cerved regional report PMI 2020

Italian enterprises have entered the crisis already affected by the 2007 crisis, after which the recovery has been slow and incomplete with an additional negative peak after 2017. For these reasons, compared to other European countries the impact of the virus has been stronger and will require proper recovery measures that should be effective not only in the restoration of the overall loss in terms of earnings but also should influence and incentivize the growth and the development of small and medium enterprises.

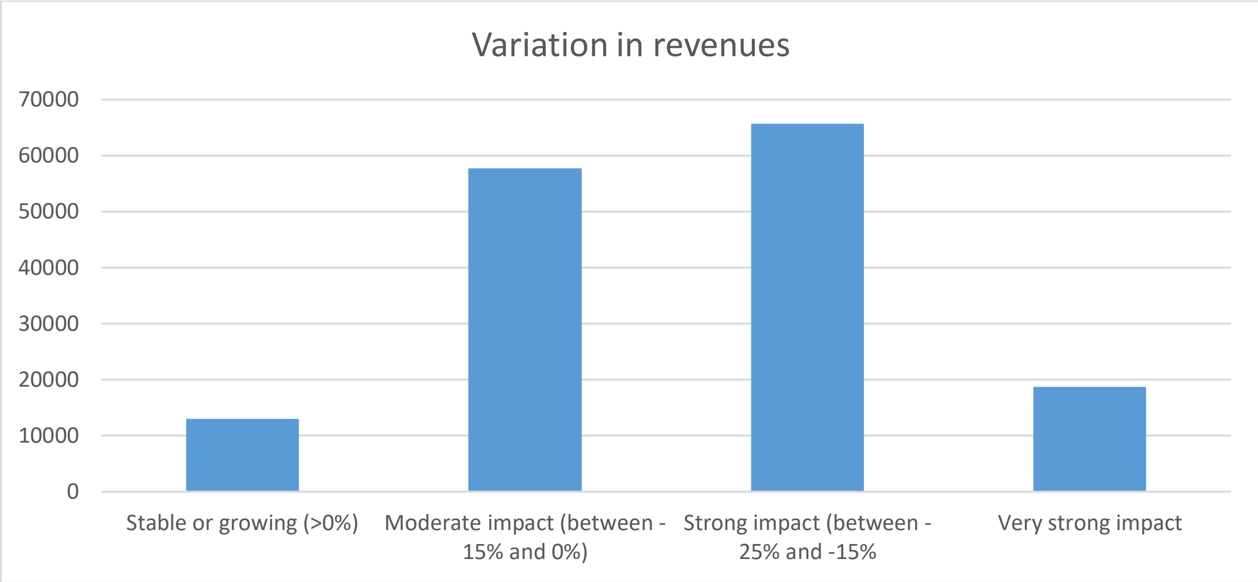
2.3 The heterogeneous impact of the crisis

The crisis started in March 2020 has had an impact on the entire economy, however not all sectors have been affected in the same way. We can define the crisis as heterogenous. In order to deeply understand the characteristics of the crisis and its general effects on the entire economy we are going to compare two reports: *The COVID- 19 Shock and Firm's R&D Plan: Evidence From The Recent Italian Experience* (Brancati, 2020) and *Cerved PMI Report* (Cerved 2020). The first report is based on a unique panel data on firms' behavior and performance that compares the results of two surveys. The first survey was conducted in January 2020 (one month before the first official cases of COVID-19 in Italy) and the second one refers instead to March of the same year, two weeks after the introduction of the initial lockdown policies (March 11, then revised in March 22) (Brancati, 2020). The

research starts from the 2019 Met survey and develops specific interviews to monitor the effects of the pandemic. The sample analyzed is composed of 7800 small and medium firms belonging to different industrial sectors. The questionnaire aims at evaluating the variation between present and future plans of companies after the start of the pandemic with an analysis of its effects mainly in 12 months. It is composed of a set questions on firms' future sales and R&D plans that use the exact same wording of the 2019- met survey, questions related to the revision of firm expectations due to COVID-19 outbreak as sales growth, employment and expenditure in tangible or intangible investments and also questions related to additional issues as manager self-assessment about perceived danger of the pandemic.
The conclusion of the report emphasizes a more severe shock for innovative and internationalized firms that reflected the heterogeneity nature of the crisis. Innovative and internationalized companies are characterized by a greater negative shift in terms of expected future sales and they also entered the pandemic with brighter expectations compared to the other types of companies. This heterogeneity is also reflected in firms' revision of R&D plans for the near future, as the former are characterized by higher percentage of eliminating preexisting plans of R&D projects (Brancati, 2020). So, what we can gather from this analysis is the perception of a an heterogenous crisis that has impacted especially internationalized and innovative firms.

On the other hand, the Cerved report defines an heterogenous crisis as in-between different industrial sectors. In the report SMEs are grouped into four clusters, depending on the expected impact on revenues. According to the COVID-Financial Impact, 13 thousand enterprises, belonging to sectors of the supply chain or sectors that have benefited from this particular phase, will be able to increase revenues in 2020 or keep them stable. At the extreme place, 19 thousand companies the crisis had a very intense impact so revenues are expected to fall by at least 25% in 2020: they are mainly companies operating in the tourism sector, catering, logistics and transport, in some industrial sectors. The remaining 124 thousand are divided into a group with moderate and strong impacts (Cerved PMI, 2020).

Chart 15 – number of SME for COVID impact on revenues



Source: Cerved report 2020

2.3.1 An in-depth overview of the perception of the crisis: A descriptive analysis

What we have analyzed previously provides the proof for an evident and severe shock for all companies but with some differences across companies according to their characteristics. For the purpose of better understand the impact of the crisis and its heterogeneous identity we can look more in depth at the data provided by Prof. E. Brancati. The descriptive analysis of the response of the surveys analyzed in the paper "The COVID-19 shock and Firms' R&D Plans: Evidence from the Recent Italian experience" provides interesting facts. The analysis developed in the following paragraph will focus on 12 different industrial macro sectors that are mostly composed of micro and small companies. The sectors that we can identify are the following (Table 5):

Table 5: Macro sector and their geographical representation

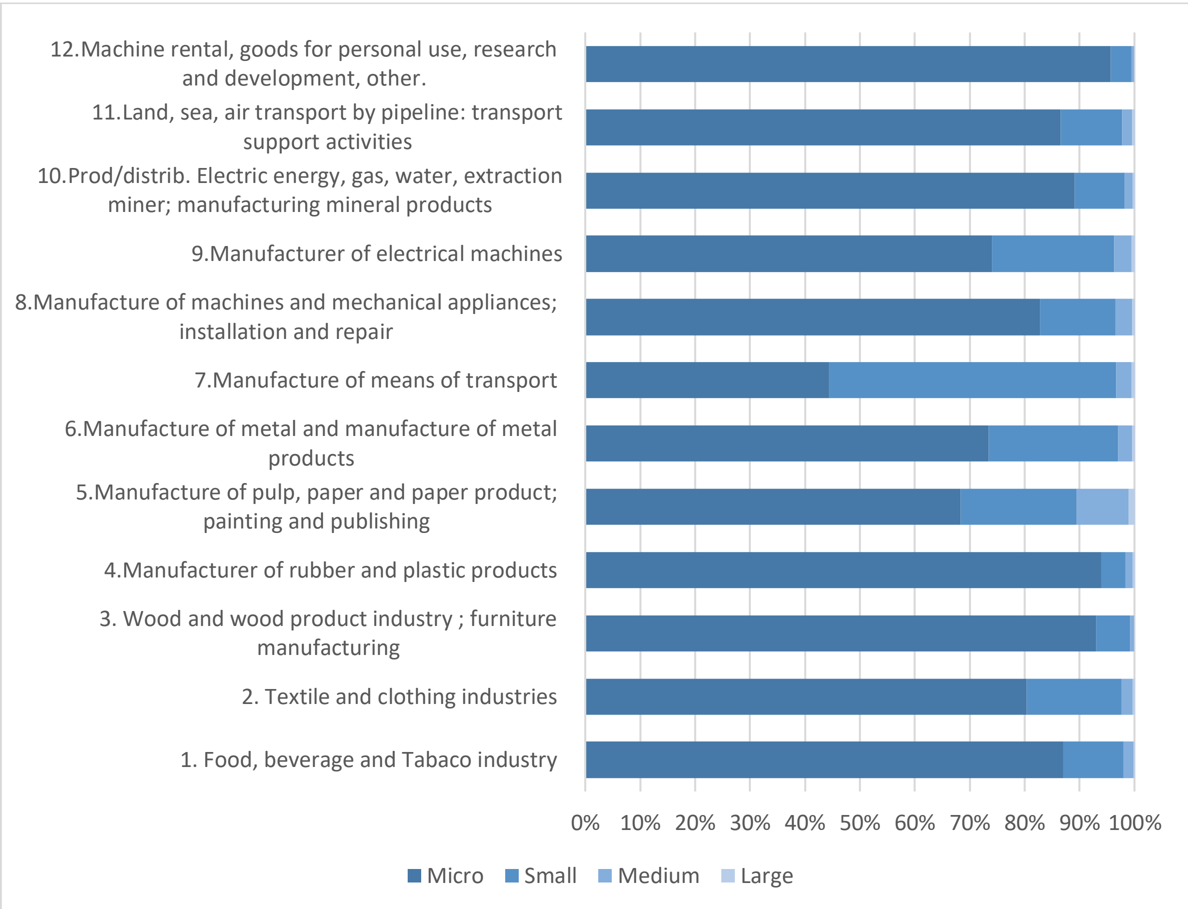
Macro sectors	**Geographical concentration**
1. *Food, beverage and Tabaco industry*	47% South and islands 18% Nord Est
2. *Textile and clothing industries*	32% Centre 28% North
3. *Wood and wood product industry; furniture manufacturing*	29% Nord Est 23% South and islands
4. *Manufacturer of rubber and plastic products*	32% Nord-Ovest 28% South and islands
5. *Manufacture of pulp, paper and paper product; painting and publishing*	36% Centre 22% South and islands
6. *Manufacture of metal and manufacture of metal products*	42% Nord Ovest 21% Nord Ovest
7. *Manufacture of means of transport*	59% Nord Est
8. *Manufacture of machines and mechanical appliances; installation and repair*	31% Nord Est 32% Centre
9. *Manufacturer of electrical machines*	36% Nord Est 36% South and islands
10. *Prod/distribution Electric energy, gas, water, extraction miner; manufacturing mineral products*	38% Nord-Est 25% South and islands
11. *Land, sea, air transport by pipeline: transport support activities*	45% South and islands 20% Nord Est
12. *Machine rental, goods for personal use, research and development, other.*	37% Nord Ovest 22% Nord Est

They represent only a sample of the entire framework of the Italian economy. However, they are a useful exemplification of the general Italian industry structure.

The geographical distribution of the companies is homogenous, slightly higher in Nord-Est and in the South and the islands (Sicily and Sardinia) of Italy.

Relevant for the analysis it is the distribution of micro, small, medium and large companies among sectors. On average 80% are micro companies composed of less than 9 employees, 16% are small companies with a number of employees between 10 and 49 and 2,58% are medium companies composed of less than 249 employees. The percentage of companies that can be defined as large (more 249 employees) is very low and equal to 0,39% (Chart 16). This information doesn't only demonstrate that what we are analyzing is relevant and coherent for the objective of the thesis, but it also emphasizes the general composition of Italian companies' demography. Italy as stated also in the Cerved report is indeed mainly composed by small and medium companies that operate in different sectors.

Chart 16: Sector composition



Source: elaborated by the author

The data gathered in the paper are divided between what has been collected in January (before the start of the pandemic) and what has been collected in the second survey conducted few months after the first lock down measures. We are going to analyze the information gathered from a macro sector point of view. The focus is related to the change in prospections for the internal returns of the companies for the next 12 months and the disruption of future research and development plans. In order to simplify the analysis, we will refer to the sectors through numbers 1 to 12 as reported in Figure 19. All data are reported in Appendix 1.

Starting with the analysis of the variation for the perception of future returns, it is fundamental to explain the structure of the surveys. Both are composed of 5 questions related to the expectation on return for the following 12 months: strong decrease (> -15%), decrease (-5/-15%), stable (+/-5%), increase (+5/15%) and strong increase (> +15%). The type of questions holds for the first and the second survey.

First of all, in almost all sectors, as sector 2 and 3, companies already expecting a strong decrease in the next 12 months in the first survey confirmed the future prevision also in the second one. The sectors where the percentage of firms that have confirmed the negative expectation on return is higher than 80% are 5 (sector 2,4,6,8,11). This first remark emphasize that the crisis hasn't had only had a negative impact on companies, otherwise we would have seen all sectors maintaining strong negative perceptions.

In sectors such as 1, 7 and 9 only 21,33% companies per sector on average have maintained the previsions of a strong decrease in returns. The impact of the pandemic in these sectors has improved the perceptions for the future returns. Of course, this is also consequence of type of business in which these sectors are involved in. For example, Sector 1 is the sector of Food, beverage and Tobacco; indeed, it has not been affected as much as other sectors consequence of the fact that brings into the market products that are essential and that have become even more important during the lockdown period.

Furthermore, we can observe that even if some companies have disrupted their previsions regarding strong increase in return, in sector 5 and 10 almost 35% of the companies that had predicted strong increase have maintained what stated in previous survey. These are the sectors involved in the production of paper and the distribution and production of energy and gas, two sectors that have probably felt less the impact of the crisis. Compared to the other sectors they represent an exception, in fact, in all the other sectors the situation is completely different. Almost none of the companies in each sector that had declared in first survey an expectation corresponding to a strong increase have maintained the same prevision. Most of the companies have shifted towards very negative or negative expectations. We can derive more information looking at the questions about the future R&D plans. Also in this case the same question is repeated with the same structure in both surveys before and after COVID -19, as it is reported in the following figure (Tale 6).

Table 6: Disruption of R&D plans

		SURVEY AFTER COVID	
SURVEY PRE COVID		No	Sì
		% di casi per riga	% di casi per riga
1.	No	96,80%	3,20%
	Sì	40,30%	59,70%
2.	No	96,10%	3,90%
	Sì	36,80%	63,20%
3.	No	97,00%	3,00%
	Sì	61,90%	38,10%
4.	No	83,90%	**16,10%**
	Sì	48,50%	51,50%
5.	No	91,00%	9,00%
	Sì	50,50%	49,50%
6.	No	99,20%	0,80%
	Sì	55,30%	44,70%
7.	No	93,20%	6,80%
	Sì	28,20%	71,80%
8.	No	94,40%	5,60%
	Sì	33,20%	66,80%
9.	No	95,00%	5,00%
	Sì	26,20%	73,80%
10.	No	94,00%	6,00%
	Sì	48,90%	51,10%
11	No	88,60%	**11,40%**
	Sì	66,90%	33,10%
12	No	89,70%	**10,30%**
	Sì	42,20%	57,80%

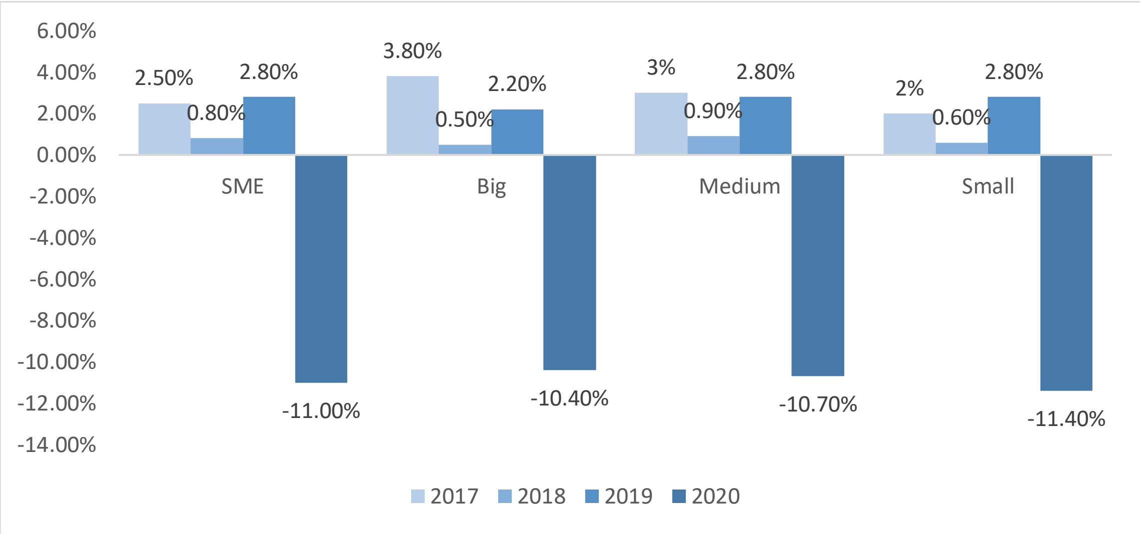
Source: data provided by Prof. E. Brancati

As in the previous analysis numbers correspond to each one of the sectors as reported in Figure 19. The first relevant data to be observed is that in almost all sectors where companies that did not have the prevision of investing in future R&D plans, their forecast haven't changed. Nevertheless, we see a slight change towards the start of these types of plans in sectors 11 and 12 where the percentage of change toward the "yes "answer is around 10%, the two sectors correspond to Land, sea, air transport by pipeline: transport support activities and Machine rental, goods for personal use, research and development and others. Additionally, also in sector 4, we see a change towards the implementation of R&D plan of 16% in relation to the companies that before weren't planning of implementing plans in research and development. Looking instead at the companies in each sector that at the first survey answered positively, on average only 45 % of those has maintained the same answer also in the second survey. This emphasize the disruption at the beginning of the crisis of most research and development plans.

2.3.2 Financial statement analysis of the SMEs

After an analysis of the heterogenous impact of the crisis on macro sector based on the data of "*The COVID- 19 Shock and Firm's R&D Plan: Evidence From The Recent Italian Experience"* (Brancati, 2020), we are going to see more in depth the effective consequences based on the financial statement and on the projects of the company for the future published and reported in the Cerved analysis. The following report provides a different perspective and emphasize the industrial sectors that have been better off and worse off.
The negative trend anticipated in the previous research has had a real confirmation. Looking at the following graph we can see respect to previous year a general decrease in the average return on revenues for all size of firms, with and average decrease of 11 points.

Chart 17: variation in turnover in the last years for size of companies



Source: Cerved Group

As we said before the effects haven't been homogenous, if most of the firms have had a strong decrease in returns some had an increase in turnover due to the shift of the society to different sectors. The most affected companies have been the ones belonging to travel agency and tour operator industrial sector due to the impossibility of travelling around the world. In general, all the firms involved in the tourism sectors have felt the crisis more than the rest. Looking at Table 7 we can perceive that the industrial sectors that have been better off with the crisis have been those involved in the e-commerce and those involved in the medical and pharmaceutical sectors.

Table 7: Top five worst industrial sectors

STRONGER DECREASE IN RETURNS				
Industrial sectors	Revenues 2020/2019	EBITDA	ROA	LEVERAGE
Travel agency and tour operator	-51,3%	-221,1%	-7,8%	78,7%
Hotels	-47,1%	-87,2%	-2,1%	84,8%
Organizations of meeting	-40,0%	-87,4%	-0,8%	49,8%
Parking management	-38,3%	-83,1%	-2,5%	99,6%
Extra hotel accommodations facilities	-37,9%	-54,5%	0,6%	90,9%

Source: Cerved Report 2020

Table 8: Top 5 best industrial sectors

STRONGER INCREASE IN RETURNS				
Industrial sectors	Revenues 2020/2019	EBITDA	ROA	LEVERAGE
e-commerce	23,8%	39,2%	3,0%	70,9%
Pharmaceutical products	7,6%	14,7%	12,4%	33,1%
Modern food distribution	6,6%	14,9%	2,5%	86,5%
pasta	4,8%	8,3%	3,3%	112,4%
Cleansing product	3,1%	4,0%	8,6%	34,8%

Source: Cerved Report 2020

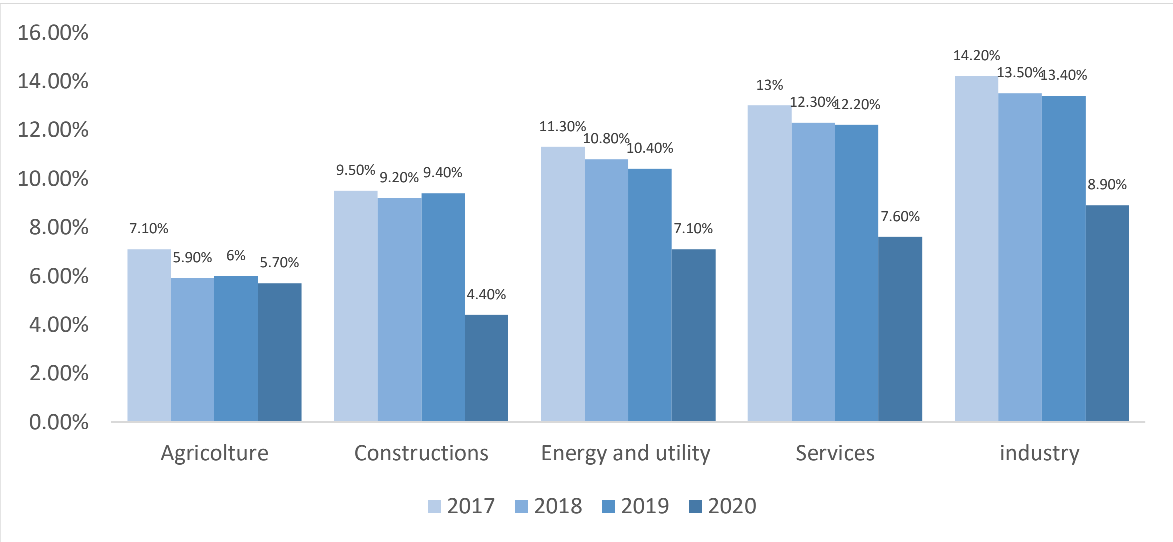
We can immediately perceive form Table 8 the improvement for the industrial sector of E-commerce, a sector that has expanded all across the world. Across countries the shifts from brick-and-mortar retail to e-commerce are very significant. Between the first and second quarter of 2020 the share of e-commerce in total retail spiked to 16.1% in the united states. between the first and second quarter of 2020. Also, in the UK between the first half of 2018 and the first half of 2020, the share of e-commerce in retail increased from 17.3% to 20.3% and then continued in the second half of 2020 to further growth to 31.3%. Similar changes are also observed for other regions such as China, where online retail's proportion of total retail sales accrued between January and August 2020 rose to 24.6%, up from 19.4% in August 2019 and 17.3% in August 2018 (E-Commerce in the time of COVID 19, 2020). The e-commerce sector has been a reliable factor throughout the crisis of the last months. Also, in Europe, E-commerce has been helping people in countries with even the strictest lockdown measures to get access to goods (Impact of the Corona Virus on E-commerce, 2020). In Italy the shifts toward e-commerce has been considerable, as we can read from an article written by the Italian journal Ansa that states “product and sales are moving online, e-commerce has triplicated the number of consumers" (COVID – 19 and E- commerce, the growth of online purchases, 2020).

It's relevant to analyze the index taken in consideration in the previous table (table 7-8). The EBITDA is a relevant index for the business profitability. Relative to the industrial sectors that have been more affected by the pandemic it has decreased drastically reaching values of -221,1% compared to 2019 as it is for travel agency and tour operator. Indeed, it's evident for that there has been a strong decrease in EBITDA for the sectors that have been worse off and a strong increase for the sectors that have been better off.

It is interesting also to analyze the changes on ROE that represents the ability of the business to generate income from the equity available. In 2019, net profitability increased in the sectors with the lowest indices as agriculture and construction, but declined in the others.

In all sectors as shown in Figure 26 it's evident the decline of ROE in 2020. The least affected is the agriculture sector, that remains broadly stable at around 6%. This industry, which has historically always shown the highest profitability, maintains its position, also showing the relatively weaker decline. The most affected sector is definitely the sector of constructions with a decrease of 5 points in percentage respect to the previous year (Angelino A., Emiliani D., Romano G., Caporali A., Mele G., Ungaro F.,2020).

Chart 18: Changes in ROE before taxes of PMI divided per industrial sectors

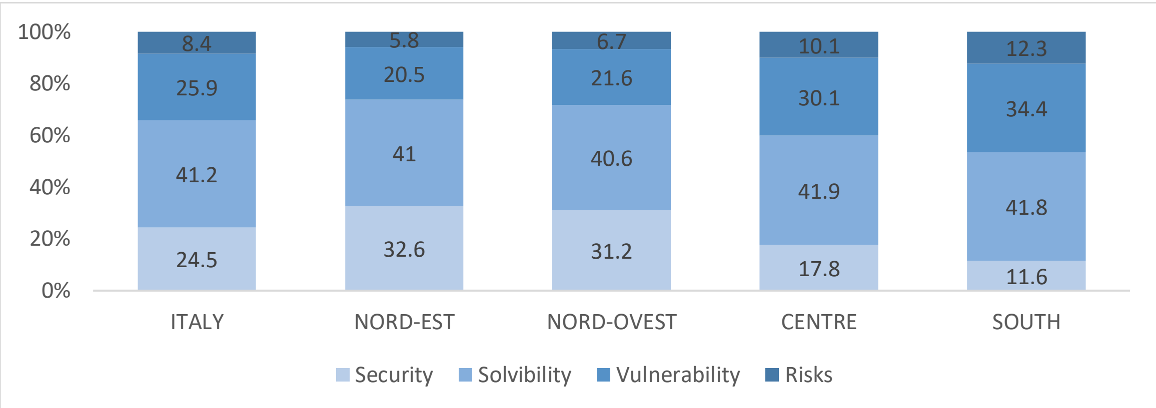


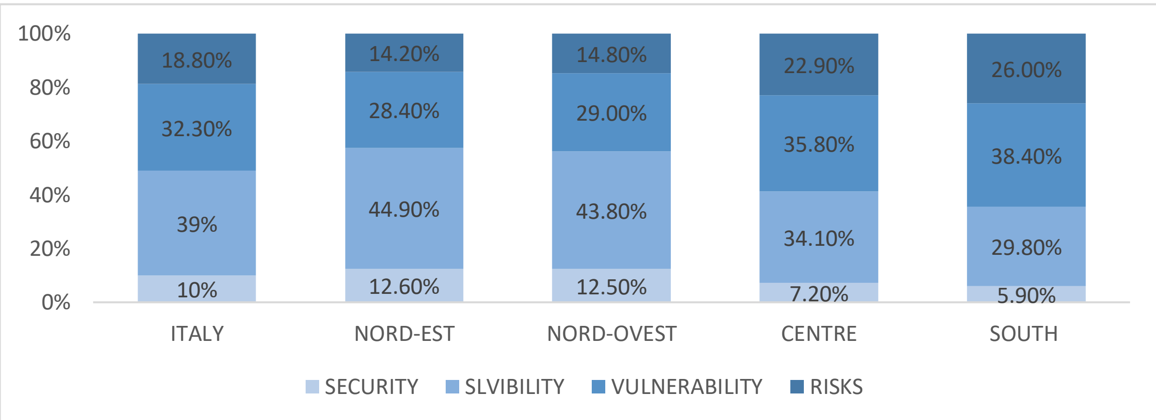
Source: Cerved Report

Consequence of the variation in the average profitability is the increase of businesses that in 2020 will close the financial statement with a loss. The percentage shifts from 22,7% in 2019 to 39% in 2020, value that corresponds to almost four out of ten SMEs. Consequently, in the Cerved report it is estimated that firms in order to cover the loss and the need for liquidity will increase the level of debts. What we can extrapolate from the Cerved regional report is an increase in the default probability for SMEs.

The share of companies that, according to the Cerved Group Score, are at greater risk of insolvency could increase from 8.4% to 13.9%. If we also consider the vulnerable SME population, more than half of SMEs could be characterized by a fragile profile (compared to a share of about a third before COVID). As a result of more fragile fundamentals and despite an initial shock on revenues more contained thanks to a specialization in sectors less exposed to the impacts of the health crisis, the gap in terms of risk of the regions between the South and the rest of Italy could expand further: in a pessimistic scenario, would be classified as risky 26% of southern SMEs (64.4% considering vulnerable and risky) and 22.9% of those of the Center (58.7%), against percentages equal to 14.2% (42.6%) in the North-East and 14.8% in the North-West (43.8%) as we can see in the following graph (Chart 19) (Angelino A., Emiliani D., Romano G., Caporali A., Mele G., Ungaro F., 2020).

Chart 19: Riskiness of SMEs pre and post COVID (worse scenario)





Source: Cerved Group Score

2.4 Change in company's demography

As we emphasized in the first part of this chapter the recovery of the Italian SME system after the double crisis of 2009 and 2012 was interrupted even before COVID-19. The sustained growth in the number of SMEs after the crisis of 2007 has suffered a first slowdown in 2018, and then further slowed down in 2019. This is linked to the dynamics of our economy which, according to estimates, has led to an increase in exit from the market and a reduction in birth rates, with the maintenance of the stock of SMEs due exclusively to the dimensional development of micro-enterprises (Cerved PMI, 2020). The world of enterprise demography aims at measuring the size of a population of enterprises and the components that transform their structure from one period to another. The objectives of enterprise demography are the identification of demographic components, the analysis of survival and development, in a temporal perspective, the composition of the population for certain characteristics such as size and sectoral structure (Business' demography, 2020). We can estimate the shock suffered SMEs on the base of four different components.

Figure 1

Source: author

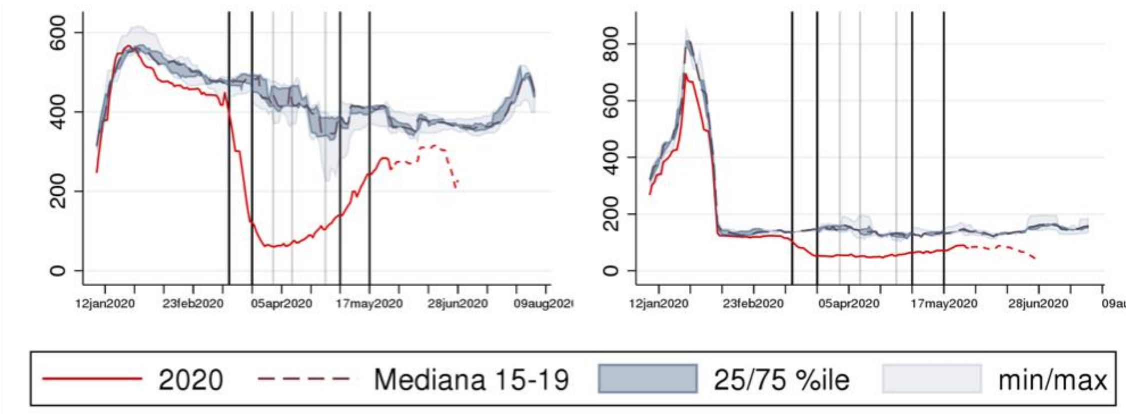
Incoming migration refers to companies that have entered the perimeter, that is microenterprises that have grown into SMEs and large enterprises that have re-joined whilst outgoing migration refer to companies outside the perimeter, that is, SMEs that have grown to become large or have shrunk to micro-enterprises

Based on the estimates made on the balance sheets filed at the time of drafting the Report and other demographic data, in 2019 the estimated number of SMEs operating in the Italian production system stands at 159 thousand (+0.7% compared to 2018, compared to +1.2% in the previous year), value that compared to the 2007 level is well above (149 thousand).

The growth in the number of small and medium enterprises was slowed down by birth and death figures, which generated a negative balance of 1,396. The number of new SMEs was reduced to 8,534 (-4.4% on an annual basis), while the number of SMEs leaving the market increased (9,930, or +5.6%). Conversely, the balance between inward and outward migration from the SME periphery was positive (+2,494), at slightly higher levels than in 2018 when upsize from micro to SMEs exceeded the downsize from SME to micro by 2,414 units (Cerved Report, 2020). The pandemic has had strong repercussions on the Italian enterprises' demography. The situation for the year 2020 is worse than 2019; starting the investigation from the lockdown period through the report developed by Prof. Alessandro Mistretta and published by the Italian Bank the last December we can identify two main effects on the Italian enterprise demography: the first one is a strong decrease in the number of enterprises to subscribe in the Companies Register, and the second one is the decrease in the number of companies that have stopped operating. It is conceivable that the restrictions on mobility imposed by the government or the expectation of support measures may have led companies to postpone the carrying out of administrative practices or to restrict them to those strictly necessary. The change is evident compared to the trend of the past years, as we can see in the following graph based on Infocamere[7] data (Chart 20). The Lockdown and the measures that the government has took into action have created an abnormal situation.

Chart 20: New registrations and terminations of enterprises of 2020

New Registration Ceased



Source: Italian Bank notes on COVID-19

The second crucial aspect of this period is the increase in number of communications related to the change of the ATECO[8] code, especially for firms belonging to the manufacturing sector and based in the northern regions. There may be several reasons for this increase: actual productive reallocation, in view of the expected growth in demand for a given asset

[7] Infocamere collects the information of the Register of Companies held at the Italian Chambers of Commerce. The Register of Companies is a public computer register in which Italian companies or those with registered office or local unit are required to register in Italy engaged in an economic activity directed at third parties (excluding the liberal professions governed by professional registers).
[8] ATECO it is the system for classification of economic activities developed by Istat.

or service; a missed or erroneous (or simply obsolete) classification, which became apparent in the time at which the undertaking had to assess whether it could continue to operate under the DPCM of 22 March; action to prevent the suspension of its activities, where change of code allowed to reclassify itself as an activity 'essential' (Table 9).
The largest increase is recorded for transits from the codes of activities classified as “The non-essential” during the lockdown to the codes related to the activities classifies as “essential” percentage that corresponds to 10,2 per cent. compared to 3,4 observed on average for the same codes in the same period of five years previous.

Table 9: Transitions of enterprises during Lockdown period

		T					
		2015-2019			2020		
		Not essential	Essential	Not Classified	Not essential	Essential	Classified
T-1	Not essential	8.4%	3.4%	0.0%	14.7%	10,2%	0.0%
	Essential	3.7%	7.1%	0.0%	5.3%	11.5%	0.0%
	Not Classified	41.4%	36.6%	0.0%	29.1%	29.1%	0.0%

Source: Italian Bank notes on COVID-19

As emphasized in the report by Prof. Mistretta, the analysis of these statistics overall indicates that the changes of ATECO code are at least partly to be traced back to the measures introduced during the emergency period, favored by the fact that “essential” activities have been distinguished from “non-essential” sometimes using a very high level of detail in the ATECO classification. For example, think of code change from sub-category 13.96.20 (Making tapes, labels, etc.) to 13.96.10 (manufacture of other technical and industrial textiles;) or 28.29.90 (Manufacture of automatic machines for dispensing, packaging and for packaging; “not essential”) to 28.29.30 (Manufacture of general-purpose machinery and other mechanical equipment n.e.c.a; “essential”).
Looking at a recent report by Istat[9] we can perceive the situation of Italian enterprises between June and October 2020. The 78,9% of the enterprises protagonists of the survey are

[9] National Statistical institute

micro-enterprises, 18,6% belong to the segment of small while they are about 22 thousand average (50-249 employees) and 3 thousand large (250 employees and more) that together represent 2.6% of the total. More than half of the companies are active in the North (29.3% in the North-West and 23.4% in the North-East), 21.5% in the Centre and 25.9% in the South. What is derived from the survey is summarized in the next table (Table 10).

Table 10: Enterprises on the base of the state of activity between the 23rd of October and the 16th of November 2020

	Territorial division				Total	
	Nord-Ovest	Nord-Est	Centre	South	Number	%
Totally open	70,3	71,1	66,3	67,5	702.847	68,9
Partially open	22,7	21,2	27,0	25,2	243.988	23,9
Closed with plans to reopen	5,4	6,6	4,8	5,0	55.460	5,4
Closed with plans to shut down	1,6	1,1	1,8	2,3	17.491	1,7

Source: Istat Report

During the survey, 68.9% of companies declared that they were in full operation, 23.9% that they were partially open - carrying out their activities under limited conditions in terms of space, schedules and customer access. On the other hand, 7.2% said they were closed: they were about 73 thousand companies, which account for 4.0% of employment. Of these 55 thousand plans to reopen while 17 thousand (equal to 1.7% of companies and 0.9% of employees) do not provide for a reopening. 85% of "closed" production units are micro-enterprises and are concentrated in the non-commercial services sector (58 thousand units, equivalent to 12.5% of the total), in which the share of partially open companies is also high (35.2%). Sports and entertainment activities have the highest incidence of closure, followed

by hotel and accommodation services and gambling houses. A significant proportion of companies currently not operating is also found in the catering sector and in the retail sector. 28.3% of closed retail stores do not plan to reopen compared to 11.3% of accommodation facilities, 14.6% of sports and entertainment activities and 17.3 non-operating catering services undertakings. Between the enterprises currently not operating, those present in the South are to greater risk of definitive closing: 31.9% of the closed enterprises (pairs to 6 thousand unit) previews not to reopen, regarding 27.6% of the Center, 23% of the North-west and 13.8% of the North-east (24% in Italy) (A. Framondi, Istat, 2020).
As we can perceive the consequences of the pandemic have led many enterprises and mainly the micro enterprises to close permanently or temporally. Nevertheless, of the restoration provided by the government the situation remains uncertain and critical.

2.5 Summary

In order to understand what has really been the impact on Italian companies is useful to summarize what stated in the chapter. First of all, we understood that Italian enterprises have never been able to completely recover from the 2007 crisis. Their situation has been worse off by an additional negative peak in 2017 that has led many Italian companies to enter the crisis powerless. This piece of information allows us to better understand the real impact on all aspects of small and medium companies that have been gathered through the following key Resources together with other additional piece of information: "The COVID-19 shock and Firms' R&D Plans: Evidence from the Recent Italian experience" (Brancati, 2020), together with the additional data extrapolated from the survey and the Cerved PMI report of 2020.
In relation to the general framework of the crisis we can state the following: The crisis has had an impact of the entire economy but the shock has been heterogenous:

1. The report "The COVID-19 shock and Firms' R&D Plans: Evidence from the Recent Italian experience" has developed the forecast for return on revenues in the next months and the investment in R&D plan stating that the pandemic has had mainly an impact on internationalized and innovative firms.
2. Looking instead at the descriptive analyses developed by the author on the additional data coming from the survey based on report by Prof. E. Brancati we can also deduct the following assumptions:
   - All sectors analyzed have been affected even if the overall impact is heterogenous

- In relation to forecast for the following 12 months in economic returns most sectors have changed their perspectives negatively but there are some exceptions correlated with the different industrials sectors
- In relation to the disruption of R&D plans most companies without any plans have maintained the same strategy, while almost half of the companies that before the crisis were planning on developing new R&D project disrupted these projects. The perception of very negative consequences has led many economic sectors to stop investing in innovation as a consequence of the fear of uncertainty caused by the pandemic.

These assumptions are enforced by the analysis of the 2020 SMES Cerved report. It emphasizes the negative but heterogenous impact of the crisis. The key deductions are the following:

1. There has been a general decrease in the average return on revenues of 11 points for all size of firms.
2. According to the type of sector firms have had a more negative or positive impact after the crisis: The most affected companies have been the ones belonging to travel agency and tour operator whilst looking at the other side the industrial sectors that have been better off with the crisis have been those involved in the e-commerce and those involved in the medical and pharmaceutical sectors.
3. These information are evident also in the analysis of the financial statements of the companies:
    - There has been a strong decrease in EBITDA for the sectors that have been worse off and a strong increase for the sectors that have been better off.
    - In all sectors it’s evident the decline of ROE in 2020. The least affected is the agriculture sector, that remains broadly stable at around 6%.
    - There is an increase in the number of businesses that in 2020 will close the financial statement with a loss.
    - There will also be increase in the default probability for SMEs
    - The gap in terms of risk of the regions between the South and the rest of Italy could expand further

Finally, the analysis of the company's demography has led to the following conclusions:

1. There has been an increase in exits from the market and a reduction in birth rate
2. There has been a strong decrease in the number of enterprises to subscribe in the Companies Register
3. There has been also an increase in number of communications related to the change of the ATECO code, especially for firms belonging to the manufacturing sector and based in the northern regions
4. 85% of "closed" production units are micro-enterprises and are concentrated in the non-commercial services sector.

CHAPTER 3: Future expectation

In this chapter we are going to provide an overview of future expectation for the world economic outcome in continuity with what stated in the first chapter. As reported in the 2021 BCE bulletin, prospects for the world economy continue to be shaped by the pandemic as the evolution of the virus and its consequences remain uncertain despite the advent of the vaccine. According to the macroeconomic projections formulated in March 2021 by the ECB experts, after the recession following the outbreak of the coronavirus pandemic, the international economy showed a faster than expected recovery. However, at the turn of the year the adverse factors for growth then intensified when the resurgence of the infections caused governments to impose lockdown measures. These new measures are already visible on world growth. Indeed, the pandemic is confirmed as the main factor determining future economic trends (Economic Bulletin 2021). In order to have a complete view of world situation we are going to start our analysis of the forecasts with an overview of the world situation and then we will focus on the Euro area and more specifically on Italy.

Looking at global growth, after an estimated 3.5 percent contraction in 2020, the global economy is projected to grow 5.5 percent in 2021 and 4.2 percent in 2022. For the year 2020 the estimate is higher of 0.9 percentage points compared to the projection done in October world economic outlook. The growth forecasts for 2021 have been revised up of 0.3 percentage point as a consequence of the increase in policy support in few large economies and the strengthening caused by the vaccination campaign. Coherently with the expectation on the recovery of global activity, global trade volumes are expected to grow about 8 percent in 2021 and then decrease to 6 percent in 2022. Merchandise volume is projected to recover faster compared to service trade which is consistent with subdued business travel and cross-border tourism until transmission declines everywhere. Even if there is an expected recovery in 2021–2022, output gaps won't probably close until 2022. In line with the ongoing negative output gap, inflation is perceived to remain underdone during 2021-2022. Inflation is expected to remain subdued during 2021-22, consistent with continued negative output. Inflation values are expected to remain below the central bank target of 1.5 percent in advanced economies and just over 4 percent in emerging markets and developing economies (World Economic Outlook update January 2021, International monetary Fund). Recovery strength is expected to vary meaningfully across countries, in correlation with their access to medical interventions, policy support and structural characteristics. A complete overview of the overall economic output expectation and the variation is present in the following table (Table 11).

Table 11: Overview of the world Economic outlook projections

					Difference from October 2020 WEO Projections 1/		Q4	over Q4 2/	
		Estimate	Projections				Estimate	Projections	
	2019	2020	2021	2022	2021	2022	2020	2021	2022
World Output	**2,8**	**–3,5**	**5,5**	**4,2**	**0,3**	**0,0**	**–1,4**	**4,2**	**3,7**
Advanced Economies	**1,6**	**–4,9**	**4,3**	**3,1**	**0,4**	**0,2**	**–3,9**	**4,6**	**1,9**
United States	2,2	–3,4	5,1	2,5	2,0	–0,4	–2,1	4,0	2,0
Euro Area	1,3	–7,2	4,2	3,6	–1,0	0,5	–6,8	5,8	2,0
Germany	0,6	–5,4	3,5	3,1	–0,7	0,0	–5,3	5,2	1,7
France	1,5	–9,0	5,5	4,1	–0,5	1,2	–8,2	7,4	2,0
Italy	0,3	–9,2	3,0	3,6	–2,2	1,0	–8,3	4,2	2,3
Spain	2,0	–11,1	5,9	4,7	–1,3	0,2	–9,8	7,1	2,0
Japan	0,3	–5,1	3,1	2,4	0,8	0,7	–2,3	2,7	1,6
United Kingdom	1,4	–10,0	4,5	5,0	–1,4	1,8	–8,3	6,0	1,9
Canada	1,9	–5,5	3,6	4,1	–1,6	0,7	–4,0	3,7	2,7
Other Advanced Economies 3/	1,8	–2,5	3,6	3,1	0,0	0,0	–2,2	4,5	1,9
Emerging Market and Developing Economies	**3,6**	**–2,4**	**6,3**	**5,0**	**0,3**	**–0,1**	**0,9**	**3,7**	**5,4**
Emerging and Developing Asia	5,4	–1,1	8,3	5,9	0,3	–0,4	3,2	3,8	6,4
China	6,0	2,3	8,1	5,6	–0,1	–0,2	6,2	4,2	6,0
India 4/	4,2	–8,0	11,5	6,8	2,7	–1,2	0,6	1,7	7,8
ASEAN-5 5/	4,9	–3,7	5,2	6,0	–1,0	0,3	–3,2	5,2	6,1
Emerging and Developing Europe	2,2	–2,8	4,0	3,9	0,1	0,5	–2,7	4,8	3,0
Russia	1,3	–3,6	3,0	3,9	0,2	1,6	–4,6	5,3	2,6
Latin America and the Caribbean	0,2	–7,4	4,1	2,9	0,5	0,2	–4,8	2,3	2,8
Brazil	1,4	–4,5	3,6	2,6	0,8	0,3	–1,9	1,6	2,6
Mexico	–0,1	–8,5	4,3	2,5	0,8	0,2	–5,4	2,2	2,4
Middle East and Central Asia	1,4	–3,2	3,0	4,2	0,0	0,2	. . .	. . .	. . .
Saudi Arabia	0,3	–3,9	2,6	4,0	–0,5	0,6	–3,1	3,5	4,0
Sub-Saharan Africa	3,2	–2,6	3,2	3,9	0,1	–0,1	. . .	. . .	. . .
Nigeria	2,2	–3,2	1,5	2,5	–0,2	0,0	. . .	. . .	. . .
South Africa	0,2	–7,5	2,8	1,4	–0,2	–0,1	–6,2	2,8	0,6

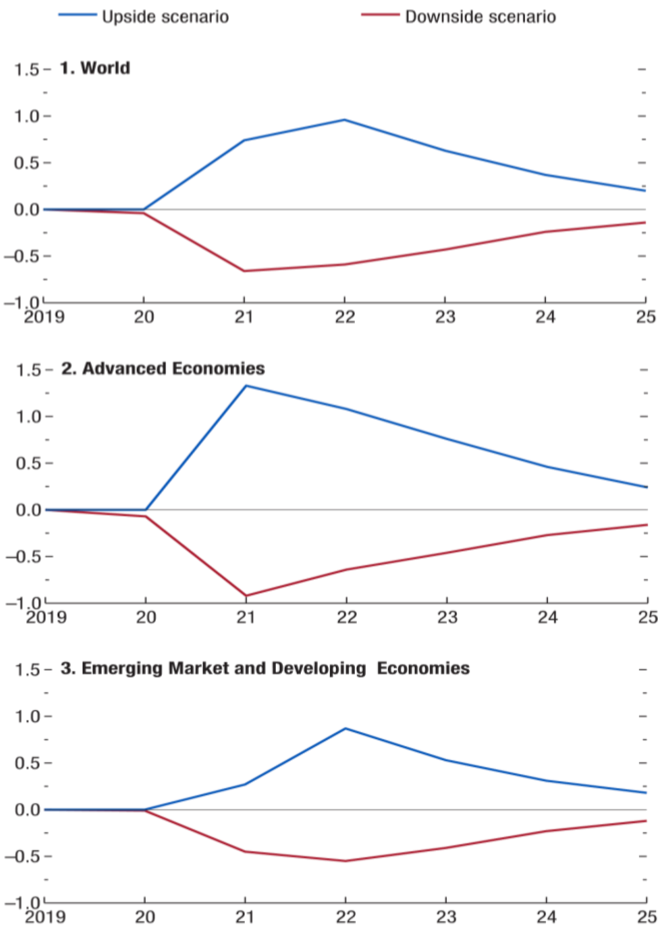
Source: World economic outlook, January 2021 Update

Given the high level of uncertainty the International Monetary Fund has developed two different scenarios using the International Monetary Fund ’s G20 Model. Both scenarios focus on the key unknowns driving the perspectives: the incidence of COVID infections and the efficacy of the vaccine launch. The key elements that can be identified are either positive or negative as they influence positively or negatively the real GDP for world economy.

Positive factors are mainly correlated with the vaccine manufactures, distribution and effectiveness of therapy. An effective development of vaccines could let the world reach the end of the pandemic before the expectations leading to an increase in confidence for households and firms. This would imply stronger consumption, investment and employment recoveries. Negative factors are correlated with the containment of the virus. Slower-than-expected progress in medical interventions could have a negative impact on hope for a comparatively quick exit from the pandemic and undermine confidence. In a further twist, if policy support is withdrawn before the recovery takes hold, bankruptcies of valuable but illiquid firms could rise, bringing increase unemployment and income losses. The resulting tightening of financial conditions could enhance the rollover risks for fragile borrowers, add to the existing large number of economies in debt distress, and boost insolvencies among businesses and households (International monetary Fund, January 2021).

The different scenarios are represented in the following figure (Chart 21). The first provides a comparison of the upside scenario and downside scenario for the forecasts of the world Real GDP. The second one deals with advanced economies and the last one provides the comparison for emerging markets and developing economies.

Chart 21: Scenario figure, Real GDP



Source: International Monetary Fund, G20 model simulations

The differences in the two scenarios are mainly consequence of the speed of the vaccination process. For the positive scenario the level of global production rise over trend baseline by about 3⁄4 percent in 2021, growing to nearly 1 percent above trend baseline in 2022. The recovery takes place faster in the advanced economies as those countries receive vaccines before the emerging economies (International monetary Fund, January 2021).

3.1 Forecasts for the Euro area

European countries are still firmly in the grip of the pandemic. In general, even if in the nearest term European economies are expected to grow less than the forecast, the overall growth in the European economy is set to resume this spring and have its momentum in the summer. External demand is also expected to sustain the rebound as the prospects for the world economy brighten. These beneficial factors are expected to enable the EU economy to regain its pre-crisis level of output within the projection timeframe. The uncertainty and risks that surround this basic projection will remain high and critically related to the development of the pandemic and the rate, effectiveness, and efficiency of immunization implementation (European commission, Winter 2021)

Looking at the variation of gross domestic output in the fourth quarter of 2020, GDP in the euro area fell less than expected (-0.7%), while the fall in economic activity in 2020 stood at 6.6%. The second wave of contagion in the autumn prompted national governments to adopt further social distancing measures, the intensity of which, however, varied from country to country. The negative effects primarily affected the service sector, whilst the impact on industry was milder, thus mitigating the fall in GDP. On the demand side, private consumption fell sharply in the fourth quarter (down 3.0%), representing the main negative contribution to GDP growth. Gross fixed investment, on the other hand, rose (up 1.6%). Similarly, to the containment measures, the effects on the economy were rather heterogeneous between countries. In Italy and France GDP fell by 1.9% and 1.4%, respectively, whilst in Spain (up 0.4%) and Germany (up 0.3%) the recovery continued, albeit at a slower pace than in the previous quarter.

In the first few months of the year the manufacturing sector showed positive signs. In January industrial production rose (up 0.8% on the previous month).

previous month). France and Italy reported the strongest increases, while in Spain and Germany production contracted slightly. In February, the ESI indicator increased, driven by improvements in the manufacturing sector, which were spread across all components. For the other sectors, however, the increase was more limited. The short-term outlook is very uncertain, especially for the service sector. The start of vaccination campaigns in countries in the area is a positive sign for expectations. However, from the beginning of March onwards, the pandemic situation began to worsen almost everywhere with a resumption of containment measures in some countries. In any case, these negative effects are expected to have only a transitory impact on the economy. Industrial production is expected to register an economic increase of 1.6% in the first quarter of 2021 and then decelerate between April and June (+1.2%) when the growth rate on an annual basis will be over 24%, compared to the same months of 2020 marked by the presence of the lockdown period, which had characterized almost all countries in the area. In the third quarter of 2021, the economic dynamic would register a further improvement (+1.3%) (Eurozone Economic Outlook, 2021)

Table 12: Prevision for the Euro Area

	2020	**T1 21**		**T2 21**		**T3 21**	
		t/t	a/a	t/t	a/a	t/t	a/a
Industrial production	-8,5	1,6	3,5	1,2	24,5	1,3	8,7
GDP	-6,6	-0,4	-1,6	1,5	12,9	2,2	2,6
Consumption	-8,0	-1,5	-4,7	1,8	11	2,9	0,2
Investments	-8,3	0,2	-2,8	1,5	17,6	1,9	5,2
Total inflation	0,3	0,8	1,1	1,5	1,8	-0,1	2,1

Source: Ifo – Istat – KOF

3.2 Forecasts for Italy

In order to conclude the overview of the economic crisis it's relevant to analyze also Italy's forecasts. We have seen in the previous chapters that Italy has been affected by the crisis due to its state of economic instability even before the beginning of the crisis. It has been one of the most affected countries. According to the most recent International Monetary Fund forecasts, in 2020 Italy, due to the global pandemic crisis, would have suffered the third heaviest fall in real GDP worldwide, while it would be in third place in terms of absolute increase in debt and, despite this, would be the third country in the world, after Canada and Japan, to have suffered the highest increase in the debt/GDP ratio (+23%) (International monetary fund forecasts, 2021)

In the January 2021 update, the International Monetary Fund certifies, in its new estimates for the two-year period 2020-2021, a strongly recessive impact of the pandemic on Italy's

real GDP. This, in fact, in 2021 would be 6.5% lower than in 2019 and would record the heaviest drop among the G20 countries.
We can have more information about the forecast for the years 2021-2023 by looking at the trimestral economic most recent bulletin of the Italian Central bank. The outlook relays on both the evolution of the virus and the measures taken, on the one hand, to counteract the increase in infections and, on the other, to mitigate its impact on economic activity.
On the basis of traditional fiscal multipliers and still partial information on the planned interventions, it is estimated that the planned budget measures, including those funded with European funds, can raise the level of overall GDP by about 2.5 percentage points over the three-year period 2021-2023. European funds, could raise the level of GDP by a total of around 2.5 percentage points over the three-year period 2021-2023. The achievement of these effects, which are incorporated in the projections, depends, however, on the concrete specification of further interventions - which are expected to be largely defined in the coming months and included in the National Recovery and Resilience Plan10 - and on their timely implementation.
In the scenario considered, also thanks to the policies of the euro zone, governments and European institutions, monetary and financial conditions remain extremely positive. In line with expectations that can be deduced from market prices, yields on Italian ten-year government bonds would remain at historically low levels in 2021 (0.7 per cent of GDP).
Historically low levels in 2021 (0.7 percent), rising very gradually over the forecast period. The yield differential with respect to German bunds of the same maturity would fluctuate between 130 and 150 basis points over the three-year forecast period. The liquidity and insolvency risks for companies have been mitigated by the persistence of low interest rates and the support measures adopted by the government; in this scenario it is assumed that the measures adopted reduce the negative effects in terms of debt and credit quality for companies. The average cost of business credit, which fell slightly in 2020 (to 1.5 percent from 1.7 percent in 2019), would rise again to a limited extent.
After the strong rebound in the summer of last year, the growth of international trade will continue until the end of 2020, profiting from the recovery of the industrial sector in all countries. The scenario assumes that Italian foreign demand, after falling by 10.9% in 2020, will expand by an average of 5% per year in the three-year period 2021-23.
The macroeconomic framework for the Italian economy is published in June and December, following the release of projections for the euro area1 by the European Central Bank. The

projections for Italy presented here update those published last December 11 and are based on information available as of January 8. The main assumptions underlying the scenario are as follows:

- Foreign demand decreases by 10.9 percent in 2020, grows by 6.9 in 2021 and by just over 4 per year on average in the two-year period 2021-2023
- The exchange rate of the dollar against the euro, equal to 1.14 in 2020, stands at 1.23 in the three-year period 2021- 2023;
- The price of crude oil, set on the basis of futures contract prices, is 52.1 dollars per barrel in 2021 (42.4 in 2020) and gradually decreases to 49.7 dollars in 2023;
- The three-month interest rate on the interbank market (Euribor) remains stable at 0.5 percent on average over the forecast horizon;
- The interest rate on ten-year Treasury bonds (BTP), equal to 1.1 per cent on average in 2020, falling to 0.7 per cent in 2021 and then gradually rises to 1.1 per cent in 2023, in line with the forward rates with the forward rates implicit in the maturity structure of government bond yields;

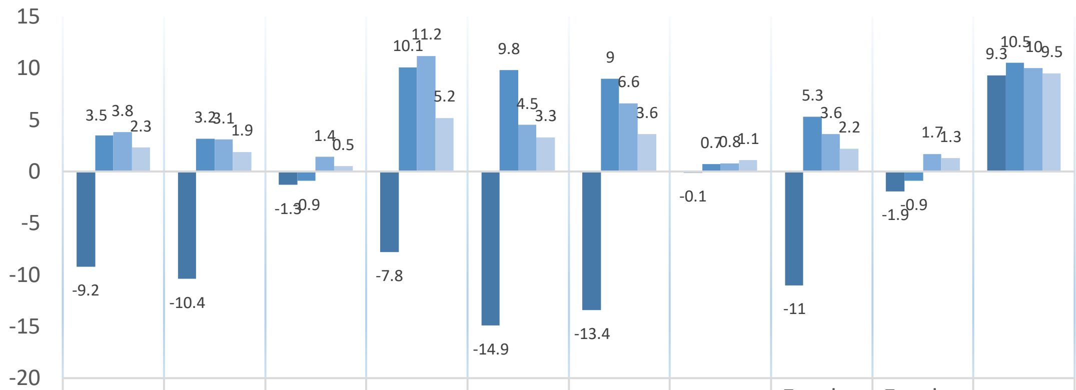
The scenario includes the budgetary measures enacted since the start of the pandemic, the maneuver for the three-year period 2021-23 and the use of European funds under the Next Generation EU (NGEU).

On the basis of these assumptions, it is estimated that output will return to significant growth from the spring, in conjunction with the assumed improvement in the health situation.
From the second half of 2021 and in the following two-year period an additional impulse would come from the support and recovery measures financed by the national budget and European funds. On average, after a contraction of 9.2% in 2020, GDP would expand by 3.5% this year, 3.8% next year and 2.3% in 2023, returning to pre-pandemic crisis levels in the course of 2023 (Table 18; Figures 47 and 48). Employment, as measured by hours worked, would recover by 2023 the fall suffered last year. For the three-year period 2020-2023 the macroeconomic scenario foreshadows a recovery in consumption to be significant, but less pronounced than that of GDP, with only gradual reabsorption of the sharp increase observed in the propensity to save, also due to precautionary reasons. Consumption would rise by just over 3% on average this year and next, slowing down in 2023. The household savings rate, which rose to 15 percent in 2020, would fall slowly over the forecast period,

remaining for the entire three-year period above pre-crisis values, when it was around 8 per cent.

In 2020-2023, exports would expand in line with foreign demand. Thanks to the support of the recovery in investment in capital goods with foreign inputs, imports would follow a similar dynamic. Compared to the baseline scenario presented in the economic bulletin last July, the average growth figure for this year is revised downwards by more than one percentage point, mainly due to the decline in production in the latter part of 2020. Growth is faster starting in the second quarter and it is significantly stronger in 2022, as a result of the assumption of a gradual slowdown in the pandemic and the greater stimulus from the measures included in the budget law and the use of European funds from the NGEU (Economic Bulletin of the Italian Bank, 2021).

Chart 22: Summary Italian forecast 2020-2023



	GDP	Household consumption	Collective consumption	Gross fixed investments	Total exports	Total imports	Consumer prices (IPCA)	Employment (HOURS worked)	Employment (people employed)	Level of unemployment
2020	-9.2	-10.4	-1.3	-7.8	-14.9	-13.4	-0.1	-11	-1.9	9.3
2022	3.5	3.2	-0.9	10.1	9.8	9	0.7	5.3	-0.9	10.5
2022	3.8	3.1	1.4	11.2	4.5	6.6	0.8	3.6	1.7	10
2023	2.3	1.9	0.5	5.2	3.3	3.6	1.1	2.2	1.3	9.5

Source: Italian Bank modified by author

FINAL CONCLUSION

The objective of this thesis was to analyze and understand the causes and consequences of the economic crisis caused by COVID-19, focusing on the Italian situation and in particular on small and medium-sized companies, the beating heart of our economy. All world economies have been significantly devasted, indeed the pandemic represents an economic shock worse that the 2008 crisis.

As explained in the first chapter all major economies as USA, Japan and also most of the European countries such as Germany, France and Spain have seen a decreasing gross domestic product and a decreasing level of employment mainly focused in the second quarter of 2020, period where the virus has strike most severely. In this phase most of the world has experienced a lockdown, which have led to a slowdown in the virus but also to a noticeable slowdown in the economy. The only country that has been able to recover before the other economies is China. China has started to deal with the virus way before the rest of the world and at the same time it has also been able to implement strong economic policies to achieve the recovery. Focusing on enterprises, the spread of the virus has led many of them to close, leading to an historically unprecedented interruption of business in most industries. Retailers and brands have faced many short-term business challenges, such as those related to healthcare and safety, supply chain, labor, cash flow, customer demand, sales and marketing. Yet, successfully navigating these challenges will not ensure a promising future. Companies, especially startups, have implemented a hiring freeze. At the same time, an outstanding growth is perceived by online communication, online entertainment and online shopping.

Italy has been one the most affected countries not only because of the large number of cases from COVID- 19 but also due to the economic situation in which the country was before the outbreak of the crisis. As demonstrated by the world stock indexes Italy has never been able to completely recover from the 2008 crisis, this has represented a strong weakness for our country. In the last five years the gap between Italy and the other economies has materialized. The critical initial situation of the Italian economy has implied for the firms and industries to be at disadvantage and unprepared as we entered the period of pandemic crisis.

Italian companies have never been able to fully recover from the 2008 crisis, and their situation has been worsened by a further negative peak in 2017. An in-depth analysis of the impact of COVID –19 on SMEs has been developed through “The COVID-19 shock and

Firms’ R&D Plans: Evidence from the Recent Italian experience” (Brancati, 2020), together with the additional data extrapolated from the survey and the Cerved PMI report of 2020. The crisis has had an impact of the entire economy but the shock has been heterogenous: In relation to forecast for the following 12 months in economic returns most sectors have changed negatively their perspectives but there are some exceptions correlated with the different industrials sectors. In addition, the perception of very negative consequences has led many economic sectors to stop investing in innovation as a consequence of the increasing fear of uncertainty. According to the type of sector firms have had a more negative or positive impact after the crisis: the most affected companies have been the ones belonging to travel agency and tour operator whilst looking at the other side the industrial sectors that have been better off with the crisis have been those involved in the e-commerce and those involved in the medical and pharmaceutical sectors. The general situation has result in an increase in the number of businesses that in 2020 will close the financial statement with a loss and an increase in the default probability. Moreover, the gap in terms of risk of the regions between the South and the rest of Italy could expand further.

It is evident that the economic crisis has led companies to a slowdown if not to a halt in economic growth. Companies already in a situation of pre-pandemic difficulty have found themselves in many cases having to exit the market. Indeed, the analysis of company’s demography has also shown an increase in the number of exits from the market and a reduction in the birth rate.

The expectations for the future are still uncertain and the main drivers for a rebound in the world economy are the manufacture, distribution and effectiveness of vaccines. In general, even if in the nearest term European economies are expected to grow less than the forecast, the overall growth in the European economy is set to resume this spring and have its momentum in the summer. External demand is also expected to sustain the rebound as the prospects for the world economy brighten. Looking at Italy, the International Monetary Fund certifies a strongly recessive impact of the pandemic on Italy's real GDP. This, in fact, in 2021 would be 6.5% lower than in 2019 and would record the heaviest drop among the G20 countries. Forecasts state that the country will not return to the economic situations as of before the pandemic until 2023.

To conclude, in the light of the present study, it’s possible to understand the characteristics of this economic crisis and the impact that it has had on small and medium Italian companies. The pandemic has led the world in a serious economic crisis that has changed completely the framework of many countries. Especially in Italy the consequences of the pandemic from an economic point of view will persist strongly for at least other two years. It is relevant to say that once the pandemic will be over, we will arise in a different world to which all economies will have to adjust.

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APPENDIX

The COVID-19 shock and Firms' R&D Plans: Evidence from the Recent Italian experience" (Brancati, 2020): data from comparison between the answers of the first survey pre COVID -19 and the second survey post COVID -19 provide by Prof. E. Brancati.

		Con riferimento all'andamento del fatturato della sua azienda, quale è la sua previsione per i prossimi 12 mesi				
		Forte calo (minore di -15%)	Calo (tra -15% e -5%)	Sostanziale stabilità (tra +5% e -5%)	Aumento (tra +5% e +15%)	Forte aumento (maggiore di +15%)
		% di casi per riga	% di casi per riga	% di casi per riga	% di casi per riga	% di casi per riga
1	Forte aumento (Oltre il +15%)	39,00%	30,00%	19,80%	11,20%	0,00%
	Aumento (+5/15%)	38,70%	37,30%	17,70%	5,90%	0,40%
	Sostanziale stabilità (+/-5%)	49,60%	28,50%	20,80%	1,10%	0,00%
	Calo (-5/-15%)	50,80%	29,40%	17,80%	1,60%	0,30%
	Forte calo (Oltre il -15%)	28,50%	20,50%	51,00%	0,00%	0,00%
2	Forte aumento (Oltre il +15%)	87,30%	8,20%	4,50%	0,00%	0,00%
	Aumento (+5/15%)	45,00%	47,00%	6,60%	0,80%	0,50%
	Sostanziale stabilità (+/-5%)	63,80%	25,40%	10,40%	0,00%	0,30%
	Calo (-5/-15%)	88,30%	10,10%	1,50%	0,00%	0,00%
	Forte calo (Oltre il -15%)	81,90%	14,50%	1,90%	0,00%	1,70%
3	Forte aumento (Oltre il +15%)	92,50%	6,90%	0,60%	0,00%	0,00%
	Aumento (+5/15%)	41,80%	14,50%	42,30%	1,40%	0,00%
	Sostanziale stabilità (+/-5%)	51,30%	35,40%	12,30%	0,80%	0,10%
	Calo (-5/-15%)	83,20%	16,20%	0,30%	0,00%	0,30%
	Forte calo (Oltre il -15%)	66,60%	32,50%	0,00%	0,00%	0,90%
4	Forte aumento (Oltre il +15%)	12,80%	67,90%	0,00%	0,00%	19,30%
	Aumento (+5/15%)	60,10%	10,40%	19,90%	9,70%	0,00%

	Sostanziale stabilità (+/-5%)	67,90%	21,70%	10,30%	0,00%	0,00%
	Calo (-5/-15%)	85,30%	10,60%	2,60%	0,20%	1,30%
	Forte calo (Oltre il -15%)	92,20%	7,80%	0,00%	0,00%	0,00%
5	Forte aumento (Oltre il +15%)	21,90%	2,10%	1,90%	42,80%	31,30%
	Aumento (+5/15%)	38,30%	20,70%	28,70%	12,30%	0,00%
	Sostanziale stabilità (+/-5%)	56,90%	28,80%	13,10%	0,90%	0,20%
	Calo (-5/-15%)	58,70%	16,20%	19,50%	5,60%	0,00%
	Forte calo (Oltre il -15%)	71,30%	27,80%	0,90%	0,00%	0,00%
6	Forte aumento (Oltre il +15%)	48,20%	21,60%	4,80%	0,50%	25,00%
	Aumento (+5/15%)	50,80%	34,40%	9,30%	5,40%	0,00%
	Sostanziale stabilità (+/-5%)	42,80%	47,00%	10,00%	0,10%	0,00%
	Calo (-5/-15%)	68,30%	22,30%	9,40%	0,00%	0,00%
	Forte calo (Oltre il -15%)	95,80%	4,20%	0,00%	0,00%	0,00%
7	Forte aumento (Oltre il +15%)	3,50%	39,50%	30,60%	26,50%	0,00%
	Aumento (+5/15%)	52,50%	30,80%	14,60%	2,10%	0,00%
	Sostanziale stabilità (+/-5%)	51,40%	12,30%	35,90%	0,30%	0,00%
	Calo (-5/-15%)	44,40%	37,60%	18,00%	0,00%	0,00%
	Forte calo (Oltre il -15%)	34,70%	65,30%	0,00%	0,00%	0,00%
8	Forte aumento (Oltre il +15%)	14,30%	37,30%	45,80%	2,70%	0,00%
	Aumento (+5/15%)	56,90%	23,70%	18,60%	0,80%	0,00%
	Sostanziale stabilità (+/-5%)	48,50%	27,20%	22,30%	1,30%	0,70%
	Calo (-5/-15%)	59,80%	23,20%	16,90%	0,00%	0,00%
	Forte calo (Oltre il -15%)	93,10%	6,90%	0,00%	0,00%	0,00%
9	Forte aumento (Oltre il +15%)	17,70%	74,60%	1,20%	0,50%	6,00%
	Aumento (+5/15%)	29,20%	49,60%	19,10%	2,00%	0,00%

	Sostanziale stabilità (+/-5%)	46,40%	48,40%	3,40%	0,30%	1,60%
	Calo (-5/-15%)	95,90%	2,80%	1,40%	0,00%	0,00%
	Forte calo (Oltre il -15%)	22,10%	68,80%	9,10%	0,00%	0,00%
10	Forte aumento (Oltre il +15%)	14,90%	13,60%	31,60%	1,10%	38,90%
	Aumento (+5/15%)	62,70%	9,70%	27,10%	0,40%	0,00%
	Sostanziale stabilità (+/-5%)	46,40%	21,50%	31,50%	0,60%	0,00%
	Calo (-5/-15%)	60,50%	22,20%	17,20%	0,00%	0,00%
	Forte calo (Oltre il -15%)	78,50%	12,70%	8,80%	0,00%	0,00%
11	Forte aumento (Oltre il +15%)	31,30%	28,30%	39,30%	1,10%	0,00%
	Aumento (+5/15%)	32,30%	41,20%	22,10%	4,30%	0,00%
	Sostanziale stabilità (+/-5%)	44,10%	36,00%	16,80%	1,80%	1,30%
	Calo (-5/-15%)	69,40%	26,60%	4,00%	0,00%	0,00%
	Forte calo (Oltre il -15%)	87,00%	10,20%	2,90%	0,00%	0,00%
12	Forte aumento (Oltre il +15%)	15,40%	29,20%	29,20%	22,10%	4,10%
	Aumento (+5/15%)	36,80%	38,10%	20,40%	4,40%	0,30%
	Sostanziale stabilità (+/-5%)	39,70%	33,90%	24,20%	1,80%	0,40%
	Calo (-5/-15%)	62,10%	32,40%	5,10%	0,00%	0,40%
	Forte calo (Oltre il -15%)	63,30%	13,50%	16,40%	0,00%	6,80%