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# "BEHAVIORAL FINANCE AND THE ROLE OF FINANCIAL ADVISORY IN CRISIS TIMES: ANALYSIS AND COMPARISON OF PRIVATE PORFOLIOS BETWEEN THE 2008 CRISIS AND THE COVID-19 CRISIS"

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To My Family

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## Introduction

The ongoing Covid-19 pandemic represents a major challenge for the entire world. Nations have found themselves having to cope with several emergencies: first and foremost a health-care one, followed by social, political, and economic crises as well. In particular, the financial market turmoil caused by the pandemic shows all the typical characteristics of the so-called "black swan", a term first theorized by the economist Nassim Taleb, referring to an unforeseen event with incredibly significant consequences for the overall market.

Throughout recent history we find several examples of black swan events that later went on to create turbulence in the financial markets. We have seen the Asian financial crisis of '97, the Internet bubble in the 2000s, the great financial crisis of 2008. More recently we also saw the sovereign debt crisis in Europe in 2009, the oil crisis of 2014, and the announcement of Brexit in 2016. All of these crises had very different originating events, thus generating distinct effects on investors' portfolios and, therefore, in their response behavior.

It is for these reasons, briefly summarized here, that it was decided to base the following thesis on the impact that the two most severe crises of the last 15 years have had on the portfolios of Italian savers and in their investment habits. These are the great financial crisis of 2007-2009 caused by the so-called subprime mortgages which resulted in the default of several credit institutions, including Lehman Brothers; and the most recent crisis that began in February 2020 sparked by the Covid-19 pandemic.

Furthermore, the proposed analysis led to the question of what was the role of the financial consultant in this new scenario. In particular we aim to assess whether the evolution of financial advisory and the financial education strategies currently available in the Italian marketspace are capable of providing the necessary tools to protect savers' investments in the face of sudden market shocks.

The result is a work that tries to take stock of the two crises, analyzing them at several depths: first through a temporal reconstruction of the two crisis and the regulatory framework of reference, followed by an analysis of the academic literature on behavioral finance and financial advisory and lastly via the analysis of actual portfolios samples held by investors during the relevant periods. The peculiarity of the work is to generate a parallel between the characteristics of the two different crises, sparking a dialogue around their similarities and differences through the adoption of a comparative perspective.

The first part of the paper is dedicated to the reconstruction and historical review regarding the changes in the financial market over time and, in particular, during the last two decades, together with the regulatory framework that regulates the market and the world of financial advisory (Chapter 2). The second chapter proceeds with a reconstruction of the two crises analyzed in this work: the financial crisis that began in 2007 and the current crisis linked to the pandemic. At this stage, it is essential to emphasize the profoundly different nature of the two crises, with the first one due to systematic failures of credit system whereas the second one takes the form of a response to a healthcare emergency. Nonetheless both have had severe repercussions on investor confidence and, by extension, on the overall financial market.

In the second section of the paper, we focus on the issue of behavioral finance as a fundamental branch of the economy. The aspects analyzed concern the studies on the behavior adopted by individuals in the face of economic choices. Particular attention was paid to the concept of heuristics, prospect theory and market inefficiencies, all representing cognitive biases involved in the decision making process. Although we concede that some of these biases cannot be "corrected" because they are inherent in human nature, the following thesis aims to show that several others (such as overconfidence and anchoring) can in fact be "corrected" through a good level of financial education (Chapter 3).

The theme of behavioral finance is linked to financial literacy (Chapter 4), defined by the OECD as "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being". This chapter aims to assess the financial culture of the average Italian investor, with the intent of highlighting the benefits that the figure of the financial consultant brings in providing accurate information and adequate training to those individuals looking to deploy capital in the financial market.

Once the theoretical research section has been completed, the analysis conducted on the portfolios of private investors is then presented. Chapter 5 describes the methodology used for the data analysis. The first part of the chapter highlights the different effects produced by the crisis of 2007 and that of 2020 on financial markets through the analysis of two Fideuram sectoral indices, one of the equity market and the other of the fixed income market. In the second part, the portfolio structures held by investors during the two crises are compared and contrasted; and in the third and

final part, we draw a parallel between portfolio developments during the period of the first pandemic wave (February 2020-August 2020) and the relevant market benchmarks.

Finally, the final conclusions are set out in Chapter 6. Through the results of our analysis we aim to determine whether the current state of financial literacy and the evolution of financial consulting practices provide the right tools to safeguard investors' assets in the face of unexpected and unprecedented market shocks.

This study, developed during the lockdown months, aims to put under a magnifying glass the very particular phase our society is currently undergoing, with the hope that these thoughts may then spark a discussion on the value of financial culture for the country's recovery and enhancement during times of crisis.

# Community and national reforms of financial markets

The world economy is increasingly interdependent: this is not new in recent decades. Even in other historical periods, the economically more advanced nations had strong elements of integration of commercial (for example, in the 16th and 17th centuries) and industrial (in the fifty years that preceded the Great War, that is from 1870 to 1914).

The truly new phenomenon is given by the extent of the financial globalization that has taken place since the early 90s of the 20th century.

Let's try to provide a picture of the structural and causal elements of financial globalization:

- strengthening the economic and financial interdependence of the various geopolitical areas (European Union, North America, China, Southeast Asia, Japan, Australia, Brazil, India, Russia and South Africa);
- freedom of movement of short-term financial capital following the removal of national legal barriers in advanced economy countries;
- the strong process of deregulation of financial transactions (since 1996);
- the widespread diffusion of a sophisticated telematic communication technology (of which the Internet is the clear proof);
- the integration of the various segments of the international financial markets (stocks, bonds, derivatives and currencies).

In particular, the mobility of capitals, thanks to the existence of open and internationalized capital markets, has benefited from a technology that allows to make investments and financial divestments from any geographic place quickly and with very low transaction costs.

This rapid movement of capital on a global scale increases the risks of excessive variability in the prices of financial assets, creating potential conditions of less stability of financial systems, in the absence of supranational institutional safeguards capable of regulating and controlling them.<sup>1</sup>

The issue of actions to be taken to contain the extent and depth of market failures and to mitigate their effects on the real economy was raised at an international level. Giving rise to a complex and articulated supranational public strategy for the protection of investors and for the integrity of the functioning of the markets. But it is a difficult and patient job with visible results in the long run.

<sup>&</sup>lt;sup>1</sup> Cfr. Dani Rodrik, La globalizzazione intelligente, Ed. Laterza (2011), pagg. 261-279.

It is clear from history, looking in particular the recent crises, the need for effective regulation of the financial system and their consistent application in different countries and for different operators. This condition can only be achieved in the presence of supra-national forms of control<sup>2</sup>.

### The financial market

Before going into the specifics of the various forms of regulation it is important, in my opinion, to take a step back and understand first of all what the financial market is and what have been its evolutions that have necessitated a continuous regulatory reform over time.

Financial market is defined as the market in which financial assets are traded. It is traditionally divided into three sectors: the credit market, the insurance market and the securities market. That three-part division is based both on the diversity of the products traded and on the different role played by the intermediaries.<sup>3</sup>

Starting from the credit market, we find banks as the main operators, in which the intermediation function consists in collecting savings, at the same time obliging to repay it plus the agreed interest, and in providing medium / long-term credit. In the second in the insurance market, the investor pays a premium to obtain risk coverage, as consideration, of the occurrence of certain future and uncertain events. Lastly, the securities market exclusively includes that specific segment of the financial market where securities are traded, i.e. financial instruments so named for their ability to move easily, since they have a high degree of transferability.

This first definition and separation of the various markets shows the role of the securities broker who, while establishing a fiduciary relationship between the issuer (companies) and the investor, does not consist in the repayment of sums received on deposit, as in the case of credit, or the payment of a sum upon the occurrence of certain events, but the correct execution of the mandate received from the customer.

Going deeper into the securities market, it is important to make a division between primary and secondary market. In the first, securities not yet destined to be distributed in the savers market are negotiated, for example, there are shares from an IPO, Initial Public Offer. As a result of this

<sup>&</sup>lt;sup>2</sup> Cfr. CONSOB, La finanza diventa globale

<sup>&</sup>lt;sup>3</sup> Cfr. Giuseppe Di Gaspare, Introduzione allo studio dei mercati mobiliari, pagg 3

operation, a company moves from a private state to a public one, issuing its shares on the market for the first time. In this case, therefore, it is the company itself that plays the role of seller and the intermediary covers the role of buyer, with the aim of subsequently placing them among the public. In the secondary market, the securities already in circulation are traded, this market therefore does not play the role of financial channel, alternative to credit, for companies, but rather, to guarantee liquidity to the investment made by those who have purchased securities.

This basic distinction also explains the traditional different regulation of the three sectors as well as the different attitude of supervision (and often the diversity of the authorities in charge).

### Technological innovation and the product-market cycle

Another element that makes market regulation even more complex is technological innovation, which produces the demolition of the market as a physical place. The market has always been considered as a place identified or identifiable topographically, where one goes and where the transactions take place, whether they are real transactions, as exclusively at first, whether they are financial transactions. Even the stock exchange, which until not many years ago, was a precise physical place, visually identifiable with the "fence", that is the place where the "cries" of the stockbrokers took place, and only there the authorized operators could exchange values securities. In the 80s, but especially during the 90s, instead, we witnessed the passage for the securities market in a spaceless and timeless dimension, as it is present on the telematic network, with all the difficulties of understanding the phenomenon even from a strictly legal point of view. In this context of continuous evolution, the product-service provided by intermediaries also varies in order to satisfy the real demand of the saver and, in particular, of the small saver who needs advice and portfolio management in order to maximize yield.

The effects produced by technological innovation can be analyzed with regard to both the market and the product; we can create a cycle that can be summarized as follows:



Looking inside the markets, the circuit feeds itself thus resulting closed: technological innovation tends to produce a liberalization process, that is, it tends to break the traditional barriers of closing the markets, which in turn determines a pressure in the direction of deregulation of the system, since all administrative limits to circulation are contrary to the development of the global market, and attempting to counteract the push towards liberalization and the tendency to deregulation means cutting oneself out of the process of internationalization of the markets. The tendency to deregulation, however, clashes with a need for re- regulation, with the particularity, however, that this new regulation is going to put at a level different from the previous regulation overwhelmed by technological innovation.

As for the products, the same phenomenon can be observed



Technological innovation drives product differentiation: with a process of globalization that increasingly influences the financial market, the financial products offered also need to evolve to meet the new needs of consumers. With the creation of new products then a reorganization of

production processes is necessary. The latter in turn determines a new typification of the product, which must be recognizable by the "consumer" saver.

Certificates are an example of this process. In fact, introduced in Italy for the first time in 1998 with the listing of the first certificate on the Milan Stock Exchange on the segment dedicated to covered warants, the SEDEX, they were created to offer investors new alternative investment products. The development of the derivative instrument markets has in fact created the possibility for economic operators and financial intermediaries to improve the finding and use of financial resources, thus provoking considerable product innovation that has allowed them to cope contingent and changing market conditions.

Finally, we can merge both schemes into a single scheme, called "the product-market cycle"



Financial innovation consists in the possibility of identifying new communication tools, is the application of telematic circuits to financial exchanges, that is, the possibility of moving monetary masses through a network system, which allows you to move an order given on the circuit by an operator to another. Technological innovation, therefore, obliges the opening of markets and destructures them, blowing up old regulatory systems. It is important to take in mind these changes and, in particular, the financial evolution, since it was one of the factors that led to the fracture of the financial system in 2008.

## The Italian context and the MIFID I and II directives

Of course, as already mentioned above, all these changes at the level of product and processes necessitated a restructuring of the regulatory landscape in the securities markets. Starting from the end of the last century, we have witnessed a progressive modification of our legal system, which had to be renewed to cope with all the changes that the globalization process was carrying out.

The passage from a "local" to an international market creates the need to create a series of laws that are placed at a supranational level.

Despite the strong need for change, Italy seems to have delayed the modification of its legal system until the early 1990s, when in fact it reaches a level of legislative adjustment equal to that of economically advanced states. Arriving at the end of nineties, with the new millennium coming, the adaptation had become urgent both because there was an obligation to comply with EU directives , and also because by doing so it gave the Italian securities industry the opportunity to work in a system that was not penalizing it. It was necessary a system that could be compared to the those that governed savers and financial operators fin the other countries of the European Economic Community, which were becoming more and more direct competitors, thanks to the systematic implementation of the principle of freedom and movement of financial services.

With Legislative Decree no. 415 of 23 July 1996, the community directives were implemented (10 May 1993 no. 93/22 and of 15 May 1993 no. 93/6, also known as the "Eurosim directives ") which required coordination of national investment services disciplines with European ones.

Coordination necessary to follow up on the application of the principle of mutual recognition around the European Union for the national authorizations to exercise financial services. In fact, the decree re-regulates the securities brokerage activities already regulated by Law n.1 of 1991 and sanctioned the principle according to which investment firms authorized in a Community country could also operate in other countries, remaining under the supervision of the country where they were born.

Directive 93/22 also elaborated a series of rules of conduct that intermediaries are required to follow during their activities. These behaviors refer to acting fairly with competence, commitment and diligence in the interest, as far as possible, of its customers. Have enough resources to carry out their activities and use these resources correctly. They must be inform about the financial situation

of their customers and their objectives and transmit useful information to customers during the negotiations and trying to not enter into a potential conflict of interest with them.

For the first time, the term "securities brokerage activity" is replaced with "investment services" to adapt the fact that the evolution of the financial market could no longer remain connected to the restrictive concept of securities but had to be extended to the broader category of "financial instruments" even if in Italy the name of SIM (Società di intermediazione mobiliare) was maintained even if the notion of securities and securities was abandoned.

The 1996 decree also incorporates the directives concerning market surveillance and the rules of conduct of the SIMs which must behave with diligence, transparency and fairness both for the interests of customers and for the integrity of the markets, acquire information from customers and keep them informed, organize themselves to minimize conflict of interest, have adequate resources, procedures and internal controls to perform their services and carry out a prudent management aimed at safeguarding the money entrusted by their customers.

As a result of this legislative production, Italy found itself with a regulatory system for the securities market substantially at the same level of other nations. But, at the same time, a great disharmony inside the country had been created between the parties that operated into the market. The the community law of 1994 tries to put things in order. The law delegated the Government to issue by 1998 a Consolidated Law on financial and securities intermediaries and markets, in order to harmonize all the disciplines that made up the securities market in the best possible way.

It is important to underline that with the issuance of the Consolidated Law we are witnessing a process of "deregulation". Started in order to make the discipline more flexible and more adaptable to the new needs that the various authors of the market have to face. The document therefore limits itself to setting the guidelines of the discipline, eliminating the detailed regulation for institutional investors and investment firms, and leaving, then, to the supervisory authorities (Consob and Bank of Italy) for the management of detailed rules. The statutory and managerial autonomy of both the intermediaries and the companies issuing the securities listed on regulated markets was particularly valued and, with reference to the intermediaries, an important role was recognized to the capacity of self-regulation, albeit subject to the high supervision of supervisory authority.

Over the years, the presence of EU law within the Italian system has continued to grow. In 2007 alone, 4 Community directives were transposed into the Italian legislative system: Legislative Decree 28 March 2007 n.51, which completed the implementation of the directive 4 November

2003, 2003/71 concerning the processes for tender offers; the Legislative Decree no. 164 of 17 September 2007, which transposed the directive of 21 April 2004, 2004/39 on financial services (Market in Financial Instruments Directive, MIFID I); Legislative Decree no. 195 of 6 November 2007, which implements the directive of 15 December 2004, 2004/109 on the subject of transparency; and finally Legislative Decree no. 229 of 19 November 2007, which transposed the directive of 21 April 2004, 2004/25, which modifies the rules laid down by the Consolidated Law on tender offers.

On the financial advisory front, the fundamental step following the harmonization process with the international context was the Directive 2004/34 CE, better known as MiFID (*Markets in Financial Instrumets Directive*). The objectives of this new Directive are to stimulate competition in the markets by facilitating the freedom to provide services in member countries, to strengthen transparency, solidity and efficiency through substantial legislation on the execution of orders, ensure greater protection for investors by standardizing the conduct rules for intermediaries in the different European markets and finally introducing further uniform control and organization requirements for intermediaries<sup>4</sup>.

With regard to the organization of the various markets, MiFID eliminates the right, in the past attributed to individual member states, to impose the obligation to concentrate the trading of listed securities within regulated markets and, moreover, the internalisation of orders is carried out directly in home of the intermediary, directly with the client without the need to go through regulated markets (so-called systematic internalization) by creating pre and post trading rules in order to avoid the risks deriving from a fragmentation of the order execution venues<sup>5</sup>. To simplify, this innovative directive entailed multiple possibilities for carrying out transactions in financial instruments no longer in a single market, but in different and competing trading venues.

From this moment the banks have the possibility to organize multilateral trading facility (MTF); in addition, the regulated market is given the opportunity to admit financial instruments already listed on another European regulated market to trading, even in the absence of authorization from the issuer.

<sup>&</sup>lt;sup>4</sup> For further information please refer to the following text: V. Conti - G. Sabatini, C. Comporti, *The MiFID directive and the effects of its implementation*, Association for the Development of Bank and Stock Exchange Studies, Bologna, 2007 <sup>5</sup> According to the 5th recital of the Directive in question *"It is necessary to take note of the emergence, alongside regulated markets, of a new generation of organized trading systems, which should be subject to obligations in order to preserve the efficient and orderly of the financial markets. In order to put in place an adequate regulatory framework, provision must be made for the inclusion of a new investment service consisting in the management of multilateral trading facilities ".* 

The multilateral trading system (MTF) has important common features with the regulated market: first of all both subjects must be authorized by CONSOB, which constantly approves and checks that the top management, the relevant shareholders and those who guarantee the healthy and prudent management of the company possess the requisites of integrity and professionalism; Furthermore, CONSOB supervises the market regulation which must have minimum operating requirements and fundamental transparency obligations. The MIFID directive defines "multilateral trading systems" as *multilateral system, operated by an investment firm or a market operator, which brings together multiple third-party buying and selling interests in financial instruments – in the system and in accordance with non-discretionary rules – in a way that results in a contract<sup>6</sup>. The definition of a multilateral trading system is a common characteristic to the regulated market: both trading venues require the presence of a multiplicity of operators in direct competition with each other. On the contrary, in bilateral systems the investment firm undertakes every operation on its own account and not as a counterparty interposed between the buyer and the seller without taking risks.* 

The main differences between MTF and regulated markets are essentially two. First, while the regulated market must have the management of the investment and trading service as its exclusive corporate object, the MTF is an investment service that can be provided by a multifunctional entity or an alternative activity that can be exercised by a regulated market manager. Second, on MTF can be negotiated either shares listed on regulated markets and non-listed shares: this means that multilateral systems allow to increas trades, improving the liquidity of unlisted securities on regulated markets<sup>7</sup>.

Important reforms of the MiFID are those relating to the relationships to be maintained with customers, these are strengthened by creating a complicated set of rules for customer knowledge by introducing the concepts of "suitability, appropriateness" and "mere execution of the orders or execution only ". In addition to this, a hitherto non-existent customer classification discipline (customers are not all the same) is introduced in detail, divided into two levels, distinguishing retail customers on one, and qualified counterparties and professional investors on another. A "best execution" order is also introduced, i.e. outline the transactions to the trading venues that offer the best execution conditions at the time of the transaction. Strict discipline is also implemented regarding the information duties of the company towards customers, also introducing the prohibition by banks and investment firms to receive any type of remuneration, commissions and

<sup>&</sup>lt;sup>6</sup> MIFID Art. 4 (15)

<sup>&</sup>lt;sup>7</sup> Cfr. Anthony Saunders, Economia degli intermediari finanziari, IV edizione (2014), pagg 209-211

non-monetary services related to the provision of services, except in the case of specific and detailed conditions. The concept of "investment advice" is also introduced for the first time.

To better understand, let's deepen the concept of "suitability", "appropriateness" and "mere execution of orders"<sup>8</sup>. To carry out financial transactions, the MiFID requires the intermediary to deepen his knowledge of his client and carry out an evaluation of the transactions recommended for the same. As for the concept of appropriateness, the intermediary must obtain useful information from the client on his financial situation and his investment objectives. The investments proposed in the consultancy can then be made only if they are consistent with the information released by the client. If it is impossible to obtain such information, the intermediary must refrain from providing consultancy and management services.

With regard to services other than consulting and management, an additional level of control called "appropriateness" is envisaged, in this case the intermediary's task will be to understand whether the client has sufficient knowledge and experience to understand what are the possible inherent risks to the proposed service, gathering information on the client's financial knowledge, the frequency of the transactions carried out by him, the level of education and his profession. In the event that it is impossible to carry out the assessment of the "appropriateness", the intermediary will therefore not be able to understand if the investment complies with the characteristics of the customer but, unlike the " suitability ", he can still provide this service once the customer has been notified of the inability to understand if the tool is appropriate for him.

Lastly, the "mere execution of orders" exempts the intermediary from carrying out the " suitability " and "appropriateness" tests but can only be applied when the service concerns products listed on regulated markets, therefore company shares, money market, bonds and other debt securities. It is fundamental that the service is activated on specific initiative and request of the customer as it is assumed that a consultancy service is not carried out, intended as advice to the customer but that it is the customer himself who requests that financial product, thus exempting the intermediary from perform these specific forms of protection in their consulting activity.

The MiFID then takes one step further, for the first time, a form of classification is articulated based on the type of clientele with which the intermediary has to deal with. The first type of clientele is the one defined as "professional", a clientele who "... possesses the experience, knowledge and competence necessary to make their own investment decisions and correctly assess the risks they

<sup>&</sup>lt;sup>8</sup> For further information, see Chapter 2, Section 2, Art. 19, Directive 2004/39 / EC.

assume ..."<sup>9</sup>. This category includes subjects who hold the office of investment firm, credit institutions, insurance companies, UCIs, SGRs, pension funds, institutional investors, governments in their various national and regional forms and supranational institutions such as the IMF ( International Monetary Fund), the ECB (European Central Bank) etc ... In addition to the categories explicitly mentioned above, companies may also belong to the category of "professional investors" upon specific conditions, and other types of customers not falling within the categories mentioned above<sup>10</sup>. The professional client is exclusively entitled to be informed about the nature and risks of the products and/or services offered and the existence of any privileges or rights connected to them, for the rest there is the presumption that the same is able to understand by himself the risks associated with the subscription of financial products and therefore the "appropriateness" test can be completely omitted. In the event that an advisory service is also provided by the intermediary, the same can assume that the "professional client" is financially able to support any type of risk compatibly with his investment objectives and therefore the "suitability " test will be simplified.

By "eligible counterparties" we mean another category of customers considered by MiFID as a subset of the previous "professional investors", this includes exclusively those who perform the services of "trading on own account", "execution of orders on behalf of customers "and" receipt and transmission of orders ". Being a sub-group of "professional investors", the "qualified" ones are considered even more aware of financial products due to the activities carried out by them and for this reason the protections attributed to them are even less than the previous ones, in the sense that the protections relating to general obligations of conduct when providing the service.

The types of customers mentioned above are therefore considered sufficiently aware and authoritative to be able to make investment decisions independently, thus seeing the rationale of the main forms of protection fall, which are instead automatically attributed to the last category of customers, namely the "retail client".

The "retail client"<sup>11</sup> is a residual category, in other words within it all subjects not falling within the previous categories are considered. These are given the highest forms of protection by MiFID including the obligation, within a useful time before the provision of the service, to specify all the terms of the services offered together with information regarding the company, the services it offers, the nature and the risks of the proposed transaction, the instruments provided by

<sup>&</sup>lt;sup>9</sup>Defined and implemented by the Italian legislation in the Intermediaries Regulation, Part I, Art 26, 1d) and then specified in Annex 3 Part I adopted with Resolution No. 16190 of 29 October 2007

<sup>&</sup>lt;sup>10</sup> Annex II Section II, Directive 2004/39 EC.

<sup>&</sup>lt;sup>11</sup> Intermediaries Regulation, Part. I, Art. 26, 1 e).

law as a safeguard for "retail clients", all costs and charges associated with the transaction and obviously the execution of the "suitability " and "appropriateness" tests.

As regards the organizational requirements of intermediaries, MiFID adopts a freer approach, it simply defines the minimum requirements that all market operators must follow. National legislations and intermediaries themselves are given the freedom to structure their business independently. However, the organizational structure must be consistent and proportionate to the nature of the activity, the size and complexity of the operations carried out as well as, obviously, the range and type of services provided (thus recalling the so-called "Principle of proportionality").

The MiFID is implemented with the Legislative Decree of September 17, 2007 n.164 which makes a series of significant changes to the TUF. A series of updates then follow, such as the "Regulations on the organization and procedures of intermediaries who provide investment services or collective asset management "(also called Joint Regulation)<sup>12</sup> drawn up by Consob and Bank of Italy. Amendments are also implemented to the respective regulations in place to homologate them to the MiFID directive in a coordinated way, in order to avoid possible fragmentation and discrepancies between national and EU law and to guarantee equal treatment to companies operating in European markets.

In the years immediately following MiFID, we are witnessing an increasing number of investors present in the financial markets, the same markets offer an increasingly broad and complex range of tools and services. In line with market developments, a new regulatory intervention was necessary to fill the gaps in the first MiFID directive. Gaps mainly due to rapid innovation that the market put in place. It was necessary to strengthen the rules of protection and behavior to ensure the protection of investors, who are increasingly numerous. This strengthening takes place with the 2014/65 EU Directive of 15 May 2014 better known as "MiFID II", and implemented in Italy with the Legislative Decree of 3 August 2017 n. 129. This Directive separates the concept of consultancy, previously understood universally and now divided into two main categories: "dependent

<sup>&</sup>lt;sup>12</sup>Adopted by the Bank of Italy and Consob with a provision of 29 October 2007 and subsequently amended with joint Bank of Italy / Consob acts of 9 May 2012, 25 July 2012, 19 January 2015, 27 April 2017 and with Consob resolution no. 20307 of 15 February 2018, published in the Official Gazette of the Republic no. 255 of 2.11.2007 and subsequently amended with: joint Bank of Italy - Consob deed of 9 May 2012, published in the Official Gazette of the Republic no. 112 of 15 May 2012 and in CONSOB Fortnightly Bulletin no. 5.1, May 2012; joint Bank of Italy - Consob deed of 25 July 2012, published in the Official Gazette of the Republic no. 184 of 8 August 2012 and in CONSOB Fortnightly Bulletin no. 184 of 8 August 2012 and in CONSOB Fortnightly Bulletin no. 184 of 9 January 2015, published in SO no. 11 to the Official Gazette of the Republic no. 65 of 19 March 2015 and in CONSOB Fortnightly Bulletin no. 1.2, January 2015. For the transitional regulations see art. 6 of the joint Bank of Italy - Consob deed of 19 January 2015; joint Bank of Italy - Consob deed of 27 April 2017, published in the Official Gazette of the Republic no. 106 of 9 May 2017 and in the CONSOB fortnightly bulletin no. 4.2, April 2017 (for the transitional regulation see art.4 of the joint Bank of Italy - Consob deed of 27 April 2017); Consob resolution no. 20307 of February 15, 2018, published in SO no. 7 to the Official Gazette of the Republic no. 41 of 19 February 2018 and in CONSOB Fortnightly Bulletin no. 2.2, February 2018.

consultancy" and "independent". Another very important objective of MiFID II is to promote an investor's financial culture.

Regard to financial advice, for the first time, a distinction is made between "dependent" and "independent". Dependent financial advice is that proposed by subjects referable to product houses, asset management companies, companies that manage funds or banks. For "independent" consultancy (new form of consultancy introduced and formalized with MiFID II)<sup>13</sup> means a service provided by companies or subjects that do not have any type of relationship either with financial product managers or with the placement agents of such products. The main difference between these two forms of consultancy is the income of the person providing this service. In "dependent" consultancy, the consultant's earnings are given by the percentage of earnings of the company he belongs to and by the amount of household products sold. It is clear that in such a context a conflict of interest problem can arise. The consultant may promote certain products not because they are better suited to the client's needs but because they are more profitable for him. In the "independent" consultancy, on the contrary, the gain comes from a fee paid directly by the client. This method of counseling effectively eliminates potential conflicts of interest that, as mentioned above, could arise in the case of "dependent" counseling. Finally, in order to promote greater protection and awareness of the customer, with the MIFID II it was imposed that, in the case of "dependent" consultancy, within the annual reporting of investments, the actual cost is included in a separate item that the customer pays to the bank. The ultimate goal is to protect the consumer more, making him more aware of the costs of the service<sup>14</sup>.

As regards the rules of conduct that investment firms must observe in providing the advisory service, these are further strengthened by MiFID II by carrying out a tripartition of this service. The first step of the consultancy is a "pre-contractual" evaluation, in which the client must be informed whether the consultancy is provided on an independent basis or not; whether it is based on a broad market analysis or a narrow one; if the range of instruments analyzed is wide or limited to products of companies that have legal or economic relationships with the consulting company; whether a periodic evaluation of the investments will be carried out and finally the cost of this type of consultancy. These protections narrow the difference between "dependent" and "independent" consultancy. If the service is provided on a wide range of products, with a periodic evaluation, making the customer aware of the costs he incurs, the differences tend to disappear making the

<sup>&</sup>lt;sup>13</sup> Directive 2014/65 EU, Point 72 et seq.

<sup>&</sup>lt;sup>14</sup> For further information: Cataldo S., Marchetta G. Financial consulting in the time of MiFID II, Maggioli Editore, 2018

choice for the customer very simple, aware and assessable more on the quality and capacity of the subject who provides it than on the way in which this service is paid (fee vs distribution costs).

The MiFID II also establishes innovations regarding financial instruments that must be designed to meet certain needs of a well-defined customer target. Together with this, the procedures to be respected during the distribution strategy of these products are outlined. Ensuring efficient control measures to verify that the distribution really takes place between the originally identified target. The field of possibilities for the application of "execution only" is also restricted and further restrictive limits are placed on the possibility of selling financial instruments without applying the "appropriateness" test already defined by MiFID I but now further restricted.

## **Market crisis**

The financial market crisis resulting from the current pandemic has all the typical characteristics of the so-called "black swan", theorized by the economist Nassim Taleb<sup>15</sup>. The economist describes the latter as an unexpected event, with incredibly significant effects and which is rationalized and judged predictable only in retrospect.

However, it should be remembered that in the recent history of the financial markets of "black swan" we have known many, some even very deep, since the crisis of the Asian markets of '97, the Internet bubble of 2000, the terrorist post-attack financial shock of 11 September 2001, the world collapse of 2008. Furthermore, in addition to these particularly profound ones, we have gone through: the sovereign debt crisis in Europe in 2009, the Fukushima nuclear disaster in 2011, the oil crisis of 2014, Black Monday China in 2015, the announcement of Brexit in 2016. All crises had very different origins and for this reason had equally different effects in the portfolios of savers and, therefore, also in their behavior.

The next chapter will be divided into two parts, in the first part we will see specifically how it originated and what were the effects of the financial crisis that began in 2007; in the second part we will focus on the crisis generated by the COVID-19 pandemic.

### Crisis 2007-2009

The two crises have a profoundly different nature, the first due to the credit system while the second has been originated by a pandemic crisis <del>a health nature</del>. This also explains the different duration; that of 2007-2009 undermine the foundations of the banking system and the credibility of the supervisory system. The crisis generated by Covid-19 appears, at the time of writing, very deep but also very fast.

Analyzing the first, we see that it all began in 2007, when the United States of America outbreaks a speculative bubble in the real estate sector whose explosion caused serious damage to all the

<sup>15</sup> N. N. Taleb, The Black Swan, How the improbable rules our life, 2009. We know that the future is predictable and the risks can be controlled, but the world we live in proves otherwise. A single unexpected event is enough to demolish certainties and patterns that have been consolidated for centuries. Why do we become aware of these phenomena only when they have already occurred? As Taleb says, we naturally learn from experience and repetition, focus on things we already know and systematically neglect what we don't know. So we are defenseless in the face of the unexpected, be it financial markets or everyday life. Light-hearted and provocative, The Black Swan explains why we must get rid of everything we have learned so far and how to exploit the circumstances created by the highly improbable occurrence in our favor.

overseas economy, then generating a financial crisis of global reach. In turn, it led, from 2010 onwards, to a sovereign debt crisis of the most fragile economies of the Eurozone, with serious repercussions on the wealth of the population and on economic growth.

Starting from the last years of the last century and especially from the beginning of the new millennium, there was a disproportionate increase in house prices in the USA. Since it can be observed in the Case-Shiller index<sup>16</sup>:



Pic. 4: Case-Shiller index

### Source: https://fred.stlouisfed.org/series/SPCS20RSA

the positive trend in house prices was mainly caused by excessive demand for real estate, far outstripping supply. Low rates, irrational exuberance and deregulation in the financial sector are some of the reasons that actually led to the creation of the speculative bubble in the financial sector; looking at these elements more specifically, we see how the Federal Reserve in those years kept the rates on Fed Funds extremely low, in relation to an inflation rate that was particularly low at that time. This has made debt financing cheaper than equity financing. There was therefore a general increase in financial leverage (ratio between equity and debt capital) with a consequent increase in systemic risk. As for the second element, irrational exuberance<sup>17</sup>, as is often the case,

<sup>&</sup>lt;sup>16</sup> The S & P / Case-indices Shiller (S & P / Case- Shiller Home Price Indices) are processed and calculated on a monthly basis in order to measure changes in the value of US homes. The indices cover the 20 major metropolitan areas of the USA and are aggregated to create two composite indices, one relating to the 10 main areas and one (the most followed) relating to all 20 areas. There is also another composite index, the S & P / Case- Shiller US National Home Price Index, which does not use the same methodology as the others but takes into consideration the nine divisions used by the "Bureau of the Census" and therefore covers the entire territory of the United States. using data on the total value of single-family residential properties taken from the ten-year censuses. https://www.borsaitaliana.it/notizie/sotto-la-lente/indici-s-165.htm

<sup>&</sup>lt;sup>17</sup> Expression taken from the famous book by RJ Shiller, Nobel laureate in economics in 2013

whenever there is a positive trend in the market, investors are led to believe that it will go on forever. In fact, everyone believed that house prices would continue to rise relentlessly.

Everyone therefore thought that could gain something from this situation. Animated by this eager euphoria, many threw themselves into the mainstream of the moment (buying a property mainly for profit and non-necessity purposes), exposing themselves a lot from a financial point of view, more than their possibility.

Finally, in the financial sector, the deregulation process begun at the end of the last century played an important role, which encouraged banks to take on more risk, increasing the share (out of total loans) of "sub-prime" mortgages. These are mortgages granted to "high risk" customers, to debtors who typically have a low credit score because they have credit histories characterized by defaults, foreclosures, or more simply bearers of an income that is too low compared to the financial commitment that is about to assume. The characteristics of this type of mortgages were, in fact, the failure to request guarantees required of mortgage applicants and variable interest rates. These rates, which also vary by several percentage points, often caused the debtor's insolvent once they rose above a certain threshold.

This phenomenon of granting loans without considering the risk profile of loan applicants was possible precisely because the limits that prevented American banks from operating outside the state in which they were established were no longer valid, giving to US banks the opportunity to mitigate risk in other foreign markets. In fact, from the 1980s on , territorial restrictions fell, allowing the formation of large national banks (eg Bank of America); moreover, new financial instruments were born recently , the CDS and CDO , gave the possibility to diversify the risk of one's activities (including mortgage loans) by incorporating them into securities, negotiable on the market. It was in the years leading up to the crisis that the issuance of these bonds increased sharply. The graph below shows the trend of the sub-prime market up to 2007.



Tab 1: sub-prime share of mortgage and home ownership rate between 1997-2007

With the financial deregulation started in the 90s, as mentioned above, new types of financial products called collateralized debt obligations (Cdo) were introduced. Defined by the famous American investor Warren Buffet as a weapon of mass destruction, the Cdo consists of bonds (a form of long-term financing) created by merging a series of financial products sold to international investors. During that period, numerous high-risk subprime mortgages were "bundled" into the Cdos handled by the world stock exchanges.

Rating agencies such as Moody's and Standard & Poor's, whose task is to assign a risk grade of derivative securities issued by banks, defined as safe also products consisting of subprime mortgages, when in reality they should fell into the category of products with very high default risk. Later, in fact, when the world began to understand that these products were anything but safe, companies justified themselves by attributing their mistakes to the climate of great financial confidence in force in those years. Whatever the reason, the statements of the world's trusted rating agencies described a reality completely different from the real situation.

Therefore, in addition to the lack of stringent rules on risk, or on the assignment of loans, banks lost the incentive to check the quality of their debtors for three main reasons:

1- The bubble present in the real estate sector: with the rosy expectations of a rise in house prices, the banks were not particularly worried: the value of houses rose by 124% from 1997 to 2006, a figure which further shows how much the market was out of control and which further incentivized banks to grant subprime mortgages, strong in the belief that in the event of insolvency the property could easily be seized and resold on the market at a higher price.

- 2- They managed to diversify the risk thanks to the union of many mortgages in securities, the CDOs, which were then sold to other financial institutions, which could hardly control the quality of every single credit.
- 3- They insured themselves against the risk of default: there were insurance companies (for example AIG, American International Group) that sold "credit default swaps", or CDS. Derivative instruments that hedge the creditor against the risk of insolvency. Once a loan was granted, the bank bought a CDS which guaranteed it in the event of non-repayment of the loan.

We understand from this situation that the real problem that led to the serious consequences of the bursting of the bubble, was not so much financial innovation, as the lack of an appropriate regulatory regime within the system, which progressed faster and faster toward a context of greater risk, with a weak defensive structure in case of a crash. This lack of regulation came from pressure exerted on monetary authorities by political powers, who wanted to promote the idea of the American dream: having a home of your own to truly feel successful citizens. It is evident that this behavior was also adopted for purely propaganda purposes.

All these behaviors put in place by banks created considerable difficulties in 2007 when the bubble burst and house prices began to fall.

People saw the value of their home decrease exponentially, and they considered it no longer convenient to pay the mortgage payments, as the value of the house was now far below the capital loaned to them. This obviously led to the abandonment of the house by many families. Together with this, it should be noted that many debtors taken from the period of initial euphoria, in which they went into excessive debt, were no longer able to meet their payment commitments.

Wealth underwent a large decrease also due to the drop in share prices: banks, recording large losses on mortgages and presenting very high financial leverage ratios, were unable to cope with the difficulties through the available capital (excessively low compared to the losses) and found themselves forced to sell most of their assets, including equity holdings. All this threw the country into a deep recession.

At this point, a timeline of the central facts of the crisis can be useful for understanding the succession of events and cause-effect relationships.

It all started with a drop in property prices during 2007.

Indeed, a certain instability in the markets had already been noted, as well as the existence of a bubble, by many economists: one of the most important voices was that of JC Trichet, at the time President of the European Central Bank, who in January of that year revealed a potential vulnerability in the Euro area. In February, the US company Freddie Mac, which specializes in the purchase of sub-prime mortgages and their conversion into MBS, Mortgage-Backed Security, for resale on the secondary market, announced that it was no longer willing to buy these assets as they were considered too risky<sup>18</sup>.

The situation began to get difficult when, in August (again thanks to ECB surveys), there was a worldwide liquidity shortage and a slowdown in bank lending. The system was beginning to sense the risk, but it was already too late. The attempts to ease the tension on the financial markets carried out between the end of 2007 and the beginning of 2008 by the main central banks of the world were of little use: at the beginning of September , the US Treasury had to enter in capital of the mentioned Freddie Mac and its similar Fannie Mae to avoid failure. A few days later, thanks to a providential work of the Federal Reserve, Merryll Lynch (one of the main overseas banking institutions) was bought by Bank of America. On September 15, 2008, the fourth larger American investment bank, Lehman Brothers, filed for bankruptcy by resorting to the famous Chapter 11 of the Bankruptcy Code. It should be noted that the financial institution owned over 600 billion of assets, against debt that was also higher to 600 billion. In addition, on September 16 the Treasury also entered in capital of AIG (American International Group), an insurance giant that had recorded monstrous losses due to its enormous exposure in credit default swaps sold to banks and other financial intermediaries<sup>19</sup>.

The panic exploded: between September and October the S&P500, one of the main world indices, recorded losses of over 25%, triggered by the phenomenon called "panic selling". A real credit crunch was generated; consumption, investment and income fell. Distrust was skyrocketing and, with it, the liquidity shortage widened. Various American investment funds saw requests for reimbursement of shares in the order of billions of dollars, while some banks suffered real "bank runs", finding themselves in total lack of liquidity<sup>20</sup>.

Pic. 3: S&P 500 between Jan 2008- Dec 2009

 <sup>&</sup>lt;sup>18</sup> Cfr. Federal Reserve Bank of St. Louis, *The Financial Crisis*, <u>https://fraser.stlouisfed.org/timeline/financial-crisis#2</u>
<sup>19</sup> Cfr. Federal Reserve Bank of St. Louis, *The Financial Crisis*, <u>https://fraser.stlouisfed.org/timeline/financial-crisis#2</u>

<sup>&</sup>lt;sup>20</sup> Cfr. Banca per i Regolamenti Internazionali, 79° Relazione Annuale, 29 june 2009



Finally, it is important to focus on the propagation mechanisms that generated the collapse of the global economy.

There were two typical characteristics of banks that allowed the crisis to spread like wildfire: financial leverage and liquidity.

#### Financial leverage:

It was convenient for the banking institutions at that time to increase their leverage ratio (assets/equity): with prices growing exponentially, they could achieve large returns using third party capital. The problem with leverage is that when things start to go wrong (in our case the value of assets decreased), it is difficult to escape catastrophe.

Commercial Banks	9,8
Cooperative Banks	8,7
Financial Companies	10
Investment Banks and Hedge Funds	27,1

Here are the leverage ratios of US financial institutions in 2007:

Source: Federal Reserve Bank of New York

Hence, many of these financial institutions went bankrupt due to the too high debt/equity ratio. Even the intermediaries who managed to avoid the collapse found themselves in great difficulty. In fact, they found themselves with a low level of equity and with the imperative need to consolidate their position (both for internal security reasons and for legal reasons). Unfortunately, given the situation, it was not possible to resort to the classic method of capital increase. Given the high level of distrust in the market, it was impossible to find new investors to include in their records. The only alternatives that could be undertaken were to decrease the activities and sell the more liquid assets. They then began to grant fewer mortgages and not to renew those maturing and at the same time to sell their equity participations. All this led to the collapse of all stock markets and the freezing of the credit market.

#### Liquidity:

In the years before the crisis it was common for a bank to finance itself in the short term by borrowing from other banks or other investors willing to lend them. If this method of financing grants the bank greater flexibility in the use of funds, its dependence on short-term loans also increases: when other banks or other lenders no longer trust, the bank concerned could run into a liquidity crisis and be forced to sell their assets.

There was also very little trust in the system, both in the banks and among the banks themselves, which stopped lending money to each other, fearing that the loan would not be repaid. This generated, starting from the second half of 2007, an increase in interbank financing rates (Libor) and, after the failure of Lehman Brothers in September 2008, the freezing of the interbank market.



source: https://fred.stlouisfed.org/series/USDONTD156N

The 2008 crisis does not only bring exorbitant economic damage to the US and the world, but inaugurates a new season of Western democracy, increasingly based on emphasizing the division between those social classes "survived" the crisis, and those damaged by the dynamics of globalization which led to the crash of 2008.

The serious blow suffered by the US economy (which was certainly able to recover, but at the cost of large debts and above all with great damage to image and credibility), then gave further impetus to the emergence of China as the first world economy, an overtaking that is being completed in recent months also due to the Coronavirus pandemic. according to what was reported in the "IlSole24Ore", China seems to be the only country in the world to report

positive growth rates at the end of 2020, and that despite all the problems caused by the coronavirus emergency, GDP recorded  $a + 2.3\%^{21}$ .

## **COVID-19** Crisis

The crisis of 2020, on the other hand, looks like a health crisis, but precisely for this reason it was more unpredictable and with more uncertain outcomes. Compared to the crises that preceded it - including that of 2007 - there are some clearly identified differences.

It all started in November 2019 when a new coronavirus (Sars-Cov-2) had started to circulate on Chinese territory, and, in particular, in Wuhan, the most populous city in the eastern part of the country and a hub for the commerce. Initially no one had realized the possible complications that this new virus could create. In fact, at first it was not even hypothesized that it was a new and unknown virus. What set off the alarm bell was when a large number of abnormal pneumonia, not attributable to already classified pathogens, began to be recorded in the city of Wuhan. The first official date that kicks off the whole coronavirus-related affair is 31 December 2019, in which the Chinese authorities give news for the first time of these anomalous events that were occurring inside the country. In early January 2020, the city had found dozens of cases and hundreds of people were under observation. Furthermore, the first investigations revealed that the first infected were frequent patrons of the

" Huanan Seafood Wholesale Market" in Wuhan, which has been closed since January 1, 2020, hence the hypothesis that the infection may have been caused by some product of animal origin sold in the market.

Ten days later the local Chinese media, before, and the World Health Organization then disclosed the news that the pathogen responsible for all these abnormal forms of flu is a new strain of coronavirus, which belongs to the same class of viruses responsible of Sars , Mers and common colds. On this occasion, instructions on how to limit the infection are provided for the first time. The Government advised to keep distance between people and avoid intercourse with subjects, still few and concentrated in Wuhan, who showed symptoms. On January 21, through the local authorities and the WHO, the world listened the results of the first studies of the virus; it was believed that the new coronavirus had made a leap in

species, passing from animal to human and that the transmission of it also took place between

<sup>&</sup>lt;sup>21</sup> Fatiguso, Rita, Cina, nel 2020 Pil in crescita del 2,3% grazie al boom dell'ultimo trimestre, il Sole 24 ore, 2020, <u>https://www.ilsole24ore.com/art/cina-2020-pil-crescita-23percento-grazie-boom-dell-ultimo-trimestre-ADoIMBEB</u>

people. At that moment, however, it was not clear how easily the infection could occur. In Italy the Ministry of Health begins to recommend to not go to China, except for necessity reasons. Meanwhile, Wuhan becomes the first isolated city and Chinese New Year celebrations were canceled for the first time in some of China's biggest cities such as Beijing and Macau. The situation in Italy was still stable and controlled, with very few cases coming from China and kept under control in the largest hospitals in the country.

At the end of the same month, however, the situation began to evolve, and the epidemic began to spread. The World Health Organization wrote in its press that the risk of contagion was "very high for China and high at a regional and global level", so much so that on the evening of January 30 was declared by the organization "public health emergency of international interest ". At the same time, the situation in China was already improving. Not later than ten days after the declaration of the emergency according to the WHO, the infections in China were stabilizing and it even seemed that they were starting to have a decreasing trend.

The critical date that marks the beginning of the pandemic for Italians is 21 February 2020. On this date, in fact, several cases of coronavirus positivity emerged in the Lodi area, in Lombardy: there were people not from China, and who did not seem to have had any contact with people who had recently returned from that country. For the first time an outbreak is identified on the Italian territory. Some of the most affected cities (such as Codogno, Castiglione d'Adda and Casalpusterlengo) are closed and declared "protected territories", within which travel is not possible except for reasons of urgency and necessity. Coronavirus begins to spread around the world, which in the meantime changes its name and becomes "COVID-19<sup>22</sup>", still patchy, so much so that the WHO has not yet declared a pandemic status. However, as the days pass, between the end of February and the beginning of March, an increasing number of cases are revealed in all European countries.

With the beginning of March, the contagion began to spread throughout the Italian territory, the north was still the most affected. For this reason, on March 4, 2020, the Government gives the green light to the closure of schools and universities, initially for a period of two weeks but will then be extended. A few days later a new DPCM was issued which decreed Lombardy "red zone" to which the same rules applied for municipalities classified as "protected territories" were applied.

<sup>&</sup>lt;sup>22</sup> The name Covid-19 originates from: *Co* and *vi* to indicate the family of coronaviruses, *d* to indicate the disease and finally 19 to emphasize that it was discovered in 2019. Also the virus changes its name and is no longer called 2019nCoV, but Sars-CoV-2 because the pathogen is a relative of the coronavirus responsible for Sars (which, however, was much more lethal even if less contagious).

However, given the criticality of hospitals across the country as the pandemic progresses, on 9 March, the prime minister Giuseppe Conte issue a new Decree, which came into force on the following day, where it is stated that the measures taken in Lombardy for contain the contagion from that moment would have been extended to all of Italy. From that moment, Italians have effectively entered a state of lock-down, where they are not allowed to leave the house except for proven reasons of necessity such as for shopping foods, for work needs, for the purchase of drugs or for other health reasons.

From this moment the people of the Western world begin to realize the gravity of the thing. On the same day, 11 March, in which the director of WHO Tedros Adhanom Ghebreyesus , announced in the briefing from Geneva on the coronavirus epidemic that Covid-19 *"can be characterized as a pandemic situation"*, declaring the pandemic , the financial markets immediately began to suffer from general concern over the economic consequences that this virus was causing. The FTSE- MIB closed the trading day, a decrease of 16.92%, posting the worst seat in its history. Two days later Wall Street will mark the worst daily decline since 1987: -12%.

All this uncertainty in the markets and the crisis that seemed about to begin forces the Fed to make an emergency move: the US central bank surprisingly cuts interest rates to 0-0.25% as a measure to counter the effects of the pandemic from coronavirus. A massive Quantitative Easing program is also launched to buy \$700 billion of bond state and mortgage-backed securities. The governments and central banks, recently outputs from years of expansionary policy for the sovereign debt crisis, are facing an even more dizzying precipice than years past. More and more countries in lock-down, industry stopped, tourism and events stopped. At the end of March, nearly 3.3 million workers in the United States applied for unemployment benefits, a fact that makes us understand the real gravity of the situation. That's a huge number, unprecedented in modern US history. Five times more than the previous all-time high of 695,000 which dates to October 1982. It is the first significant government figure to fully reflect the impact of the pandemic on the economy. Congress and the White House launch a two-trillion-dollar plan to help economic activity alongside the health system.

With the beginning of April, fortunately the situation in Italy begins to improve. On 5 April for the first time, there was a decline in the number of patients admitted to intensive care: -79. For a total of 3994. It is perhaps the crucial step for Italy that announces the arrival in the plateau phase. A few days later, thanks to the containment measures put in place by the government, there was a decline in infections in absolute terms for the first time.

Finally, with the advance of spring and the climatic improvement that has made the virus less aggressive, combined with all restrictive containment measures, Italy effectively emerges from the health crisis and, on 18 May 2020, with a new DPCM begins a new phase of reopening that marks the end of the lockdown that began in March. Bars and restaurants reopen, as well as many production chains. It is possible to meet people outside one's family or affective unit, and self-certification is no longer necessary to move within the same region.

I conclude this brief reconstruction of the most significant events of recent months (from the beginning of the pandemic to August 2020) by reiterating that the crisis connected to the spread of the Covid-19 pandemic represents an epochal event destined to generate strong economic and social repercussions, currently difficult to estimate, since we are not yet out of danger and it is not even hypothesize a date on which we would be sure of being out of the pandemic . Data on infections and deaths are still growing in some areas of the world, especially in less developed countries. The infection situation in Italy in August proved to be stable with low infection rates. The Government however already starting to evaluate possible maneuvers that can be applied in view of a second wave of infections.

#### Economy in time of Covid-19

As for the effects that the pandemic will have on the economy, it is not possible at the moment to make a forecast since we are still in the middle of the "problem".

Thorsten Beck writes in fact "Economists have a bad track record in predictions, so I will not try my hand at predicting the effect of the novel coronavirus (COVID-19) on the global financial system or the global economy. Rather, I would like to offer some ideas on how to interpret what might happen during the next months. Obviously, the effect of the virus on the financial system will depend on (1) how much further the virus will spread across the globe and its effect on economic activity, (2) fiscal and monetary policy reactions to the shock, and (3) regulatory reactions to possible bank fragility. Current economic scenarios range from a small growth dip over a recession in several affected countries to a global recession as in 2008/9. While there is less monetary policy space today than during the Great Recession, bank regulatory and resolution frameworks certainly offer more policy options than 12 years ago, though the question is whether they are really fit to deal with a systemic crisis."<sup>23</sup>

<sup>&</sup>lt;sup>23</sup>Cfr. Baldwin, Richard, Economics in the Time of COVID-19 (https://voxeu.org/content/economics-time-covid-19)

Literature is slowly becoming populated with studies that relate the effects of a pandemic on the economy, never studied before, Nuhu A Sana writes " Globally, the COVID - 19 shock is severe even compared to the Great Financial Crisis in 2007–08. However, the impact of the COVID - 19 on the financial markets has never been researched. Different Monetary International organisations and platforms have alerted that the recent COVID – 19 will have serious effects on the global economy and perhaps the effects will surpass the 2007/2008 world economic crises". He was perhaps one of the first to study the effects that the virus had in the market, in fact in his research he analyzes the Chinese index (Shanghai Stock Exchange) and the American one (New York Dow Jones) in the first month of COVID- 19, 1st March - 25th March. As expected, the study shows a strong relationship between the number of confirmed cases and movements in the financial market, " The study findings revealed that there is a positive significant relationship between the COVID - 19 confirmed cases and all the financial markets".

Together with Nuhu A Sana, O. Erdem also questioned the effects of the pandemic on the financial market. Unlike the author mentioned above, he analyzed 75 countries in order to try to draw a general economic picture. Furthermore, the research also highlights how the freedom of disclosure affects the trend of the country's market index. The author starts from the fact that in his opinion in countries where freedom of speech is greater, there seem to be more confirmed cases and deaths than in others where this freedom is more limited. The first element that Erdem found in his work is the close relationship between the trend of the indices taken in analysis and the announcements on the trend of the pandemic. As can be expected, there is a negative relationship between these two elements. In fact, the yields of the indices taken in analysis decrease and increase their volatility every time a new news regarding the increase of confirmed cases is diffused. Erdem then showed that the effect caused by the growth in the number of cases on stock returns is three times greater than the effect caused by the announcements regarding coronavirus deaths. Interesting is also the relationship between the freedom of disclosure of information and the performance of shares. It seems that in the freer countries the effect of announcements concerning infections is less than that of the states with a lower degree of freedom. The same is true for volatility, in the freer countries smaller increases are associated than those with stronger censorship.<sup>24</sup>

<sup>&</sup>lt;sup>24</sup>Cfr. Freedom and stock market performance during Covid-19 outbreak, Orhan Erdem, Elsevier, June 2020

## **Behavioral finance**

Taking into account one of the fundamental pillars of the modern economy as the "hypothesis of efficient markets", you immediately realize, looking the trend of real prices and the one proposed by the hypothesis, that there are discrepancies between these two values.

The market efficiency initially hypothesized by Samuelson (1965) and Mandelbrot (1966), part from the concept that market dynamics occur efficiently. In particular, all players in the market behave rationally by allocating their own financial resources in the best possible way. In theory, therefore, potential investors will buy the undervalued shares and sell the overvalued shares. To do this, a "valuation efficiency" is taken for granted, in other words, since everyone has all the information available in the market, all subjects manage to efficiently evaluate the investments to be made.

All of these long-term behavior causes prices to align around their "equilibrium price". In practice, however, this does not happen. This is caused by the existence of asymmetric information between the various economic agents present in the market. In addition, efficient market hypothesis, like other neoclassical theories, does not take into account the emotional aspect of the human being, leaving emotions out of the paradigm. The latter, in practice, however, play a determined role in the process of investment decision making.

It may be that an investor decides to implement an investment strategy not because it is driven by rationality but rather because it is driven by emotional factors such as security, pride or greed. Past experience also has a significant influence on the investor, leading to an inefficient position in the market, with the risk of losses.

Investing in financial markets, especially in recent years, has become increasingly common among small investors, both because there are more and more platforms that allow small investors to invest money in the stock market, both because thanks to the process of globalization and digitalization, nowadays it is possible to find information on any topic in real time. Potentially, therefore, every subject has all the instruments, that before were reserved only to determined qualified subjects, for interact with the market, and, more importantly, for a correct appraisal of the own choices of investment. "But despite having the fastest car in the world is not guaranteed victory in the race". I personally invented this metaphor to say that despite the possibility of having all the information available in the markets, certain skills are still needed to know how to analyze them. It seems obvious, but especially among small investors often lack precisely these evaluative skills that are the cause of market inefficiencies. Investment decisions generally depend on data derived from

reworkings on the time series of certain companies or on the expectations that one has on the future financial position of a company. It may happen, however, that some market participants put in place actions not driven by logic, but rather inspired by the mood or by particular past experiences, thus causing unexpected price variations, especially in the short term. This creates anomalies in the behaviour of investors, which cause market imbalances that neoclassical economic theories do not consider.

In order to solve this problem of lack consideration of the emotional aspects of the investors, behavioral finance comes to our aid. It helps to explain the difference between the expectations of investor behaviour and what is actually held in reality.<sup>25</sup>

This discipline covers the part of the study, in the economic sector, relating to the behaviour of economic agents within the market and how the latter is influenced by them. More specifically, it focuses on the study of cognitive psychology, trying to fully understand why the rationality of economic agents is lacking in certain market contexts.

Behavioural finance develops along three main points:

- 1- the heuristic, which deals with the analysis and understanding of decisions made by past emotions and experiences;
- 2- the prospect theory, which studies how a given action is affected by the way in which the information is presented;
- 3- market inefficiencies, which take into consideration all those situations where rationality and market efficiency are lacking.

To get a better idea of how wide the field of analysis of behavioral finance is, the figure below lists and groups by category all the errors, studied and analyzed by this branch of the economy, that come into play when an entity takes investment decision-making.

<sup>&</sup>lt;sup>25</sup>Cfr. "Evolution of Behavioral Finance", P. Veni, Rajani Kandregula, International Journal of Scientific Development and Research, March 2020
Pic. 7: Elements of behavioral finance



Before entering the specific analysis of the three blocks introduced above, it is appropriate to specify one thing: often in the behavioral literature the term "error" is used referring to any investor behavior. This term, however, should not be interpreted as negative. These would be errors compared to the classic model that presupposes a rational behaviour of the investor/saver, oriented to optimize and maximize the utility. But since in reality this subject does not exist, the term "error" must be considered to a lesser extent.

# Heuristic Behavior

The first block includes the whole section relating to the heuristic. In this section we find all those mistakes that derive from past experiences and emotions. Among the most significant errors we find:

- Overconfidence

People are overconfident about their abilities. Entrepreneurs are especially likely to be overconfident. Overconfidence manifests itself in a number of ways. One example is too little Diversification, because of a tendency to invest too much in what one is familiar with. In more general terms, overconfidence leads to excessively tight confidence intervals, which tend to underestimate the probability of higher results and overestimate the probability of lower results than expected. Overconfidence then has a number of other manifestations known as "better than average effect" and "illusion of control". In the first case it refers to the fact that people tend to feel they have above-average abilities. In this regard, Svenson's experiment with a group of students is very famous<sup>26</sup>. Professor asked them if they consider drivers with driving skills higher or lower than the average population. Well over 80% of respondents believe they have higher or slightly higher than average capacities. The theme of the illusion of control, which is often associated with an excessive degree of optimism in their abilities, is manifested in the conviction of being able to control events that objectively escape the direct control of agents. The financial implications are widely documented and consist mainly of excessive portfolio handling and concentration. In other words, the studies carried out on individual investor portfolios show the presence of a small number of securities in the investment portfolio.

#### - Representativeness

Representativeness refers to the tendency to resort to stereotypes when we are called upon to make decisions. In other words, as a result of representativeness, the probability attributed to an event depends on how much that event is "representative" of a class. The term representative is in this case synonymous with "resemblance", "similar". Often the similarity can be effective in making a decision, as certain traits are typical of a class, but this is not necessarily true.

Also that, people underweight long-term averages. People tend to put too much weight on recent experience. This is sometimes known as the "law of small numbers".

#### - Conservatism

When things change, people tend to be slow to pick up on the changes. In other words, they anchor on the ways things have normally been. When things change, people might underreact because of the conservatism bias. However, if there is a long enough pattern, then they will adjust to it and possibly overreact, underweighting the long-term average. "Quantitative anchors" are numbers or quantitative variables used to provide an estimate. An example is past stock prices. However, since most of human thought is not quantitative, "moral/qualitative anchors" instead determine the strength of motivation that drives agents to acquire titles, reasons which must prevail over alternative uses of wealth available to

<sup>&</sup>lt;sup>26</sup>Cfr. "Are we all less risky and more skillful than our fellow drivers?", Ola Svenson, North-Holland Publishing Company, March 1980

them. They are cultural motivations, the capitalist propensity to invest in actions, or, as we said, moral, such as the ethical importance that savings can have.

- Availability

According to this cognitive model, individuals tend to attribute to an event a probability based on the number and ease with which they recall such event. In other words, we estimate the frequency, probability, or simply the causes of an event through the intensity with which such facts or events are available in our memory. The more often an event occurs in the past, the easier it is for us to imagine it could happen again. Events that have not already occurred will be more difficult to imagine and, consequently, considered less likely.

# **Prospect Theory**

Prospect theory, developed by Kahneman and Tversky<sup>27</sup> in 1979, marks an important turning point for the world of finance. In fact, the theory aims to integrate and improve the well-known Expected Utility Theory.

The latter theory initially assumes that the investor is rational and aims to maximise its utility curve. To do this, the investor's asset allocation process consists in two parts:

- 1- Efficient frontier construction, that is the construction of all the portfolios that maximize the utility to a given level of risk;
- 2- Choice of portfolio basing on your risk profile;

taking into account that in the theory described by the two economists the marginal utility is decreasing, the final formula for the calculation of the expected utility can be written as:

$$\mathbf{E}(\mathbf{U}) = \overline{r} - \frac{1}{2} * A * \sigma^2$$

Where

" $\bar{r}$ " is the portfolio expected return;

"*A*" is the level of risk aversion

" $\sigma^2$ " is the portfolio variance

<sup>&</sup>lt;sup>27</sup>Cfr. "Prospect theory: an analysis of decision under risk", Daniel Kahneman, Amos Tversky, The Econometric Society, 1979

In this case the expected utility is equal to the expected return on the portfolio minus a coefficient "A" which multiplies half risk of the portfolio (variance). As "A" increases, which defines the level of risk aversion, the premium increases in terms of the expected return that the investor requires to hold a risky asset.

The graph that relates the expected utility of an investor and the portfolio that it should choose is shown below:

Pic. 8: investor utility



Going however to analyze what are the choices that put in place the investors, we realize that they do not always follow a rational behavior aimed at maximizing the utility, as suggested by the expected utility theory. And it is from this problem that Kahneman and Tversky start their studies. According to them, in fact, from the scheme described above there are three main violations in practice:

- 1- Certainty effect;
- 2- Reflection effect;
- 3- Isolation effect;

These three errors relate to the way in which the average consumer assesses the decisions to be taken on the basis of the data available to him. The studies show that it is not so much the decision itself that leads an investor to choose a particular portfolio but rather the way in which the information needed to make a decision is presented.

To begin and explain this error, let's take an experiment conducted by Maurice Allais (1953) and then taken up by the two economists who wrote this theory.

The aim was to determine whether investors properly assess the probabilities of certain events and their impact on end-use. Two lotteries were offered to the 72 interviewees:

lottery 1- choose from A (2500, p=0,33; 2400 p=0,66; 0, p=0,01) and B (2400) lottery 2- choose from C (2500, p=0,33; 0, p=0,67) and D (2400, p=0,34; 0, p=0,66)

At the end of the interviews 82% of respondents had chosen B in the first lottery, while in the second lottery 83% of respondents had expressed preference over option C.

analyzing the expected utility of the various lotteries we see that:

lottery 1 results decree

therefore

$$u(2400) > 0,33u(2500)+0,66u(2400)$$

if we subtract 0.66u(2400) from this inequality to both terms we will get

0,34u(2400)>0,33u(2500) that are the prizes of lottery 2, 034u(2400) = D; 0,33u(2500) = C

However, taking up the results of the interviews, we note that the choices of the interviewees are inconsistent with the expected utility theory. In fact, according to the theory in the second lottery 2 should be preferred to D, but in reality, C was preferred.

This experiment shows that investors tend not to properly assess the information provided. From the results we can say that investors appreciate certain events disproportionately and do not consider at all the differences between events very unlikely.

In summary, the certainty effect leads to assess more than the due certain events; on the other hand, to make choices of extreme risk when the odds are low. In practice this error affects the asset allocation decision. Investors are led to concentrate their wealth in investments with certain results

but with low yields and low volatility at the expense of investments with higher yields but with a long-term horizon and higher risk.

From this experiment, finally, looking at the result of lottery 2, which presented low odds, we can conclude that when the chances of success are very low people fail to discriminate and focus exclusively on the possible gain, taking excessive risks. The higher is the maximum value of the lottery, less important the objective probability is. That explains the success of the lottery, as the "Powerball" in USA or the "Superenalotto" in Italy.

In the financial market the certainty error feeds the creation of bubbles.

In a euphoria period, investors could buy certain securities that, without any precise motivation, are believed to be destined to grow. the initial price increases constantly stimulate subsequent prices due to the greater demand created by the same initial increases. In the same way that this mechanism affects prices, investors' confidence and expectations are also self-sustaining as a result of this loop. The mechanism continues until the limit is reached and the inverse trend is generated. In fact, these people make a bet against the market. They buy securities that at a certain point in time are going up, without making an analysis of whether growth is sustainable or not. That's what happened with the speculative bubble of .com at the beginning of the millennium.

In addition to the disproportionate value that investors attribute to "certainty", the experimental evidence shows a second violation of the rational approach. The classical theory of expected utility provides that gains and losses are considered in the same way. However, it is observed that subjects tend to have very different risk-faced behaviors when compared with losses and gains. In fact, there is a "reflection effect" of the risk propensities for the investors around the zero value. This emerges from the results obtained from a small modification made to the experiment reported above and repeated by the two economists to the interviewees. This time in addition to the lotteries with positive values, new lotteries have been proposed, equal in the values to the first but with opposite sign.

Tab 2: Lottery preferences with positive and negative results

"p" is the probability of success. The number between [] are the result, in percentage, of that particular game.

Lotteries with positive results	Lotteries with negative results		
(4000, p=0,80) < (3000)	(-4000, p=0,80) > (-3000)		
[20] [80]	[92] [8]		
(4000, p=20) > (3000, p=25)	(-4000, p=20) < (-3000, p=25)		
[65] [35]	[42] [58]		
(3000, p=90) > (6000, p=45)	(-3000, p=90) < (-6000, p=45)		
[86] [14]	[8] [92]		
(3000, p=0,02) < (6000, p=0,01)	(-3000, p=0,02) > (-6000, p=0,01)		
[27] [73]	[70] [30]		

source: "Finanza Comportamentale, Scoprire gli errori che ci fanno perdere denaro", Barbara Alemanni, Egea, first edition 2015, p. 45

In the case of positive lotteries, in fact, the subjects tend to be averse to the risk, preferring lower prizes against a higher probability of success. But, in the second case, the ones expressed as a function of potential losses, the subjects tend to become lovers of risk, preferring to risk a greater loss against a reduction of probability.

As already mentioned, this phenomenon is not explained by the classical theory, which provides a constant aversion to risk.

The last mistake presented by the "Prospect Theory" is the "isolation effect" and consists in the tendency of investors to overlook the common elements between several options and to focus the assessment on the differentiation aspects.

Also in this case it is appropriate to give an example to better understand this error: Let's assume a two-part lottery. In the first stage, the player has a 0.25 chance of entering in the second stage. In the case of success, the player must choose between trying to win  $\notin$ 4,000, and in this case the probability of success is 0.8 or immediately receive  $\notin$ 3,000. However, the action to be taken in the second stage must be decided before the outcome of the first stage is known. This lottery is like the "lottery 2" described above for the "certainty effect". We find, also in this case, two different payoffs but with almost the same chance of success. In fact, the probability of winning  $4000 \in$  is 0.2 (0.25\*0.8) while for  $3000 \in$  the probability is 0.25 (0.25\*1).

If we had to take into account the first example, the one used to explain the "certainty effect", to hypothesize which choice will be preferred by the players, we would be inclined to say that the majority of players is prone to risk and choose to try to win 4000 $\in$ . But no. Almost 80% of the players in this case prefer not to risk and receive safely the 3000 $\in$  once passed the first stage. This result allows us to say that players do not have an overview and tend to focus exclusively on the alternatives of the second stage, neglecting the chances of the first stage, which are common to both choices.

I also add that the difficulty of investors to understand and implement the rules typical of financial planning, that is to seek a good market and time diversification, among other things depends on two additional cognitive dynamics:

#### - Mental accounting

People sometimes separate decisions that should, in principle, be combined. Normal people tend to open many mental compartments in which they reclassify money according to its origin, destination and use. Mental accounting therefore influences the management of money and is able to explain some typical attitudes that are often "not very" rational. Thaler's theory of hedonic framing explains why gains and losses are treated differently depending on their size, order, and frequency. We usually prefer to earn little each day of the week rather than perceive an equal amount on the first day of the week. The reason is that the pleasure does not increase proportionally to the size of the gain. Receiving \$100 does not generate 10 times more pleasure than receiving \$10. The same concept applies to losses. One big loss at a time hurts less than many small constant losses. Basically, according to this theory we apply rules that unconsciously help us to maximize the pleasure of life: distribute earnings to enjoy more positive reinforcements; Integrating losses to have as few negative experiences as possible. The concept of hedonic framing is easily applicable to individual securities in an investment portfolio. Investors tend to consider securities that have earned value separately and enjoy each, even if the gain is minimal. Loss-making positions are often classified as long-term investments, which are part of a portfolio strategy. We tend to summarize loss-making investments by industry or investment categories instead of facing every single loss.

#### - Framing

Framing is the notion that how a concept is presented to individuals matters.

Many mistakes that we make in the financial field come from the use of too narrow frames, which lead us to distorted representations of reality and consequent preferences. Take, for example, the case of the so-called "myopic loss aversion" that occurs in the case of more volatile investments. Although in the long run the share market generally offers much higher yields than the bond or money market investments, in the short term (for example during a year) the return on equity may be much lower. Rational investors should know this and, consequently, invest in the long term. Therefore, the risk premiums required by investors for equity investments should be very low, as in the long term the possibility of equity investments generating lower results than the money market is very limited. However, long-term investors check the portfolio regularly. Even with an investment horizon of 20 years, an investor tends to control the evolution of investments at least once a year. Through repeated checks, investors are made aware of any significant short-term losses of equity investments and claim to be adequately remunerated with a higher risk premium. In general, although their time horizon allows them to take more risk, they tend to prefer more conservative portfolios.

A different form of temporal myopia is manifested in the case of those investors who base their investment decisions solely on short-term risk perception. What results from this from a financial point of view is a real "schizophrenia" in terms of risk-taking. We are faced with investors who, at certain stages of the market perceived as negative, have a portfolio that is 100% liquid and, a few months later, with the improvement of market prospects, they fully recompose investments in risky activities. In this case, there is the total denial of any strategic asset allocation reasoning.

From this analysis we say that a normal individual during his investment decision making, is characterized by these series of anomalies:

- non-linear assessment of probabilities;
- variable risk aversion;
- defined utility on gains/losses and not on final wealth;
- dependence between investment choices and the way options are presented;

changes the paradigm on which the expected utility theory is based. The above chart is therefore not efficient to describe the utility of investors. Considering what has emerged, the graph below fits much better to describe the attitude of individuals.



Pic. 9: investor utility according to Prospect Theory

## The Market Inefficiencies

As explained at the opening of this paragraph, the theory most used and accredited within the economic world when it speaks of market dynamics is certainly the Efficient Market Hypotesis, formulated in the early '60s by some economists of the Chicago school.

Recall that the key assumptions from which this theory takes the first steps are:

- the information is available free of charge and at any time to any interested party;
- individuals are perfectly rational;
- investors always try to maximise their expected utility;

According to this theory, market prices always reflect all available information. Information from historical series, public or private sources.

Depending on the type of information that prices reflect, three levels of efficiency are defined: weak, semi-strong, strong. In the first case, the prices reflect only the data of the historical series, in a context of semi-strong efficiency the prices, besides reflecting the information from the historical series and also reflect the public information. Finally, in a context of strong efficiency, prices are set considering all three types of information. Although there are three types of information, however, and three forms of market efficiency, it is important to remind that in no case investors can put in place strategies with expected return higher than the return of the market portfolio. All this, however, does not mean that the Efficient Markets Hypothesis argues that the market price of securities, must necessarily be equal at all times to fundamental value, the value calculated by discounting all future cash flows that will generate that security. What the EMH actually wants to show is that the market price represents the best benchmark to get as close as possible to what is the true value of a stock.

Trying then to develop a model as faithful as possible to reality, however, the EMH admits the presence of noise traders<sup>28</sup>, that are those subjects that do not make decisions according to logical reasoning. These investors create imbalances within the market by taking prices away from their equilibrium values. In this situation, then, come into play the arbitrageurs, who buy and sell simultaneously in different markets security that have moved away from their supposed fundamental value, generating instant profits in complete absence of risk, bring the market back into equilibrium.

According to the model proposed by EMH, efficiency is therefore guaranteed by arbitrageurs, who by exploiting market inefficiencies to generate profits, immediately restore efficiency. However, it seems that this mechanism does not succeed in ensuring a constant and effective market balance.

About the limitation of the arbitrage Shleifer and Vishny<sup>29</sup> argue in their work that an important reason according to which the arbitrage is limited is the unpredictability of the investor behavior. Such unpredictability becomes less bearable when referees are averse to risk or manage other people's money. In this case, the risk of losing money, when the performance is mediocre, induces them to reduce the degree of the position they assume.

The reason for all this lies in the fact that, as Gromb and Vayanos<sup>30</sup> have pointed out, arbitrage is often limited by costs and risks that undermine its profitability, transforming it from an opportunity to obtain a free profit to another where there are not negligible chances of recording losses.

Here below are recalled the most important risks that effectively limit the work of arbitrageurs:

Fundamental Risk: the specific risk of a security is that part of risk that can be eliminated through diversification and depends exclusively on the news related to the security issuer. This type of risk is often not completely eliminable as it is extremely difficult to find two stocks with a perfect negative correlation. A further problem can arise when due to the

<sup>&</sup>lt;sup>28</sup>Cfr. "Continuous auctions and insider trading" Econometric, Kyle, 1985

<sup>&</sup>lt;sup>29</sup>Cfr. "The limits of arbitrage", Andrei Shleifer, Robert W. Vishny, The Journal of Finance, March 1997

<sup>&</sup>lt;sup>30</sup>Cfr. "Limits of arbitrage: the state of theory", Denis Gromb, Dimitri Vayanos, National Bureau of Economic Research, March 2010

temporary or prolonged shortage of securities, it is not possible to short sell on the market and therefore obtain a riskless profit in the event that the price rose above the right value;

- Noise Trader Risk: noise trading limits arbitrage possibilities as there is a risk that irrational investors will further ride the bullish or bearish trend created by them. This risk as demonstrated by Gromb and Vayanos<sup>31</sup> becomes dangerous when the arbitrageurs not having enough liquidity to bet against the noise traders, may find themselves forced to close their position suffering a loss;
- Agency Costs: the agency costs are when the arbitrager (agent) is a portfolio manager and invests the capital of another person (principal). In this case, the principal does not have the ability to assess the investment strategy of the agent. For this reason, his valuation is based exclusively on the return. The fear on the part of the arbitrager not being able to produce positive results in the short term and being forced to close the position means that some choices of investment perhaps very profitable are not considered;
- Implementation Costs: the transaction costs analyzed by Vayanos<sup>32</sup> are all those costs that make it possible to recognize a profitable opportunity and consequently open a position within the market. If these costs, which are usually represented by commissions and the "information costs" described by Fama<sup>33</sup>, exceed the profit obtainable thanks to arbitrage, the profitable opportunity will be lost.

It is therefore clear that the limits to arbitrage can be an obstacle to the achievement of efficient markets, as they were thought by Fama. Not infrequently in fact it happens to find situations in which the mispricing of a Stock remains inside of the market for long periods of time.

I conclude by saying that, all the errors listed above are related to behaviors that individuals may manifest in their investment path. In fact, these biases are the cause of deviations from objective standards that economic models establish. For example, in the neoclassical impact model, the fact that a consumer's preferences change over time is a bias for theory.

For some of these biases, such as the tendency to be averse to losses or the use of a mental accounting that creates a sort of "pyramid of investments" in the minds of individuals, there are no strategies or lessons that allow to eliminate them, because these are inherent characteristics in most human beings.

<sup>&</sup>lt;sup>31</sup>Cfr. "Equilibrium and welfare in markets with financially constrained arbitrageurs", Denis Gromb, Dimitri Vayanos, Journal of financial economics, December 2002

<sup>&</sup>lt;sup>32</sup>Cfr. "Transaction Costs and Asset Prices: A Dynamic Equilibrium Model", Dimitri Vayanos, 1998

<sup>&</sup>lt;sup>33</sup>Cfr. "Efficient Capital Markets: II" Eugene F., Fama, The Journal of finance, December 1991

The same does not apply, however, to other types of mistakes often made, such as overconfidence or anchoring, for which it is possible to try to make a correction. And it is in this context that "behavioral finance" comes in handy.

# **Financial Education**

Certain beliefs or requests expressed by clients to their financial advisors or the expectations that investors place in the results of their choices are often branded as irrational. In reality, there are many situations in which such requests originate from a lack of knowledge in the financial sector, rather than from actual irrationality. In fact, if an investor does not fully recognize the concept of risk and struggles to understand the trade-off inherent in investments between return and risk, when he turns to his financial advisor, perceived as the investment expert, asking him to "make money without taking risks", he will be making a perfectly rational request, given the set of information available. If, then, in the mind of the investor the concept of diversification is unclear, he could believe that he has diversified appropriately simply by investing in a range of BTPs of different maturities. Before any behavioral reasoning, it is therefore necessary to question what level of financial education the investor has.

Some research carried out in recent years within the Italian territory indicates that the average citizen has a modest financial culture that is not adequate respect to the responsibilities that financial choices entail today, tends to obtain little information, finds it difficult to translate their own financial knowledge on a practical level. Given that the problem of financial literacy is a common theme in all states of the world, the degree of financial education of Italians, inferred on the basis of the quality of their financial behavior, their level of knowledge and financial information, appears insufficient and in any case lower than other countries. From various researches conducted in Italy it has emerged that 37% of respondents are able to correctly answer questions on basic concepts of finance<sup>34</sup>. From this data it is understood that the level of financial education in Italy is still too low and it is essential to find new means to raise it.

# What is financial education?

According to the definition developed by the OECD in 2005, promoted by G20 leaders in 2012, and adopted by individual countries as part of their national strategies, financial education is "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills

<sup>&</sup>lt;sup>34</sup> Cfr. "Finanza Comportamentale, Scoprire gli errori che ci fanno perdere denaro", Barbara Alemanni, Egea, first edition 2015

and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being "<sup>35</sup>.

Financial education therefore includes all programs and activities that aim to improve knowledge, behavior and attitude in the financial field with a positive effect in terms of greater confidence and awareness in making responsible financial decisions. The result of the financial education process is financial literacy, which consists of the combination of awareness, knowledge, skills, attitudes, and behaviors necessary to make financial decisions and achieve financial well-being (OECD / INFE, 2012). In particular, financial knowledge represents the knowledge of elementary financial concepts and the ability to apply calculation skills in a financial context.

According to the approach proposed by the OECD, financial education appears to be instrumental to improve the behavior and attitude of individuals, to promote a long-term view in consumers when making savings decisions, and safer planning in retirement perspective. In fact, there are various costs that economic actors may have to face over their life cycle due to an unsatisfactory degree of financial literacy. Financial education would therefore bring numerous benefits not only for individuals and for various stakeholders, public and private, but also for the financial system as a whole. In most countries that have adopted this definition, financial education is also considered, as a complementary element of regulatory measures, essential in defense for consumer protection. The ambitious process of drawing up a national financial education strategy, however, requires a detailed preliminary analysis that defines the reference environment to which the tools are addressed and the objectives to be pursued and subsequently be able to verify ex-post. In 2005 the OECD conducted a first study on financial education for twelve of its member countries. Since then, the sample has been extended. The last survey was conducted in 2017 and the results for the various countries in relation to the level of knowledge and consequent behavior in the financial sector, in terms of "Financial Knowledge", "Financial Behavior", "Financial Attitude" and therefore of "Financial Literacy" are reported below.

<sup>&</sup>lt;sup>35</sup> Cfr. OCSE (2005), Recommendation of the Council on Principles and Good Practices on Financial Education and Awareness.

Country	Average financial knowledge score	Average financial behaviour score	Average financial attitude score	Average financial literacy score	
France	4.9	6.7	3.2	14.9	
Canada	4.9	6.2	3.5	14.6	
Norway	5.2	5.8	3.6	14.6	
China	4.7	6.2	3.1	14.1	
Korea	4.9	5.8	3.2	13.9	
Germany	4.8	5.8	3.2	13.8	
Indonesia	3.9	5.7	3.7	13.4	
Netherlands	4.9	5.2	3.3	13.4	
United Kingdom	4.2	5.6	3.3	13.1	
Average, G20 countries	4.3	5.4	3	12.7	
Turkey	4.6	4.8	3.1	12.5	
Russian Federation	4.1	5.1	2.9	12.2	
Brazil	4.3	4.6	3.1	12.1	
Mexico	4.1	5	3	12.1	
India	3.7	5.6	2.6	11.9	
Argentina	4.1	4.4	2.9	11.4	
Italy	3.5	4.4	3.1	11	
Saudi Arabia	3.9	5.6	0.1	9.6	
Japan			3.4		
South Africa	3.7		3.1		

#### Tab 3: levels of financial education of OECD country members

Fonte: OCSE (2017), G20/OCSE INFE report on adult financial literacy in G20 countries.

In 2005, the OECD recommended that member countries promote financial education and awareness with the publication of the Recommendation on Principles and Good Practices for Financial Education and Awareness. So, the Organization for Economic Cooperation and Development has urged member countries to consider and disseminate the principles and "good practices" among all stakeholders who cooperate in financial education, ie public, private and non-public institutions. -profit.

According to the OECD, a national strategy for financial education is "a coordinated national approach to financial education consisting of an appropriate framework or program that:

- recognize the importance of financial education also at the legislative level and define its meaning and purpose at the national level according to the needs and gaps that have emerged at the national level;
- is based on cooperation with the various stakeholders and on the identification of a leading authority or an institution that guarantees coordination;
- establish a roadmap to achieve specific and pre-established objectives within a certain period;
- provide guidelines for individual programs so that each contributes efficiently and appropriately to the national plan. "<sup>36</sup>

<sup>&</sup>lt;sup>36</sup> OCSE (2013), Advancing National Strategies for Financial Education, a joint publication by Russia's G20 Presidency and the OCSE

### Alphabetization strategies in Italy

The introduction of a national strategy for financial education in Italy took place only recently, with a law issued in 2016 (law 26 December 2016, n. 237). In previous years, in the absence of a national plan, some initiatives were activated in a fragmented and uncoordinated manner, public and private, with the aim of making up for poor financial education. In fact, multiple surveys testify to a low level for the financial knowledge of Italians: S&P Global Financial Literacy Survey; reports by Allianz, CONSOB, COVIP / CENSIS and the Centro Ente Einaudi; survey on Italians' literacy and financial skills (IACOFI) conducted by the Bank of Italy. In particular, Italy ranks last among European countries in Standard & Poor's "Global Finlit Survey" carried out in 2014, with only 37% of adults able to correctly answer questions on basic concepts. The surveys carried out by the other operators, by the Bank of Italy, and the PISA tests confirm a particularly low level of financial education. The CONSOB report on the investment choices of Italian households published in 2016 notes that only 40% of those interviewed are able to define inflation and the risk-return ratio.

A first step towards the elaboration of the national strategy was to call a census of the financial education initiatives present in the country. The first census took place in 2016 with reference to the 2012-2014 three-year period. A critical situation emerged from the survey carried out, attributable to the fragmented nature of the experiences and the scarce incisiveness of the initiatives. In fact, 206 initiatives were active between 2012-2016. There were 256 lenders in all, including: financial institutions (banks, insurance companies and associations); schools, public administration and local authorities; associations; universities and research institutes. Some of the initiatives also provided the involvement of the supervisory authorities, such as the Bank of Italy, CONSOB, IVASS and COVIP. 99 initiatives are specifically aimed at students (of which 40% education and 60% awareness raising), while 107 are aimed at adults (25% education, 75% awareness raising). Overall, financial education has reached around 700,000 subjects. However, most of the initiatives are limited in scope, being aimed at a limited audience (<1000). The cost of the initiatives is less than 50,000 euros in 80% of cases, only 8% of the cost exceeded 100,000 euros. One of the main problems highlighted by the survey is the lack of an ex-post evaluation of the effectiveness of the initiative. More than half of the programs did not include any form of monitoring, which makes cost-benefit analysis difficult and complicates the identification of best practices. The collaboration between the schools and the Bank of Italy, which reached its tenth year of activity in 2017, is one of the most important educational initiatives. The agreement was born in 2007 with the signing of the Memorandum of Understanding "for the launch of an experimental training

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project in economic and financial matters in some sample schools". The collaboration aims to introduce financial education into the school curriculum through a modular training program aimed preferably at the intermediate classes of each school cycle: primary school, lower secondary school, upper secondary school. The subjects dealt with are money and alternative payment instruments to cash, price stability and the financial system.

The effectiveness of the project was then evaluated with tests administered to the students before and after the training cycle until the 2011/2012 academic year. The empirical evidence discussed in Romagnoli and Trifilidis (2013) shows how the program is able to improve financial knowledge and skills up to at least the following year<sup>37</sup>. However, the greatest criticality remains the lack of inclusion of financial education topics in the students' school curriculum, therefore the level of participation is limited only to the institutions concerned and the same contents are not homogeneous between schools, study cycles and territories.

As for adults, the survey conducted in 2015 reveals that financial education programs have almost always been designed for a generalist audience with few initiatives designed for the most vulnerable groups of the population or with specific training needs, such as women, the elderly or small businesses. For example, "Practical Guides" have been created on bank accounts, mortgages and consumer credit and a leaflet for the general public that provides information on individual protection tools.

The collaboration on customer protection issues with the associations represented in the National Council of Consumers and Users was useful, which makes it possible to reach a wide audience thanks to their capillarity and direct contact with users. The topics most frequently covered are budget management, the risk-return ratio, savings and supplementary pensions<sup>38</sup>.

Between 2012 and 2014, around half of the financial education initiatives were organized by private actors, in particular banks, insurance companies and pension funds. The initiatives are aimed at both students and the adult public<sup>39</sup>.

Finally, CONSOB has created a portal, accessible from its website, which offers an overview of finance and markets, an investment guide, a section dedicated to basic financial concepts, and sections dedicated to scams, illegal practices and forms of protection. The guide emphasizes the importance of financial planning, the rules to follow and the behaviors to avoid along the path leading to the investment.

<sup>&</sup>lt;sup>37</sup> Romagnoli A. Triflidis M. "Does fnancial educaton at school work? Evidence from Italy", Questoni di Economia e Finanza (Occasional Papers) Banca d'Italia, n. 155, apr. 2013

<sup>&</sup>lt;sup>38</sup> Cfr. "Educazione finanziaria in Ialia: a che punto siamo?", Osservatorio Monetario 2/2019, Associazione per lo sviluppo degli studi di Banca e Borsa

<sup>&</sup>lt;sup>39</sup> Cfr. "Quanta e quale educazione finanziaria per l'Italia? Un'analisi comportamentale", Fabrizio Ghisellini, Minerva Bancaria, 2018

The investment guide also mentions the possibility of using, among the various investment services, financial advice, a tool that in many national strategies plays an important role in reducing conflicts of interest and improving the efficiency of allocations.

## What is financial advisory?

When you want to define a profession or a service regulated by legislative norms, you should start from the normative datum. The Consolidated Financial Act (Legislative Decree 58 of 1998) provides that *"investment advice" means the provision of personalized recommendations to a client, at his request or on the initiative of the service provider, regarding one or multiple transactions relating to financial instruments.* 

A definition that certainly does not help us to understand what financial advisory "is" today and that appears somewhat reductive. It represents the advisory service as a large "shelf" with a multiplicity of "products" to be purchased where the professional advises the saver/customer the product to buy. This representation, in our opinion, is anchored to an anachronistic financial planning service, stuck in the years of financial promotion, without taking into account the market, technological and economic innovation of the last decades which has meant that in the world of savings the needs of families who request a service have changed.

The perception of financial advice is closely linked to the concept of financial education; the more informed I am, the more I am able to evaluate the service offered and, consequently, better I can evaluate the investment options that are proposed to me. That this paradigm corresponds to the truth and demonstrated by the fact that still too few in Italy rely on consultants to make decisions on the matter. In the graph below it is clear that only 28% of savers make use of an expert<sup>40</sup>. Furthermore, it is not better specified what is meant by the term "expert", as often being an expert in a subject could be excessively broad as a concept (bank employee, insurer, trader, etc.). The reason why it is important to make this clarification is in the fact that only registered financial advisors are the real "experts" in providing advice. Not because they are the most prepared in the financial sector, but because their job consists in finding the investment strategies most suitable for the customer.

<sup>&</sup>lt;sup>40</sup> Cfr "perché c'è bisogno di uno sportello del risparmiatore?", Federconsumatori Reggio Emilia, October 2017, <u>https://federconsumatoriutentireggioemilia.wordpress.com/2017/01/27/perche-ce-bisogno-di-uno-sportello-del-risparmiatore/</u>



#### HOW DO SAVERS DECIDE?

This is the vision of financial advice that savers today in the asset management industry have; Potential clients expect that a good financial advisor gets them, in the end, more money than another financial advisor.

### Financial advice as a "process"

Let's go back to the legal definition of financial advisory that focuses on the consultant's output, i.e. personalized recommendations to buy, sell or hold financial instruments.

The impression that is drawn from the regulatory framework is that financial advisory should focus on performance in consideration of the customer's risk profile. However, this is not the only aspect in which the consultant focuses when outlining an investment strategy. For many years the client was acquired by the financial industry by promising him, explicitly or implicitly, that investing with him rather than with others would bring him greater returns. The reason why the consultants focused almost exclusively on performance was given by the fact that, a financially inexperienced person is not able to evaluate all the elements (volatility, VaR ...) that come into play when a person decides to invest. The only most familiar element was performance, and consequently the choice of the consultant was mainly based on the income that he promised to receive.

The "consultant" appeared the "expert" who, in some way, must demonstrate that his recommendations meet the expectations that he has generated to acquire the client. The problem with this approach is that it is based on the deception of an expert can know what the investments are "good" for the near future. The reality is that there is no "right" combination of

financial instruments. There is also no right combination for a given "risk profile". And, if we want, there is not even a single way to determine a "risk profile".

The "real" risk profile is perceived only after in-depth knowledge with the customer which is realized only after time and is not always sufficient. Therefore, it is impossible for a consultant to manage without knowing the client at all to outline an efficient and effective investment strategy for him.

Making financial choices means making "choices in conditions of uncertainty". The most important thing (and it is already a lot) that a financial advisor can do, if he is honest first with himself and then with his client, is to offer a correct investment process, not to promise returns totally out of his control, but focusing attention on the actual needs of the customer, whether expressed or not. Once the needs have been identified, it is possible to understand the real expectations on the returns and risks of the financial markets, as summarized in the chart below.



Pic. 10: Consultant, Saver and Portfolio relationship

(personal elaboration)

At this point it is essential to determine what is the "asset allocation", the subdivision of assets into classes of financial assets (diversification of investments), based on needs, time horizon and risk profile<sup>41</sup>. The construction of the asset allocation is fundamental, because it is this that will determine the return of the investor's portfolio.

In terms of portfolio composition and management, there are two macro categories of asset allocation. the "strategic" one, characterized by a passive profile, and the "tactical" one, which is characterized by an active profile. The first attempts to replicate a benchmark. The subjects who

<sup>&</sup>lt;sup>41</sup> Cfr "What is Asset Allocation?", E. Napoletano, ForbesAdvisor, August 2020, <u>https://www.forbes.com/advisor/investing/what-is-asset-allocation/</u>

adopt this type of allocation start from a portfolio that is similar to an index (whether by sector or geographic area) and then modify it making it compliant with their level of risk. The second strategy, the "tactical" one, on the contrary, tries to "beat the market" on the risk-return front. The subjects who adopt this policy are, therefore, looking for an extra-return compared to the market. To do this, two main strategies are used: "market timing", i.e. the modification of the weights of various assets held in the portfolio in anticipation of possible positive/negative trends of the assets; and "stock picking", the analysis on financial statement fundamentals of a listed company with the aim of understanding whether the stock under analysis is undervalued or overvalued by the market<sup>42</sup>.

The choice of one strategy rather than another is mainly based on two elements: the investor's technical knowledge and time horizon. While in the first strategy no particular knowledge of finance is required, in the second, in-depth skills in the financial sector are required in order to perform an efficient market analysis.

As for the investment time horizon, to implement a "strategic" allocation, a long-term time horizon, on average 5 years, is essential to be satisfied with your investment. This is because investment costs play a fundamental role. Take for example an investor who buys a passive fund that replicates a market segment. In order to access the fund he will have to pay an "entry fee", on average 3%; during the investment period he will have to bear the "management fees", ranging between 0-2% per annum, and finally at the time of the sale he will have to pay "exit costs", which generally have a decreasing trend over time. Seeing all these costs, it is impossible to approach a "strategic" asset allocation with an investment horizon lower than one year, unless you intend to lose money. As for the second strategy, however, things are reversed. Since this strategy tries to beat the market by taking advantage of the market inefficiencies that are formed (over/undervaluation of a stock), the time horizon of these investments is necessarily short.

Considering these two types of strategies, how does an investor choose which one to undertake? There is obviously no single answer to this question. It depends, as mentioned above, on various factors, but it can certainly be useful to contact an expert in the sector, the financial advisor.

One aspect of consultant's job is to inform the client about what he can expect by applying certain strategies instead of others. By doing this, the consultant is constructively contributing to the client's financial alphabetization process.

It is taken for granted that the vision of financial advisory as consultancy as a process, intended as a service that accompanies the potential investor from the creation of a hypothetical investment

<sup>&</sup>lt;sup>42</sup> Cfr "L'asset allocation strategica e tattica. Caratteristiche a confronto" Roberto Bramato, blog.moneyfarm, luglio 2015. <u>https://blog.moneyfarm.com/it/finanza-personale/lasset-allocation/</u>

strategy to its realization, is the "real" consultancy and is to be preferred over product advisory, i.e. the presentation and sale of a certain financial product rather than another.

Process consulting tends to "scare" the investor-client. It is not something that is "sold" easily, it does not offer marketing ideas. While, it is necessary to start from an irrefutable fact, financial choices are in conditions of uncertainty and for this reason a consultancy "process" requires time, method and patience. Therefore, if there is no mental predisposition to accept a service of this kind, the shortest way for both the saver and the consultant is the sale/purchase of the "yield".

## A little background on counseling and consultants

But if advice is important for proper financial planning and to improve "the education of savers" who are today's financial advisors? Or better, "who" should be the financial advisor? It should be emphasized that the term consultant is understood in a broad sense, i.e. including both consultants in the strict sense, i.e. all those who are registered in the single national register according to Community and national legislation, and subjects who provide consultancy but not registered in the register , mainly employees of banking institutions. Wanting to represent the historical development of financial advice we could represent it as in the graph below<sup>43</sup>.



### Pic. 11: Consultant Evolution

<sup>&</sup>lt;sup>43</sup> Cfr. "L'evoluzione della consulenza finanziaria in Italia: i 4 archetipi di consulente", Alessandro Pedone, January 2019, <u>http://www.tekta.it/levoluzione-della-consulenza-finanziaria-in-italia-i-4-archetipi-di-consulente/</u>

Source: personal elaboration from <u>http://www.tekta.it/levoluzione-della-consulenza-finanziaria-in-</u> <u>italia-i-4-archetipi-di-consulente/</u>

The embryonic Consultant (seller) has been present from the mid-1980s to the end of the 1990s. It was born together with mutual funds under Italian law (law 23 March 1983, n.77) and was created for the sale of these new financial products (fund shares) that have appeared on the Italian market and which have given rise to a real revolution in the Italian financial market, representing a valid alternative to government bonds and shares (which, moreover, were listed on a small and inefficient stock exchange).

We have represented this figure with the term "seller" and the main feature consisted of strong relational skills necessary for the sale of the "mutual investment fund" product. The training provided by investment firms (banks, SIMs, etc.) was exclusively focused on the so-called "sales techniques", considered to prevail over technical and consulting knowledge. The seller had very few products available, often a single mutual fund management house and with few sectors, which gradually increased (after the mid-nineties) following a process of market globalization but above all following a growing technological development that has made it easier to build, distribute and trade new financial instruments.

The relationship with the saver is all focused on the aspect of performance. The primary objective (if not exclusive) is to achieve better returns than government bonds in a period that the latter made it possible to achieve particularly interesting returns. The saver's risk profile is not codified, therefore there is no obligation for the "seller" to take it into account.

The birth of new products and the crisis of the new economy of the 2000s, however, showed the limits of this "seller" and the need to create a new figure, with a greater knowledge of the market and a more oriented to the capital protection. The figure that emerged is what I call "promoter", where the reference to the figure of the financial services promoter is clear as codified by law no. 1 of 1991, which even if it was given about ten years earlier than the reference period, in reality it affirmed itself in a tangible way during the 2000s.

### Pic. 13: Consultant Evolution



Source: personal elaboration from <u>http://www.tekta.it/levoluzione-della-consulenza-finanziaria-in-italia-i-4-archetipi-di-consulente/</u>

In the light of the experience of the 2001-2003 economic and financial crisis, the promoter refines his technical skills regarding the knowledge of financial instruments and portfolio strategies, even if the "product sale" still plays an important role.

In this period, what will be defined as "financial engineering" by the asset management industry is affirmed, that is, increasingly complex products that aim to offer interesting returns against risk control, as the remaining saver burned by the losses suffered by the crisis just ended, he significantly reduced his risk appetite.

It should also be noted that, starting from 2000, there has been a significant reduction in the yields of government bonds, how we can see in table 5 below, which shows that even net yields (net of the inflation rate) are negative if we consider also negotiation costs and taxes (green color)

period	BOT yield 12 months	inflation rate	real BOT yield
1996	9,68%	2,86%	6,829
1997	6,50%	1,90%	4,60%
1998	5,09%	1,68%	3,419
1999	3,10%	2,11%	0,99%
2000	3,89%	2,70%	1,199
2001	4,47%	2,37%	2,109
2002	3,38%	2,83%	0,55%
2003	2,41%	2,50%	-0,09%
2004	2,06%	2,03%	0,039
2005	2,21%	1,99%	0,229
2006	2,71%	1,87%	0,849
2007	3,88%	2,61%	1,279
2008	3,95%	2,24%	1,719
2009	1,84%	1,02%	0,829
2010	0,96%	1,88%	-0,92%
2011	2,33%	3,29%	-0,96%
2012	1,61%	2,31%	-0,70%
2013	0,68%	0,66%	0,029

Tab 5: BOT yields 1996-2013

Elaboration from: <u>https://www.cloudfinance.it/serie-storica-tassi-bot.html</u> (for BOT yield); <u>https://www.inflation.eu/it/tassi-di-inflazione/italia/inflazione-storica/cpi-inflazione-italia.aspx</u> (for inflation rate)

The saver is therefore looking for a valid alternative to the government bond. Doing this, investors inevitably agreed to bear more risk in exchange for higher expected returns. Therefore, financial products such as structured bonds and index-linked life policies are spreading, with underlying equity indices or in any case risky assets that offer a guarantee of capital at maturity. The problem was that these types of products, as a result of fierce competition in the asset management industry, became more and more complex, and without adequate financial education this leading to an information asymmetry; whoever sells the product has very in-depth knowledge of it, whoever buys it does not know how it works.

The "promoter" enters in a crisis with the *subprime* mortgage *crisis* and the bankruptcy of *Lehman Brothers*. The consultancy model, still not anchored to the actual needs of the client, is once again a victim of the markets and, this time, also of the financial products which, in theory, should have saved savings from the fall of equity indices. An example was the *index-linked* policies, which in some cases had *Lehaman* as guarantor of the *investment* and which, despite having protected the saver from the decline in stock exchanges, did not protect him from the issuer's default. The natural evolution of the "promoter" was what I call the "allocator", as shown in the graph, and which corresponds to what the financial advisor is today.

### Pic. 13: Consultant Evolution



Source: personal elaboration from <u>http://www.tekta.it/levoluzione-della-consulenza-finanziaria-in-italia-i-4-archetipi-di-consulente/</u>

The allocator, together with the knowledge of the products, develops an in-depth knowledge about financial planning, with the aim of responding to the needs of the customer, in particular with regard to the risk-return profile, which among other things responds to a specific regulatory obligation to following the entry into force of the Mifid 1 directive (implemented in Italy in 2007). The training of consultants also extends to other horizons, even if focused on the construction of portfolios, also benefited by the fact that the networks of consultants can work in an open structure. The new regulation allows the consultant to place not only the "home products" built by the company for which they mandated, but also products, tools and services of other investment houses, thus having an almost infinite range of allocative solutions.

However, the evolution of consultancy from "product sale" to "service sale" has highlighted the limitations of the "old-fashioned" consultant, not adequately trained to meet the new market needs and anchored to the offer of "yield" for the customer-saver.

All this has led to a substantial decrease over the last few years in the number of consultants practicing the profession with the consequence, in the absence of new recruits due to the lack of attractiveness of the profession, the increase in the average age of consultants (today over 50 years).

## Financial consulting now and possible evolutions

Once you have made a brief excursus on the events of consulting in Italy, it appears useful to understand what the next evolution of the sector will be and specifically what will be the future prospects for the saver and the related protections. In fact, it is necessary to highlight that the Italian family is one of the most capitalized among the advanced countries, with average assets of approximately 350 thousand euros.

Market changes, new needs of savers, technological innovation and Community law. These are all causes of a new revolution in the world of consulting that is changing the asset management sector in Italy<sup>44</sup>.

The financial markets, due to an increasingly marked globalization and a technological innovation that facilitates financial transactions, are increasingly uncertain. Increase, therefore, the attention on the needs of the investor, for a plan that takes into account in a timely manner the time horizon of each requirement; this is the only way to face the markets. Therefore, it is evident that the search for performance takes a back seat, not that it is not important, but the first step is to externalize all the needs, even the most hidden ones. A job done in conjunction with the actual risk profile of the saver, an aspect that in the past has been underestimated and managed superficially by everyone. It may look like in appearance a more psychological analysis than economic. For these reasons it has become increasingly important to the discipline of "behavioral finance", which is based on scientific research in the field of cognitive psychology. Important for the understanding of consumer decisions and how these are reflected in market prices and resource allocation.

This requires a multidisciplinary basic competence for the consultant. Consider, for example, the saver who has to deal with succession planning, in order to avoid disputes between the heirs. He has a series of tools available; the trust, the patrimonial fund, the life insurance policies, the testament, the donation, the family pact if you are an entrepreneur. The consultant cannot fail to have those skills, even of a legal nature, to help the investor in the solution that best suits his needs. Of course, the consultant cannot give the solution without the help, in turn, of other professionals such as the lawyer, the tax advisor or the notary.

If this is true, the saver's need will be able to find a solution through teamwork, a *team* in which everyone makes their skills available in order to find the answers to provide to the saver.

<sup>44</sup> Cfr. https://www.alfaconsulenza.it/servizi/vivere-di-

rendita/#:~:text=Eppure%20i%20numeri%20ci%20dicono,fra%20ricchezza%20finanziaria%20e%20immobiliare.

### Pic. 14: Consultant Evolution



Source: personal elaboration from <u>http://www.tekta.it/levoluzione-della-consulenza-finanziaria-in-italia-i-4-archetipi-di-consulente/</u>

Today the consultant can no longer be the professional who allocates the saver's economic resources in a model portfolios, also because – reminding the technological innovation- today the so-called robot-advisors are able to build model portfolios taking into account a series of data of the saver.

A very widespread phenomenon in Anglo-Saxon countries which led to a reduction in the number of consultants. In the UK alone, from 2009 to today, consultants have gone from 50,000 to 30,000<sup>45</sup>. Furthermore, giants like Google and Amazon have already expressed their intention to enter into financial consulting area through investments in the artificial intelligence sector that will allow them to analyze a large amount of customer data and on the basis of these create customized portfolios<sup>46</sup>.

<sup>&</sup>lt;sup>45</sup> Cfr. MIFID 2, l'esperienza della Gran Bretagna: più professionalità, meno professionisti", Alessandro Plu, Wall Street Italia, Feb 2018, <u>https://www.wallstreetitalia.com/mifid2-lesperienza-della-gran-bretagna-piu-professionalita-menoprofessionisti/</u>

<sup>&</sup>lt;sup>46</sup> Cfr: "Google: The Next Big Fintech Vendor", Ron Shevlin, Forbes, May 2020, https://www.forbes.com/sites/ronshevlin/2020/05/11/google-the-next-big-fintech-vendor/?sh=629f706d4cbd

However, this will only be part of the advisory, the most important game will be played on the personalized relationship with the saver. The latter only if in the meantime he has acquired those basic notions of financial education and will be able to adequately assess the service offered and the coverage of economic needs that often remain in the unconscious of each of us and only a consultant with proven experience and training will be able to advise and guide the saver. In other words, the market will see two subjects prevail; the robot advisor who builds portfolios based on the information provided by the saver and the financial advisor who provides highly personalized advice. According to a 2016 Consob survey, the higher the personalization of the service, the more the consumer will be willing to pay for it. It is not easy to predict the future, much less in a sector where technological development plays an important game and we do not know where artificial intelligence will reach.

However, one can reasonably imagine the advisor robot could be useful to the advisor to build efficient investment portfolios and, at the same time, keep risk under control. Finally, I would remind that today we are no longer in the economic period of growth and is essential to start again from consumer's needs. We all need financial planning implemented with patience and professionalism, which places all the saver's needs at the center of all. To achieve this goal, laws that protect the saver are not enough, even the best of laws without adequate financial education fails all objectives. In the future, there will be a different business model of banks and people will need to have a greater awareness of money, so financial education plays a primary role to get there.

Therefore, for all of this to happen, an effort by everyone is required. First of all, the State, which understands that investing in financial education means investing in the future of society. Secondly, by the financial industry with services that are truly customer-centric and free from conflicts of interest, it effectively provides advice by exiting the sale of the "home- built" financial product. Thirdly, by the investor who has the curiosity to deepen knowledge on the subject in order to improve his own economic but also psychological well-being. We are all aware that doing financial planning requires commitment and patience, but today, after the end of the welfare state, it becomes more and more important.

# **Final analysis**

In the following chapter I will focus on the final part of this work, the data analysis. Through that I will try to figure out if the financial alphabetization process and the evolution of the financial advisory are going in the "right direction". The objective of this analysis is not so much to understand if a saver, by undertaking an investment strategy supervised by a financial advisor is able to make profits higher than market trends, but rather if, through the financial skills learned and the consultation of the financial advisor, is able to protect his assets in the face of unexpected market shocks. To understand this, I will compare portfolios of investors who had financial positions during the financial crisis that began in 2007 and those of investors who currently hold investment portfolios, and who have been overwhelmed by the financial shock caused by the COVID-19 pandemic.

The chapter consists of three parts. The first part will show the methodology with which the data were collected and processed. In the second part I will focus on analyzing these data. First of all, there is an analysis of two reference indices: "Fideuram Equity Funds" Index, the benchmark for the equity sector; "Fideuram Bond Funds" Index, the world bond index. We will see how the trends of these two indices were during the past financial crisis and the current crisis. This will bring out the differences of the two crises analyzed in this paper. This market analysis will give us the opportunity to weigh the results obtained from the portfolio analysis.

I will then move on to the analysis of the portfolios of various private investors. This has been divided into three parts. In the first, a comparison was made between the structure of the portfolios held by investors between 2007 and 2010 and the portfolios held by investors during the pandemic crisis. By doing this we would be able to understand whether the level of diversification of portfolios has increased or not over the years. In the second part I then concentrated on the analysis of the trends of the portfolios held during the COVID period. It was not possible to analyze the portfolios held between 2007-2010 due to the impossibility of obtaining the data necessary for the analysis. Finally, the results of the first and second part of the analysis will be combined and to conduct a comparison between the trends of the financial market in general and the portfolios analyzed.

Once the analysis is completed, I will draw the conclusions by answering the question initially asked.

# Methodology

In order to conduct the research and understand how and to what extent the level of investor literacy has increased over the years, 50 portfolios of private investors were examined during the period of crisis due to COVID-19 and compared with those that they were the portfolios of private investors during the 2007-2008 financial crisis. By observing the various behaviors held by savers in these two moments of crisis, it will be possible to understand whether the literacy process undertaken in Italy is successful or not.

The research begins with the collection of the various portfolios; provided by various financial advisors operating within one of the largest European banks. The reference period considered for these portfolios starts on 19<sup>th</sup> February 2020, the date on which the world markets recorded the peak followed by the fall due to the effect of the pandemic, and finish on 30<sup>th</sup> August 2020 the symbolic date of the end of the first pandemic wave<sup>47</sup>. While regarding portfolios during the financial crisis that began in 2007, a period of about three years was considered, 2007-2010, an adequate period to be able to identify all the elements we are analyzing.

Unfortunately, it was not possible to find the complete financial position of the portfolios dating back to 2007. This is because at that time the modern recording programs for the movements linked to a specific portfolio were not yet available. Or they weren't available to consultants anyway. Furthermore, the law provides that all financial institutions are required to keep on file data relating to customer portfolios for 10 years (Article 119 paragraph 4 of the Consolidated Law on Banking and Article 2220 of the Civil Code). Many of these data are therefore been permanently canceled by the institutions.

Therefore, the analysis on the structure was carried out by a personal reconstruction of the portfolios through the retrieval of old documents containing the purchase and sale copies of the products held in the portfolio by customers during the financial crisis.

It is also important to make a further clarification, during these years as mentioned above some products, which we will analyze later, have changed and others have been definitively eliminated. It is therefore difficult to make a precise comparison between the portfolios of 2007 and the current ones.

<sup>&</sup>lt;sup>47</sup> Cfr. "Covid-19: prima e seconda ondata a confronto", Roberto Battiston, ScienzalnRete, Ottobre 2020, <u>https://www.scienzainrete.it/articolo/covid-19-prima-e-seconda-ondata-confronto/roberto-battiston/2020-10-20</u>

Regarding the portfolios relating to the crisis originated by COVID-19, after data collection, which took place in respect of privacy, the re-processing was carried out.

Data re-elaboration was performed using the "eXact Suite<sup>48</sup>", a platform that allows the analysis and comparison of selected instruments within a vast database of funds, ETFs and listed shares. To begin with, the portfolios were recorded within the platform in order to have the trends in the periods under analysis. To do this, it was enough to enter the fund's ISIN in the definition section, the date of purchase and the number of units purchased, as you can see in the image below.

Fig.15: Extract from the data entry menu

Codice Titolo		Data	Valuta	Operazione	Quantità	Prezzo	Tipo Valore	Cambio	Divisa	Rateo L.
100052308	1	12/06/2020	16/06/2020	Acquisto 🗸	168,188	121,55	Nav 🗸	1	EUR 🗸	0
Nordea 1, SICAV Emerging Stars Equity Fund BP-EUR oppure importo				20443,25			Modifica			

The final result is a prospectus created by the software that allows us to have a general picture of the performance and volatility of the portfolio in the reference period.

### Fig. 16: Final prospectus



Thanks to this prospectus it was possible to obtain the volatility of the portfolio and the performance for the period. That prospectus was created twice for all portfolios, one with reference date on 19<sup>th</sup> February 2020 and another one on 30<sup>th</sup> August 2020.

<sup>48</sup> http://www.analysis.it/exact-suite/

Then, again using the "eXact suite", the various max drawdowns of the portfolios were calculated. To do this, it was first necessary to calculate the various percentages of the funds that make up the portfolios and then record everything within the program, obtaining the data under analysis for each portfolio.

Finished with the reworking part within the software, and all the necessary prospectuses elaborated, together with the financial positions of the savers provided by the consultants, I was in possession of all the necessary data, it was time to order everything. For each portfolio the following was recorded:

- The total (in euros) on 19<sup>th</sup> February 2020 and 30<sup>th</sup> August 2020., obtained from the "official financial position" documents provided by the consultants;
- The performance on 19<sup>th</sup> February 2020 and 30<sup>th</sup> August 2020.;
- The volatility of the portfolios at the two reference dates;
- The variation between the two volatilities, calculated with the formula  $\frac{(vol_2 vol_1)}{vol_1}$ , where vol\_1 is the volatility of the portfolio on 19<sup>th</sup> February 2020 and vol\_2 is the volatility of the same portfolio on 30<sup>th</sup> August 2020.;
- The Max Draw-Down and the date in which was recorded;

The following image shows an extract of the table (present in full form in the appendix, Table 1) which was composed by entering all the data listed above.

Tab 6: data table extract

porfolio	tot 19/02/2020	tot 30/08/2020	performace 19/02/2020	performance 30/08/2020	volatility (19/02/2020)	volatility (30/08/2020)	volatility change	max draw-down	date MaxDD
1	124392,93	118505,11	6,81%	-4,73%	3,31	8,32	151,36%	-18,90%	23/03/2020
2	858038,72	828564,92	6,47%	-3,44%	2,6	7,65	194,23%	-15,01%	23/03/2020
3	263689,5	232555,01	8,68%	-11,81%	6,52	13,24	103,07%	-19,04%	23/03/2020
4	272517,58	251639,67	0,19%	-7,66%	5,4	12,28	127,41%	-16,93%	23/03/2020
5	169502,05	162442,97	4,87%	-4,16%	1,64	5,19	216,46%	-11,94%	24/03/2020

The various portfolios were also divided according to their level of risk. Specifically, three risk categories were created (low, medium, high) in which the various portfolios were then grouped. This operation will allow us to understand which segment of investors was most affected during the most recent crisis.

For the final part of the analysis, concerning the comparison between the portfolios and the market during 2020, specific benchmarks were created to be able to compare the data obtained from the processing on the portfolios.

Specifically, the benchmarks were calculated starting from the structure of the portfolios. It has been calculated from table 4 in appendix the average amount of capital invested in the three asset under management components (fixed income, equity, flexible) for each level of risk and subsequently the values were converted into percentages, as shown in the table below.

	Fixed-income fund	Equity fund	flexible fund
Low-risk	52172,63	3303,55	6451,82
Medium-risk	63223,25	26632,83	44886,30
High-risk	65537,92	48862,44	23404,30
Low-risk	84,25%	5,33%	10,42%
Medium-risk	46,92%	19,77%	33,31%
High-risk	47,56%	35,46%	16,98%

Tab 6: Asset under management composition

From these data it was then possible to derive the reference benchmarks for each level of risk, inserting the weights of the various categories and the Fideuram indices of the reference market as components of the portfolio in the "exact" program. The generated prospectuses allowed the comparison between the investors' portfolios and the market.

## Market analysis

Before going into the specific analysis regarding the portfolios of various private investors during the current pandemic and financial crisis of 2007, I believe it is important to first analyze the differences between the effects that these two events have had on the financial market in general.

My work started by analyzing the price trends of the Fideuram index during the two events considered in this paper. I start by presenting two graphs that show the trends of the indices during the two crises. The first shows the period between 1<sup>st</sup> January 2007 and 31<sup>st</sup> December 2010, while the second shows the trend in the period between 19<sup>th</sup> February 2020and 30<sup>th</sup> August 2020.



Fig 18: Fideuram indices (19th February 2020- 30th August 2020)



The thing that immediately catches the eye, in addition to the different trends of the graphs (which will be analyzed later), is the different amplitude of the two periods under analysis. It was not a random choice, in fact, the two amplitudes correspond to the duration of the effects that the two crises have produced on the financial market.

In the first case, since the crisis that began in 2007 lasted for years and undermined investor confidence in the financial market, the negative effects continued for years. If we want to try to calculate the "Max Draw-down" of the indices, which as mentioned in the introduction corresponds to the maximum fall of a portfolio or a security in a given period, in this case between 2007 and 2010, we should take their maximum and minimum points in the reference period. In the case of the bond index, the calculation of this indicator is irrelevant, since the bond sector was not involved
during that crisis. In fact, the analyzes show that the max draw-down of the Fideuram index of bond funds was approximately 2%.

We cannot say the same for the equity sector, which on the contrary recorded a huge collapse. The peak was recorded on 13<sup>th</sup> July 2007, just before the real estate bubble burst. From that starts a steady descent, which lasted until 09<sup>th</sup> March 2009, causing to the index a drop by 51.73%.

In the case of the crisis caused by COVID-19, being a health and non-financial crisis, the financial shock lasted much shorter than the other crisis. In fact, looking for the data that we need to calculate the Max Draw-down, we will see that for both indices the two reference points (maximum and minimum) are just over a month apart.

These data alone suggest that the confidence that investors have and had in the market is different between the two crises. In the financial one of 2007, given the long period of negative trend of the stock index, it makes us understand that trust in the market and in the subjects that operated in it had failed, as amply explained in the second chapter.

During the current crisis linked to the pandemic, on the contrary, this attitude does not seem to be confirmed, because, it is true that the indices recorded a sharp decline, which was less than that of 2007 (see below), between the end of February 2020 and the first half of March of the same year. But unlike the first crisis, which took a long time before the index recovered from the collapse, in the second, in less than a year the indices had already absorbed the shock.

Below are the same two graphs presented above, but with the only difference that the refence time has been extended, precisely to include the date on which the indices had completely absorbed the collapse caused by the crisis.



Fig.20: Fideuram indices (19th February 2020-20th January 2021)



Referring to the first crisis, the stock index exceeded the maximum recorded on 13<sup>th</sup> July 2007 (date before the bursting of the housing bubble) only on 20<sup>th</sup> January 2015, almost eight years later. In the second case, however, in less than a year the indices had already exceeded the previous maximum. Specifically, the bond index marks the recovery on 08<sup>th</sup> January 2021 while the equity one will do so three days later, on 12<sup>th</sup> January 2021.

understood the reasons why the markets took different times to recover from the imbalances produced by the two crises, it is time to look at the effects that these two events have caused in the various markets.

Starting from the financial crisis that began in 2007, we see how only one of the two markets has suffered from the situation and the lack of confidence on the part of investors.

Looking at the graph, in fact, we notice that the bond market in the period between 2007 and 2010 was not affected by the crisis and maintained a growing trend for all the time frame analyzed. The same cannot be said for the stock market which on the contrary recorded a significant loss, which amounts to -51.73%.

The reason that triggered this phenomenon (collapse of the stock market) is linked to the fact that under normal conditions, to meet operational needs, banks and financial institutions borrow money from other banks (i.e. from the interbank market) and from financial markets. However, with a crisis of confidence in place, the mechanisms that should guarantee mutual coverage are jammed. To overcome the liquidity crisis, financial operators put part of their securities portfolio up for sale, pouring a large amount of shares into the financial markets. This led to a fall in the value of the shares and the consequent collapse of all the stock indices of the stock exchanges, which in turn generated new losses and new deteriorations in the balance sheets of the banks<sup>49</sup>.

During the current pandemic crisis, however, we are witnessing slightly different market behavior. Unlike the first crisis that involved only one market, this time everyone was involved, albeit with minor effects. As already mentioned above, the markets recorded a collapse between the end of February and the month of March. The bond market recorded a decline of 10.8% while the equity market of 33.33%, almost 20% less than what it recorded during the 2007 crisis. The reason for the collapse may be associated with the climate of uncertainty, present at that time, linked to the evolution of the pandemic. However, it can be said that the current crisis did not originate from the financial system, investors have not lost faith in the system, as in the previous crisis. The effects were therefore lighter and shorter.

# Data analysis Analysis of the portfolio evolution

The technological and regulatory evolution has led over the years to the creation and modification of some financial products. It is therefore normal to assume that, given this evolution, the structure and composition of a portfolio has also changed over time. We will therefore start with a comparison between the structure of some portfolios held by investors during the financial crisis of 2007 and that of the portfolios that have currently faced the crisis linked to the pandemic.

<sup>&</sup>lt;sup>49</sup> Cfr. La crisi finanziaria internazionale del 2007 | Politica Semplice

From the data in my possession I can say that a portfolio of a small investor with assets of less than half a million euro, in the period between 2007 and 2010 was mainly composed of three elements : assets under management, insurance policies, administered savings (corporate and governmental bonds, certificates and bank account).

The table below, created by averaging the values present in the tables 2, 3, and 4 in appendix, shows us the weights of an average portfolio in the periods under analysis.

Tab 7: Portfolios structure

Date	Asset Under Management	Insurance Policy	Savings Administered (bond)	Savings Administered (other)
2007-2010	63,58%	17,74%	14,48%	4,21%
19/02/2020	71,63%	16,30%	0,00%	12,08%
30/08/2020	70,65%	16,66%	0,00%	12,69%

Looking at the table we can say that, despite the reference periods are 10 years distant, the basic structure of the portfolios has not been particularly modified over time.

The main difference that exists between the portfolios of 2007 and the current ones is the lack of the bond component in the more recent portfolios. This finding is explained by the fact that currently yields bond are at historic lows, as we have seen in chapter 3, and it makes sense currently to not invest in this category of products and allocate the savings in other securities most profitable.

However, there is an important clarification to be made. Although the main portion of the portfolio was and is made up of "assets under management", i.e. funds of different nature, the analysis show that in the past decade there was a tendency to not diversify the investments. In fact, it was not unlikely to find portfolios where the capitals were invested in just two mutual funds. On the contrary, today portfolios are much more diversified, both by market and by geographical area.

To demonstrate this, two portfolios of similar amounts are shown here. One from 2010 and one from 2020. I specify that it is not the same portfolio on two different dates, but two portfolios belonging to two different investors.

Tab 8: Portfolio compositions

Fund	Quantity	Price	Value	% on total value
Eurolux Qbond absolute return	6444,151	10,94	70499,01	58%
Carmignac Court Terme	13,619	3697,54	50356,80	42%
	date 31/12/2010		120.855,81	
Fund	Quantity	Price	Value	% on total value
DBAM PIM EU COU BO EUR PFDQ DT	192,435	100,92	19420,54	17,86%
F GLOBAL MULTI-AS INC EUR A DT	2.948,31	7,97	23498,00	21,61%
F GLO MULTI-ASSET INC EUR G DT	1.228,48	7,63	9373,26	8,62%
IF GL TARGETED RETURN EUR B AC	762,44	9,365	7140,25	6,57%
IF GLOB TOT RET BOND EUR B AC	780,16	10,587	8259,55	7,60%
MS EURO HIGH YIELD BO EUR B AC	489,343	20,09	9830,90	9,04%
MS EURO STRATEGIC BD EUR B AC	421,004	40,1	16882,26	15,53%
MS GLOBAL FIX INC	497,593	28,76	14310,77	13,16%
	date 30/08/2020		108.715,54	

This evolution can be justified by considering two elements: financial education and the evolution of the figure of the financial advisor. In fact, a better financial education of the investor might allow the subject to realize the risks to which he goes against by not diversifying his investments adequately. This "awareness", combined with the new figure of the financial consultant, which has undergone an important evolutionary process in recent years, passing from a figure whose only goal was to sell the products of his company to a figure whose final purpose is the protection of the saver, may have improved the asset allocation process that the investor undertakes when he decides to enter the financial world.

The products that make up the "insurance policies" section are also different in the two periods analyzed. In the older portfolios we find a large number of "index linked policies", no longer present in current portfolios, in which the most common policy to find is of the "multi-class" type.

The reason for this change is connected to the evolution of the regulatory context and in particular with the entry into force of the MIFID I directive. As mentioned in the first chapter, with the entry into force of the directives, the potential investor is required to complete a questionnaire in which he specifies, in addition to the degree of risk that he intends to bear in his investments, also the products he is familiar with. If the knowledge of a certain product is not within the knowledge of the investor, the product cannot be purchased. This caused the sale of index- linked policies to collapse. The reason is very simple, these life policies fall into the category of "insurance investment policies" whose benefits are linked to an equity index. Products of this type present the typical risks of other investment products. There is therefore no certainty of a guaranteed return

neither, in many cases, the guarantee of the return of the invested capital<sup>50</sup>. Given the complexity of the product, which requires in-depth knowledge of the financial market, and the lack of general knowledge in the financial sector among private investors, the two MIFID directives, which are intended to protect investors' assets, have limited the sale of this kind of policies. For this reason, the most recent portfolios do not include this type of product but rather "multi-class" policies. These allow the customer to divide the investment into two components: the component invested in separate management and the component invested in investment funds; or, more specifically, a traditional life policy (class I), where typically the capital is guaranteed, and a "unit linked" policy (class III), i.e. an investment product whose performance is influenced by movements in the financial markets and on which there is generally no financial guarantee<sup>51</sup>.

Finally, by focusing on the changes that portfolios have had over time, and focusing on the latest crisis, we note an interesting data. The analysis carried out showed that during the first wave of the pandemic (19/02/2020 - 30/08/2020), on average, the financial allocation of investments did not change. On average, there was a decrease of around 2% in the bond portion and an equal increase in the equity portion. This data is very important because it makes us understand that the level of financial literacy on average has increased among the investors compared to the previous crisis. We can understand this from the fact that there was no liquidation of the investments and no fear arose after the financial collapse of March 2020. In this situation, the investor was able, thanks to his knowledge, to understand that the cause of market collapse did not originate from internal problems in the world of finance but rather from the virus that was advancing.

# Comparison between portfolios with different degrees of risk

Having concluded the part relating to the structure, we are going to analyze the behavior of the portfolios held in time of COVID-19. The table below shows the average values for each category of portfolios and the general average.

	tot 19/02/2020	tot 30/08/2020	performace 19/02/2020	performance 30/08/2020	volatility (19/02/2020)	volatility (30/08/2020)	volatility change	max drawdown
low-risk	81221,05	78957,96	4,98%	-4,68%	2,32	6,01	178,73%	-13,10%
medium-risk	178598,35	166528,83	7,75%	-6,28%	3,76	9,36	173,48%	-17,75%
high-risk	224409,16	213274,43	10,19%	-5,10%	5,89	13,15	141,58%	-20,65%
average	169992,99	162205,48	7,38%	-4,93%	3,78	9,04	166,77%	-16,74%

Tab 9: Average values (table created from table 1 in appendix)

<sup>&</sup>lt;sup>50</sup> Cfr. <u>http://www.quellocheconta.gov.it/it/strumenti/assicurativi/polizze-linked</u>

<sup>&</sup>lt;sup>51</sup> Cfr. http://www.quellocheconta.gov.it/it/strumenti/assicurativi/prodotti-multiramo

First of all, it should be noted that there is a direct relationship between the risk level of a portfolio and the total amount of the same, the larger the portfolio and the higher the risk level. This could indicate in my opinion that investors with the most capital have a higher level of financial knowledge than the average. They have therefore been able to manage their capital more efficiently and effectively respect the investors with low financial knowledge, thus generating greater revenues, leading to higher than average capital.

The third column of the table, which reports the performance prior the first coronavirus wave, seems to confirm the theory hypothesized above. In fact, we see that investors with the highest level of risk reported annual performances of 10.19% in the 5 years preceding the crisis. The low risk portfolios performed significantly lower.

Obviously, lower returns were expected at lower risk levels, but it must be taken into account that when you increase the risk in addition to a potential increase in earnings, there is the risk of running into equally large losses. It is therefore necessary to have a good level of knowledge of the financial world to be able to profit from this increase in risk.

The interesting thing, then, is the performance that the portfolios reported during the crisis (column 4 tab 9). Although all portfolios reported losses in the period considered, this time the risk/return relationship is not confirmed. The portfolios that have lost the most as a percentage are those at medium risk, with an average loss of 6.28%. This data tells us that medium risk portfolios probably had suboptimal asset allocation.



Fig. 21: regression graphs

This hypothesis is also confirmed by the regression between the performance and the level of risk of the various portfolios. The image above shows the two regressions conducted on the same portfolios in different time periods, before 19<sup>th</sup> February 2020 and after.

Looking at the first regression, we see how the portfolios respect the positive relationship between risk/return. In fact, we can see how the real values all lie around the line that expresses the linear regression equation, with an average residual value equal of 0.093, and a multiple R value equal to 0.71. From this last value emerges that in the case of the first regression the relationship between the two variables is positive and with a strong relationship. The hypothesized relationship is also confirmed by looking at the  $R^2$  value, the coefficient of determination, which in this case is equal to 0.50.

However, the same positive risk/return relationship is not confirmed in the second regression, which presents the values recorded between  $19^{th}$  February 2020 and  $30^{th}$  August 2020. Looking to the two coefficients used above, R multiple and R<sup>2</sup>, which in this case amount to 0.034 and 0.0012 respectively, we see how in this case there is no relationship between the two variables.

Furthermore, we note that there is a greater dispersion (residual average = 0.14) of the values respect the line mentioned above. In particular, there is a grater dispersion between portfolios with a level of volatility between 10 and 15. These are precisely the medium risk portfolios. This means that the medium risk portfolios were not built efficiently and therefore suffered more than high-risk portfolios for the financial shock.

Finally, keeping the focus on volatility we see that the largest change in volatility was recorded among portfolios that originally had low risk, while high risk portfolios have lower average percentage changes. This is justified by the fact that, on average, low-risk portfolios hold a larger share of bond funds, which generally have low volatility. During this crisis, however, the volatility of the bond market increased, in percentage terms, more than stock market. Data shows that while the stock market experienced a 221.04% increase in volatility compared to the three years prior to the pandemic, the bond market had a 281.47% increase in volatility.

Average Volatility						
date	equity market	fixed-income market				
01/01/2017-19/02/2020	9,833	1,662				
19/02/2020-30/08/2020	31,568	6,34				
variation	221,04%	281,47%				

Tab 10: Average volatilities (created from table 1 in appendix)

## Comparison between sample and market portfolios

Up to now we have analyzed the trends that the portfolios have had during the pandemic and a comparison has been made between them. However, to understand if the process of financial literacy and the evolution of the role of the financial consultant is having success, it is necessary to compare the data analyzed above with those of the market.

Let's start with the overall performance. As mentioned in the methodology, to make it as real as possible the comparison of portfolios and market trends, the values of performance, volatility and max draw-down of the market have been calculated starting from the benchmark obtained by weighting the indices Fideuram with the average percentages of the composition of the portfolios at different levels of risk.

PERFORMANCE	Fixed-income fund index	-2,39%
19/02/2020	Equity fund index	-10,14%
- 30/08/2020	flexible fund index	-3,60%
	Low-risk	-3,01%
BENCHAMARK	Medium-risk	-4,56%
	High-risk	-5,68%
	Low-risk	-4,68%
PORTFOLIOS	Medium-risk	-5,05%
	High-risk	-5,10%

Tab 11: portfolio and benchmark performances

In terms of performance, we see that, on an average level, all portfolios recorded losses over the period. However, the losses recorded by the portfolios of the various investors are generally greater than the reference benchmarks. Only the portfolios of customers with a high-risk profile were able to report losses, on average, lower than the market. Therefore, the above is confirmed in relation to the fact that investors with a high-risk profile are also those with a higher level of financial education. This allowed him to create better diversified portfolios that performed better than the market.

VOLATILITY	Fixed-income fund index	6,34
19/02/2020	Equity fund index	31,57
- 30/08/2020	flexible fund index	8,27
	Low-risk	7,52
BENCHAMARK	Medium-risk	11,40
	High-risk	14,95
	Low-risk	6,01
PORTFOLIOS	Medium-risk	9,49
	High-risk	13,15

The particular thing is that, although the performance of the portfolios with low and medium risk levels are worse than the benchmarks, their volatilities are lower than those of the benchmarks considered. This discrepancy came to light as a series of defaults occurred in the high yield bond<sup>52</sup> market that led to an unexpected bond market crash. All investors who held shares in funds with high yield bonds in their portfolios were overwhelmed more than others by the effects of the crisis. Regarding the high-risk portfolios, the volatility data is in agreement with the performance recorded. In fact, we find for the latter a lower volatility than the benchmark and a lower loss.

Finally, looking at the max draw-down, the values are in line with the performance results.

Tab	13:	portfolio	and	benchmark	Max	drawdowns
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MAX DRAWDOWN	Fixed-income fund index	-10,08%
19/02/2020	Equity fund index	-33,33%
- 30/08/2020	flexible fund index	-12,46%
	Low-risk	-11,70%
BENCHAMARK	Medium-risk	-15,90%
	High-risk	-19,48%
	Low-risk	-13,10%
PORTFOLIOS	Medium-risk	-17,81%
	High-risk	-20,65%

The values recorded by the portfolios are in fact higher than the reference benchmark. If we then put the percentage differences between the portfolios max draw-down and the reference

<sup>&</sup>lt;sup>52</sup> A high yield bond is a type of corporate bond that offers a higher interest rate due to its greater risk of default. When companies with high default risk issue bonds, they may not be able to get a high enough credit rating. As a result, they typically issue bonds with higher interest rates in order to attract investors and compensate them for this increased risk.

Source: https://tendercapital.com/obbligazioni-high-yield-definizione-funzionamento-e-rischi/

benchmarks in ascending order, we see that the portfolios with medium risk have lost more than the others.

LOW-RISK	-10,69%
MEDIUM-RISK	-10,74%
HIGH-RISK	-5,66%

Tab 14: percentage difference between portfolios and benchmarks "max drawdown"

However, taking into account the results that emerged above through the regression, the greater collapse of portfolios with medium risk respect the benchmark was a figure that we expected and that was confirmed by the analysis.

Overall, an important factor emerges from this comparison of performance, volatility and max draw- down. Although the level of diversification of portfolios seems to have increased over time, as we saw in the second part of the analysis. This diversification does not appear to be efficient during times of crisis. In fact, during the pandemic crisis, despite the volatility values of the portfolios were on average lower than those of the reference benchmarks, the portfolios recorded greater losses than the benchmarks. This is due to the fact that although the portfolios presented a lower risk, the funds within them were not well decorrelated with each other, thus leading the portfolio to have a greater collapse than the market.

# Conclusion

Now that all the data that were found have been analyzed, it is possible to draw final conclusions. As most often mentioned, the ultimate goal of this paper is to try to understand if the level of investor literacy has increased over time; if the evolution of the figure of the financial advisor offers greater protection for savers who turn to him; and, in the case of positive answers to the previous questions, to understand if these improvements are able to protect the investor in times of crisis.

From the results found in the first part of the analysis, where a comparison was made between the portfolios held by investors during the financial crisis of 2007 and those held during the crisis that began in February 2020, it emerged that the degree of diversification of portfolios is increased over time. From here we can deduce that on average the level of financial knowledge has increased among investors, who have realized the importance of diversifying the portfolio. Obviously, to do this (diversify the portfolio) the evolution of the financial consultant and the financial industry played a fundamental role, which, thanks also to current regulations, is able to operate with the so-called "open architecture" system, in other words the advisors has the possibility of placing products from multiple issuers (multi-brand). This provides flexibility in the construction and management of the portfolio that certainly was not before.

Unfortunately, despite the level of diversification of portfolios has increased with the passage of time, this does not seem to be efficient. As we saw in the last part of the analysis, where the average portfolios were compared with the market benchmarks, although the volatility of the portfolios, on average, was lower than that of the benchmarks, the portfolios recorded higher losses.

From here we can conclude that the level of financial literacy reached by investors and the evolution of the financial advisor are not yet sufficient to protect investors from sudden shocks that could occur in the market over time.

It is not possible to establish with certainty if and when this level of efficiency will be reached, but technological evolution will certainly play a fundamental role in this process. The improvement of current valuation systems, for example, such as software for calculating the correlation between different funds, will allow investors and financial advisors to have more information when selecting the instruments to be included in the portfolio. This will give them the opportunity to make even more conscious choices in order to make their portfolios more efficient.

To demonstrate this, I would like to report a table with performance, volatility and max draw- down of 4 model portfolios created by the same company to which the consultants who provided me the data belong.

Type of portfolio	risk level	performance	volatilità	max draw-down
Conservative	low	-0,64	5,96	-11,08
Balanced	medium	1,59	10,91	-15,95
Growth	high	1,17	15,17	-21,94
Dynamic	high	2,38	18,26	-24,58

Tab 15: portfolios created from "company's study center"

As we can see, all portfolios perform better than the benchmarks used above. The success of this allocation is due not only to the skills of the professionals who worked there, but also to the technologies available to them. Within the department where model portfolios come from, the various managers have at their disposal more tools for building a portfolio than the consultants have. In particular, they have programs capable of processing the so-called "decorrelation tables" between the various products on the market. This gives their the ability to be more efficient in assets allocation, giving their the ability to maximize the relationship between risk and return.

I conclude by saying that, although the investor literacy process is still long, a good level has been reached. This is demonstrated by the fact that, currently, those who deal with the market are able to evaluate the various market movements more objectively. As was the case in the shock of March 2020, where investors did not liquidate their positions, and did not panic at the sight of the financial collapse of the market. This happened thanks to the knowledge acquired over time by investors, who rightly understood that the shock was caused by an element external to the market and that therefore the crisis, as it has been shown, would be transitory.

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# Appendix

Tab 1:

		low-risk			medium-risk		h	igh-risk	
								0	
porfolio	tot 19/02/2020	tot 30/08/2020	performace 19/02/2020	performance 30/08/2020	volatility (19/02/2020)	volatility (30/08/2020)	volatility change	max draw-down	date MaxDD
1	124392,93	118505,11	6,81%	-4,73%	3,31	8,32	151,36%	-18,90%	23/03/2020
2	858038,72	828564,92	6,47%	-3,44%	2,6	7,65	194,23%	-15,01%	23/03/2020
3	263689,5	232555,01	8,68%	-11,81%	6,52	13,24	103,07%	-19,04%	23/03/2020
4	272517,58	251639,67	0,19%	-7,66%	5,4	12,28	127,41%	-16,93%	23/03/2020
5	169502,05	162442,97	4,87%	-4,16%	1,64	5,19	216,46%	-11,94%	24/03/2020
6	19963,93	19624,97	2,02%	-1,70%	1,223	4,02	228,70%	-10,27%	23/03/2020
7	87926,13	70409,32	4,76%	-19,92%	1,78	4,66	161,80%	-10,98%	24/03/2020
8	106379,41	111601,64	2,25%	4,91%	1,88	5,79	207,98%	-14,91%	24/03/2020
9	123330,47	136351,09	3,66%	10,56%	2,17	6,42	195,85%	-14,45%	23/03/2020
10	645809,14	634697,89	20,90%	-1,72%	10,79	18,64	72,75%	-25,89%	23/03/2020
11	585259,97	574444,06	3,24%	-1,85%	2,11	5,76	172,99%	-14,26%	24/03/2020
12	184886,58	178002,91	6,01%	-3,72%	1,41	4,68	231,91%	-12,05%	24/03/2020
13	144684,58	140247,43	2,87%	-3,07%	1,67	7,48	347,90%	-17,12%	23/03/2020
14	82609,97	77454,08	5,82%	-6,24%	2,79	6,06	117,20%	-0,136	18/03/2020
15	256284,68	252658	15,04%	-1,42%	4,68	11,99	156,20%	-15,84%	23/03/2020
16	222888,06	223331,55	9,74%	0,20%	5,84	13,13	124,83%	-19,32%	18/03/2020
17	31735,6	31518,48	3,66%	-0,68%	3,81	8,6	125,72%	-15,09%	23/03/2020
18	336094,87	278886,16	4,47%	-17,02%	3,4	8,67	155,00%	-17,98%	23/03/2020
19	48526,6	43179,97	1,26%	-11,02%	1,74	6,83	292,53%	-17,16%	23/03/2020
20	77579,6	70903,55	4,05%	-8,61%	3,62	6,96	92,27%	-14,21%	24/03/2020
21	30136,85	28735,33	3%	-4,65%	2,37	6,94	192,83%	-13,93%	24/03/2020
22	117166,1	109589,65	10,83%	-6,47%	3,43	7,15	108,45%	-13,25%	24/03/2020
23	233609,74	218548,51	9,84%	-6,45%	1,62	5,14	217,28%	-12,55%	19/03/2020
24	80421,83	71591,79	12,23%	-10,98%	6,55	14,6	122,90%	-28,66%	24/03/2020
25	31995,81	30942,03	4,70%	-3,29%	3,04	7,89	159,54%	-17,33%	23/03/2020
26	105732,46	102907,87	6,69%	-2,67%	3,25	8,68	167,08%	-17,75%	23/03/2020
27	113517,3	97613,8	33,62%	-14,01%	5,94	13,61	129,12%	-24,75%	23/03/2020
28	198351,19	196192,23	19,89%	-1,09%	13,95	28,05	101,08%	-30,41%	18/03/2020
29	46327,43	41946,42	9,46%	-9,46%	6,94	16,11	132,13%	-25,35%	23/03/2020
30	49931,03	47670,74	11,79%	-4,53%	5,53	12	117,00%	-21,78%	23/03/2020
31	44399,61	37528,39	6,82%	-15,48%	4,95	11,67	135,76%	-22,02%	23/03/2020
32	38285,65	39250,75	15,21%	2,52%	7,72	15,76	104,15%	-23,18%	18/03/2020
33	115733,35	107194,32	15,96%	-7,38%	6,87	15,15	120,52%	-24,08%	23/03/2020
34	172395,89	166201,64	0,81%	-3,59%	1,99	4,02	102,01%	-8,99%	25/03/2020
35	92052,26	85469,97	10,78%	-7,15%	4,72	10,25	117,16%	-18,79%	23/03/2020
36	412537,06	369449,65	12,63%	-10,44%	4,29	10,48	144,29%	-19,43%	23/03/2020
37	416219,86	401087,11	3,95%	-3,64%	2,58	6,53	153,10%	-16,13%	19/03/2020
38	105638,62	102841,66	5,12%	-2,65%	1,80	4,31	139,44%	-10,96%	23/03/2020
39	26739,77	56637,23	2,28%	-1,63%	1,22	5,46	347,54%	-12,56%	23/03/2020
40	75632,7	72947,32	2,79%	-3,55%	1,36	4,9	260,29%	-11,64%	23/03/2020
41	127132,78	118651,7	5,80%	-6,67%	2,06	5,62	172,82%	-13,39%	23/03/2020
42	108061,07	104499,73	2,66%	-3,30%	2,46	4,97	102,03%	-10,66%	24/03/2020
43	148088,54	138408,99	0,06%	-6,54%	2,02	6,02	198,02%	-12,27%	23/03/2020
44	100567,19	100367,28	4,00%	-0,20%	1,86	6,81	266,13%	-12,35%	24/03/2020
45	116901,67	115282,55	6,01%	-1,39%	2,23	5,62	152,02%	-12,90%	23/03/2020
46	44247,57	42022,41	6,98%	-5,03%	2,78	7,53	170,86%	-13,84%	23/03/2020
47	110156,45	106029,94	3,35%	-3,75%	2,21	6,14	177,83%	-15,59%	23/03/2020
48	25531,13	25184,83	14,49%	-1,36%	11,34	22,65	99,74%	-30,25%	23/03/2020
49	527725,69	497274,22	5,64%	-5,77%	2,41	6,79	181,74%	-16,60%	23/03/2020
50	42312,67	41187,15	4,83%	-2,66%	1,32	4,88	269,70%	-10,63%	23/03/2020
average	169992,99	162205,48	7,38%	-4,93%	3,78	9,04	166,77%	-16,74%	

## Tab 2: Portfolios composition

Portfolio	Asset Under Management	Insurance Policy	Savings Administered (bond)	Savings Administered (other)	date
1	38350,74				2009
2	1138,68	19000,5			2008
4	21957			2802,31	2010
5	94000		69164,6		2007
6	17866,03		85356,7		2010
7	20268,72			149,24	2010
8	5957			99,22	2009
9	30424,69		25190,34	3176,68	2007
10	35916,08		124747,97	5019,12	2007
11	120855,81				2009
12	56188,44	22000		528,81	2009
13	239473,45			46240,87	2010
14	183250				2009
15	8708,82	25997,98	12490		2007
16	27147,53	27077,4	28395,63	11562	2007
17	30642,37		30933,93	1887,12	2010
18	31811,86	15026,94			2008
19	26129,9				2009
20		14533		7539	2009
21	22434,33		7039,2		2008
22	97475,19				2010

## Tab 3: Portfolios composition

reference date 19/02/2020							
portfolio	fixed-income fund	equity fund	flexible fund	insurance policy	savings administered		
1	45591,35	24302,30	54499,28				
2	379335,30	81271,51	40617,90		356814,10		
3	105587,69	124355,36	33746,45		78672,96		
4	102623,54	77813,15			92080,89		
5	123351,88			42432,05	3718,12		
6	11449,31			8514,62			
7	31671,11	6447,26	8344,86	41419,14	43,76		
8	103000,65				3378,76		
9	90776,24	6562,17	14881,32		11110,74		
10	383600,83	12067,95		153167,26	96973,10		
11	108981,25		103403,41	326143,45	46731,86		
12	110213,26	25293,30	48894,23		485,79		
13	45686,01		97004,04		1994,53		
14	55524,29		26850,69		234,99		
15				256284,68			
16	149684,44	72970,01			233,61		
17		6297,77	25419,96		17,87		
18	217230,75	56330,40	32553,15		29980,57		
19	9007,98		37014,22		2504,40		
20	51620,12		25507,30		452,18		
21	30036,85				100,00		
22	115959,94				1206,19		
23	21412,60	1354,69	69129,19	106782,10	34931,16		
24		11331,73	21502,96	8400,00	39187,14		
25	10161,26	3650,24	5209,21	12400,00	575,10		
26	17877,12	12878,01	15824,29	55664,22	3489,45		
27	5050,95	18143,40	16094,78	30534,86	43693,31		
28		84883,29		24000,00	89467,90		
29		9825,83	9453,77		27047,83		
30		12110,03	20911,41	12600,00	4309,59		
31	4140,84	8664,26	17068,36	5000,00	9526,15		
32		10091,43	8311,60		19882,62		
33	5184,65	19051,48	5484,43	66709,36	19303,43		
34	30507,52		135694,12				
35	52420,85	23167,20	15814,80		649,41		
36	179624,41	75110,42	157715,20				
37	35012,27		99221,38	263386,40	18599,81		
38	58727,21		21792,78		25118,63		
39	26739,77						
40	73787,02				1845,68		
41	47624,96		12546,24	31144,02	35817,56		
42	60928,09			42845,04	4287,94		
43	71619,42		43198,08	23879,15	9436,89		
44	41535,24	31732,08	10847,61		16452,26		
45	35808,19		21185,23	55475,29	4432,96		
46	38529,07	5594,15			124,35		
47	26612,00		65925,76	17307,94	310,75		
48		18941,48			6589,65		
49	155695,94	5520,75	82524,37	175448,32	108536,31		
50	40827,90				1484,77		

## Tab 4: Portfolios composition

reference date 30/08/2020							
portfolio	fixed-income fund	equity fund	flexible func	insurance policy	savings administered		
1	42085,69	23407,32	53012,10				
2	351846,95	144444,56	40857,87		291415,54		
3	68043,12	131557,45	32954,44		106321,17		
4	140639,04	37098,53			43902,10		
5	113092,86	6492,32		80186,08	2671,71		
6	11110,35			8514,62			
7	21329,04		7780,66	41143,98	155,64		
8	90229,48	8290,72			13081,44		
9	96574,86	7550,19	14532,05		17693,99		
10	82789,77	153089,64	46064,21	157372,17	195382,10		
11	115233,27		100604,17	326984,16	31622,46		
12	122424,06	6078,27	49183,09		317,49		
13	45568,22	26208,95	68470,26				
14	53157,36		24167,63		129,09		
15				252658,00			
16	139198,12	84113,72			19,71		
17		7259,55	24244,06		14,87		
18	174587,17	46990,65	29388,52		29388,52		
19	8693,18		34486,79				
20	45952,33		24578,04		373,18		
21	28657,95				76,38		
22	108838,36				751,29		
23	35731,35		51098,72	106215,85	12294,85		
24		11247,75	18825,16	9600,00	31918,88		
25	9709,56	3661,32	4896,55	12402,51	272,09		
26	17033,02	11908,02	15052,64	55625,34	3271,85		
27	4826,27	18094,86	14445,62	20000,00	75666,86		
28		90118,28		24000,00	102463,09		
29		10778,27	8827,93		26211,74		
30		13657,66	22242,09	12600,00	4386,49		
31	3956,56	8234,82	16596,93	5000,00	9526,15		
32		10983,31	7993,34		20274,10		
33	4954,02	18202,99	5155,26	62041,57	16840,48		
34	30834,80		141561,09				
35	58038,33	26724,70	15163,76		543,18		
36	144385,26	117670,67	105784,55				
37	34221,61		94280,96	258166,35	14415,19		
38	57617,95		19674,21		25549,50		
39	51137,16	5027,62			472,45		
40	71785,91				1161,41		
41	53728,68			15455,39	49467,63		
42	57734,41			42559,96	4205,36		
43	68704,33		40010,46	21979,99	7713,48		
44	32255,80	34212,87	10394,15		23504,46		
45	34484,10		19871,91	53601,09	7325,45		
46	37643,22	4083,13			296,06		
47	25840,19		55025,34	17270,12	7894,29		
48		25184,83					
49	192640,78	9820,60	75563,44	172268,81	46980,59		
50	34860,23	5184,04			16572,42		

### Tab 5

percentage of portfolio composition reference dare 19/02/2020						
portfolio	fixed-income fund	equity fund	flexible fund	insurance policy	savings administered	
1	36,65%	19,54%	43,81%			
2	44,21%	9,47%	4,73%		41,58%	
3	30,84%	36,32%	9,86%		22,98%	
4	37,66%	28,55%			33,79%	
5	72,77%			25,03%	2,19%	
6	57,35%			42,65%		
7	36,02%	7,33%	9,49%	47,11%	0,05%	
8	96,82%				3,18%	
9	73,60%	5,32%	12,07%		9,01%	
10	59,40%	1,87%		23,72%	15,02%	
11	18,62%		17,67%	55,73%	7,98%	
12	59,61%	13,68%	26,45%		0,26%	
13	31,58%		67,05%		1,38%	
14	67,21%		32,50%		0,28%	
15				100,00%		
16	67,16%	32,74%			0,10%	
17		19,84%	80,10%		0,06%	
18	64,63%	16,76%	9,69%		8,92%	
19	18,56%		76,28%		5,16%	
20	66,54%		32,88%		0,58%	
21	99,67%				0,33%	
22	98,97%				1,03%	
23	9,17%	0,58%	29,59%	45,71%	14,95%	
24		14,09%	26,74%	10,44%	48,73%	
25	31,76%	11,41%	16,28%	38,76%	1,80%	
26	16,91%	12,18%	14,97%	52,65%	3,30%	
27	4,45%	15,98%	14,18%	26,90%	38,49%	
28		42,79%		12,10%	45,11%	
29		21,21%	20,41%		58,38%	
30		24,25%	41,88%	25,23%	8,63%	
31	9,33%	19,51%	38,44%	11,26%	21,46%	
32		26,36%	21,71%		51,93%	
33	4,48%	16,46%	4,74%	57,64%	16,68%	
34	18,36%		81,64%			
35	56,95%	25,17%	17,18%		0,71%	
36	43,55%	18,21%	38,24%			
37	8,41%		23,84%	63,28%	4,47%	
38	55,59%		20,63%		23,78%	
39	100,00%					
40	97,56%				2,44%	
41	37,46%		9,87%	24,50%	28,17%	
42	56,38%			39,65%	3,97%	
43	48,35%		29,16%	16,12%	6,37%	
44	41,30%	31,55%	10,79%		16,36%	
45	30,63%		18,12%	47,45%	3,79%	
46	87,08%	12,64%			0,28%	
47	24,16%		59,85%	15,71%	0,28%	
48		74,19%			25,81%	
49	29,50%	1,05%	15,64%	33,25%	20,57%	
50	96,49%				3,51%	

### Tab 6

percentage of portfolio composition			reference dare 30/08/2020			
portfolio	fixed-income fund	equity fund	flexible fund	insurance policy	savings administered	
1	35,51%	19,75%	44,73%			
2	42,46%	17,43%	4,93%		35,17%	
3	20,08%	38,82%	9,72%		31,37%	
4	63,45%	16,74%			19,81%	
5	55,86%	3,21%		39,61%	1,32%	
6	56,61%			43,39%		
7	30,29%		11,05%	58,44%	0,22%	
8	80,85%	7,43%			11,72%	
9	70,83%	5,54%	10,66%		12,98%	
10	13,04%	24,12%	7,26%	24,79%	30,78%	
11	20,06%		17,51%	56,92%	5,50%	
12	68,78%	3,41%	27,63%		0,18%	
13	32,49%	18,69%	48,82%			
14	68,63%		31,20%		0,17%	
15				100,00%		
16	62,33%	37,66%			0,01%	
17		23,03%	76,92%		0,05%	
18	62,27%	16,76%	10,48%		10,48%	
19	20,13%		79,87%			
20	64,81%		34,66%		0,53%	
21	99,73%				0,27%	
22	99,31%				0,69%	
23	17,40%		24,88%	51,73%	5,99%	
24		15,71%	26,30%	13,41%	44,58%	
25	31,38%	11,83%	15,82%	40,08%	0,88%	
26	16,55%	11,57%	14,63%	54,06%	3,18%	
27	3,63%	13,60%	10,86%	15,03%	56,88%	
28		41,61%		11,08%	47,31%	
29		23,52%	19,27%		57,21%	
30		25,82%	42,06%	23,82%	8,29%	
31	9,13%	19,01%	38,32%	11,54%	21,99%	
32		27,98%	20,36%		51,65%	
33	4,62%	16,98%	4,81%	57,88%	15,71%	
34	17,89%		82,11%			
35	57,77%	26,60%	15,09%		0,54%	
36	39,25%	31,99%	28,76%			
37	8,53%		23,51%	64,37%	3,59%	
38	56,03%		19,13%		24,84%	
39	90,29%	8,88%			0,83%	
40	98,41%				1,59%	
41	45,28%			13,03%	41,69%	
42	55,25%			40,73%	4,02%	
43	49,64%		28,91%	15,88%	5,57%	
44	32,14%	34,09%	10,36%		23,42%	
45	29,91%		17,24%	46,50%	6,35%	
46	89,58%	9,72%			0,70%	
47	24,37%		51,90%	16,29%	7,45%	
48		100,00%				
49	38,74%	1,97%	15,20%	34,64%	9,45%	
50	61,57%	9,16%			29,27%	

## Tab 7

changes in port	folios between 19/02/2	2020 and 30/08/202	0		
portfolio	fixed-income fund	equity fund	flexible fund	insurance policy	savings administered
1	-1,14%	0,22%	0,92%		
2	-1,74%	7,96%	0,20%		-6,41%
3	-10,76%	2,50%	-0,13%		8,40%
4	25,80%	-11,82%			-13,98%
5	-16,91%	3,21%		14,58%	-0,87%
6	-0,74%			0,74%	
7	-5,73%	-7,33%	1,56%	11,33%	0,17%
8	-15,97%	7,43%			8,55%
9	-2,78%	0,22%	-1,41%		3,97%
10	-46,35%	22,25%	7,26%	1,08%	15,77%
11	1,44%		-0,15%	1,20%	-2,48%
12	9,17%	-10,27%	1,18%		-0,08%
13	0,92%	18,69%	-18,22%		-1,38%
14	1,42%		-1,30%		-0,12%
15					
16	-4,83%	4,92%			-0,10%
17		3,19%	-3,18%		-0,01%
18	-2,36%	0,00%	0,80%		1,56%
19	1,57%		3,59%		-5,16%
20	-1,73%		1,79%		-0,06%
21	0,07%				-0,07%
22	0,34%				-0,34%
23	8,24%	-0,58%	-4,71%	6,02%	-8,97%
24		1,62%	-0,44%	2,96%	-4,14%
25	-0,38%	0,42%	-0,46%	1,33%	-0,92%
26	-0,35%	-0,61%	-0,34%	1,42%	-0,12%
27	-0,82%	-2,38%	-3,32%	-11,87%	18,39%
28		-1,19%		-1,02%	2,20%
29		2,31%	-1,14%		-1,18%
30		1,57%	0,18%	-1,41%	-0,34%
31	-0,19%	-0,50%	-0,13%	0,28%	0,54%
32		1,62%	-1,34%		-0,28%
33	0,14%	0,52%	0,07%	0,24%	-0,97%
34	-0,47%		0,47%		
35	0,82%	1,43%	-2,09%		-0,16%
36	-4,30%	13,78%	-9,48%		
37	0,12%		-0,33%	1,09%	-0,87%
38	0,43%		-1,50%		1,07%
39	-9,71%	8,88%			0,83%
40	0,85%				-0,85%
41	7,82%		-9,87%	-11,47%	13,52%
42	-1,13%			1,08%	0,06%
43	1,29%		-0,25%	-0,24%	-0,80%
44	-9,16%	2,53%	-0,43%		7,06%
45	-0,72%		-0,88%	-0,96%	2,56%
46	2,50%	-2,93%			0,42%
47	0,21%		-7,95%	0,58%	7,16%
48		25,81%			-25,81%
49	9,24%	0,93%	-0,44%	1,40%	-11,12%
50	-34,92%	9,16%			25,76%
average	-2,02%	2,07%	-1,03%	0,37%	0,61%

# SUMMARY

# BEHAVIORAL FINANCE AND THE ROLE OF FINANCIAL ADVISORY IN CRISIS TIMES: ANALYSIS AND COMPARISON OF PRIVATE PORFOLIOS BETWEEN THE 2008 CRISIS AND THE COVID-19 CRISIS

The ongoing Covid-19 pandemic represents a major challenge for the entire world. Nations have found themselves having to cope with several emergencies: first and foremost a health-care one, followed by social, political, and economic crises as well. In particular, the financial market turmoil caused by the pandemic shows all the typical characteristics of the so-called "black swan", a term first theorized by the economist Nassim Taleb, referring to an unforeseen event with incredibly significant consequences for the overall market.

Throughout recent history we find several examples of black swan events that later went on to create turbulence in the financial markets. We have seen the Asian financial crisis of '97, the Internet bubble in the 2000s, the great financial crisis of 2008. More recently we also saw the sovereign debt crisis in Europe in 2009, the oil crisis of 2014, and the announcement of Brexit in 2016. All of these crises had very different originating events, thus generating distinct effects on investors' portfolios and, therefore, in their response behavior.

It is for these reasons, briefly summarized here, that it was decided to base the following thesis on the impact that the two most severe crises of the last 15 years have had on the portfolios of Italian savers and in their investment habits. These are the great financial crisis of 2007-2009 caused by the so-called subprime mortgages which resulted in the default of several credit institutions, including Lehman Brothers; and the most recent crisis that began in February 2020 sparked by the Covid-19 pandemic.

Furthermore, the proposed analysis led to the question of what was the role of the financial consultant in this new scenario. In particular we aim to assess whether the evolution of financial advisory and the financial education strategies currently available in the Italian marketspace are capable of providing the necessary tools to protect savers' investments in the face of sudden market shocks.

The result is a work that tries to take stock of the two crises, analyzing them at several depths: first through a temporal reconstruction of the two crisis and the regulatory framework of reference, followed by an analysis of the academic literature on behavioral finance and financial advisory and lastly via the analysis of actual portfolios samples held by investors during the relevant periods. The peculiarity of the work is to generate a parallel between the characteristics of the two different crises, sparking a dialogue around their similarities and differences through the adoption of a comparative perspective.

The first part of the paper is dedicated to the reconstruction and historical review regarding the changes in the financial market over time and, in particular, during the last two decades, together with the regulatory framework that regulates the market and the world of financial advisory (Chapter 2). The second chapter proceeds with a reconstruction of the two crises analyzed in this work: the financial crisis that began in 2007 and the current crisis linked to the pandemic. At this stage, it is essential to emphasize the profoundly different nature of the two crises, with the first one due to systematic failures of credit system whereas the second one takes the form of a response to a healthcare emergency. Nonetheless both have had severe repercussions on investor confidence and, by extension, on the overall financial market.

In the second section of the paper, we focus on the issue of behavioral finance as a fundamental branch of the economy. The aspects analyzed concern the studies on the behavior adopted by individuals in the face of economic choices. Particular attention was paid to the concept of heuristics, prospect theory and market inefficiencies, all representing cognitive biases involved in the decision making process. Although we concede that some of these biases cannot be "corrected" because they are inherent in human nature, the following thesis aims to show that several others (such as overconfidence and anchoring) can in fact be "corrected" through a good level of financial education (Chapter 3).

The theme of behavioral finance is linked to financial literacy (Chapter 4), defined by the OECD as "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being". This chapter aims to assess the financial culture of the average Italian investor, with the intent of highlighting the benefits that the figure of the financial consultant brings in providing accurate information and adequate training to those individuals looking to deploy capital in the financial market.

Once the theoretical research section has been completed, the analysis conducted on the portfolios of private investors is then presented. Chapter 5 describes the methodology used for the data analysis. The first part of the chapter highlights the different effects produced by the crisis of 2007 and that of 2020 on financial markets through the analysis of two Fideuram sectoral indices, one of the equity market and the other of the fixed income market. In the second part, the portfolio structures held by investors during the two crises are compared and contrasted; and in the third and final part, we draw a parallel between portfolio developments during the period of the first pandemic wave (February 2020-August 2020) and the relevant market benchmarks.

Finally, the final conclusions are set out in Chapter 6. Through the results of our analysis we aim to determine whether the current state of financial literacy and the evolution of financial consulting practices provide the right tools to safeguard investors' assets in the face of unexpected and unprecedented market shocks.

This study, developed during the lockdown months, aims to put under a magnifying glass the very particular phase our society is currently undergoing, with the hope that these thoughts may then spark a discussion on the value of financial culture for the country's recovery and enhancement during times of crisis.

### **CHAPTER 1**

The world economy is increasingly interdependent: this is not new in recent decades. Even in other historical periods, the economically more advanced nations had strong elements of integration of commercial (for example, in the 16th and 17th centuries) and industrial (in the fifty years that preceded the Great War, that is from 1870 to 1914). The truly new phenomenon is given by the extent of the financial globalization that has taken place since the early 90s of the 20th century.

Thanks to globalization we have witnessed the widespread diffusion of a sophisticated telematic communication technology (of which the Internet is clear proof); the integration of the different segments of the international financial markets (equities, bonds, derivatives and currencies); the freedom of movement of short-term financial capital following the removal of national legal barriers in countries with advanced economies.

In particular, the mobility of capitals, thanks to the existence of open and internationalized capital markets, has benefited from a technology that allows to make investments and financial divestments from any geographic place quickly and with very low transaction costs. This rapid movement of capital on a global scale increases the risks of excessive variability in the prices of financial assets, creating potential conditions of less stability of financial systems, in the absence of supranational

institutional safeguards capable of regulating and controlling them. The issue of actions to be taken to contain the extent and depth of market failures and to mitigate their effects on the real economy was raised at an international level. Giving rise to a complex and articulated supranational public strategy for the protection of investors and for the integrity of the functioning of the markets.

The beginning of this process of adjustment between states, in Italy, begins with the Legislative Decree no. 415 of 23 July 1996, the community directives were implemented (10 May 1993 no. 93/22 and of 15 May 1993 no. 93/6, also known as the "Eurosim directives ") which required coordination of national investment services disciplines with European ones. From that moment in Italy begins a flourishing production of rules aimed to adapting the national regulation to the European one. Among the most important reforms in terms of investor protection and regulation of financial advisors we find Legislative Decree no. 164 of 17 September 2007, which implemented the directive of 21 April 2004, 2004/39 on financial services (Market in Financial Instruments Directive, MIFID I).

The directive marks, on the financial advisory front, the fundamental step following the harmonization process with the international context. The objectives of this new Directive are to stimulate competition in the markets by facilitating the freedom to provide services in member countries, to strengthen transparency, solidity and efficiency through substantial legislation on the execution of orders, ensure greater protection for investors by standardizing the conduct rules for intermediaries in the different European markets and finally introducing further uniform control and organization requirements for intermediaries.

Others important reforms of the MiFID I are those relating to the relationships to be maintained with customers, these are strengthened by creating a complicated set of rules for customer knowledge by introducing the concepts of "suitability, appropriateness" and "mere execution of the orders or execution only ". In addition to this, a hitherto non-existent customer classification discipline (customers are not all the same) is introduced in detail, divided into two levels, distinguishing retail customers on one, and qualified counterparties and professional investors on another.

With the passage of time, in line with market developments, a new regulatory intervention was necessary to fill the gaps in the first MiFID directive. Gaps mainly due to rapid innovation that the market put in place. It was necessary to strengthen the rules of protection and behavior to ensure the protection of investors, who are increasingly numerous. This strengthening takes place with the 2014/65 EU Directive of 15 May 2014 better known as "MiFID II", and implemented in Italy with

the Legislative Decree of 3 August 2017 n. 129. This Directive separates the concept of consultancy, previously understood universally and now divided into two main categories: "dependent consultancy" and "independent". Another very important objective of MiFID II is to promote an investor's financial culture.

### **CHAPTER 2**

Starting from the last years of the last century and especially from the beginning of the new millennium, there was a disproportionate increase in house prices in the USA. the positive trend in house prices was mainly caused by excessive demand for real estate, far outstripping supply. Low rates, irrational exuberance and deregulation in the financial sector are some of the reasons that actually led to the creation of the speculative bubble in the financial sector.

Everyone therefore thought that could gain something from this situation. Animated by this eager euphoria, many threw themselves into the mainstream of the moment (buying a property mainly for profit and non-necessity purposes), exposing themselves a lot from a financial point of view, more than their possibility.

The disproportionate exposure to debt by these subjects was possible thanks to the financial deregulation begun in the last century which incentivized banks to take on more risk, increasing the share (out of total loans) of "sub-prime" mortgages. These are mortgages made to "high risk" customers, to debtors who typically have a low credit score.

With the financial deregulation started in the 90s, new types of financial products called collateralized debt obligations (Cdo) were introduced. The Cdo consists of bonds (a form of long-term financing) created by merging a series of financial products sold to international investors. During that period, numerous high-risk subprime mortgages were "bundled" into the Cdos handled by the world stock exchanges.

Given the euphoria of the moment, with the prices of the securities market constantly rising, banks lost the incentive to check the quality of their debtors. The reasons were mainly 3: with the rosy expectations of a rise in house prices, the banks were not particularly worried in case of foreclosure of the house; they were able to diversify risk by selling CDOs; They insured themselves against the risk of default: there were insurance companies (for example AIG, American International Group) that sold "credit default swaps", or CDS. Derivative instruments that hedge the creditor against the risk of insolvency.

We understand from this situation that the real problem that led to the serious consequences of the bursting of the bubble, was not so much financial innovation, as the lack of an appropriate

regulatory regime within the system, which progressed faster and faster toward a context of greater risk, with a weak defensive structure in case of a crash.

All these behaviors put in place by banks created considerable difficulties in 2007 when the bubble burst and house prices began to fall.

People saw the value of their home decrease exponentially, and they considered it no longer convenient to pay the mortgage payments, as the value of the house was now far below the capital loaned to them. This obviously led to the abandonment of the house by many families. Together with this, it should be noted that many debtors taken from the period of initial euphoria, in which they went into excessive debt, were no longer able to meet their payment commitments. The non-collection of mortgages, the freezing of the interbank market, and the failure of the hedging systems were the main causes that led to the collapse of the financial market in the US initially and then throughout the world. As a result, a profound crisis of confidence was generated among investors regarding the financial market.

Wealth underwent a large decrease also due to the drop in share prices: banks, recording large losses on mortgages and presenting very high financial leverage ratios, were unable to cope with the difficulties through the available capital (excessively low compared to the losses) and found themselves forced to sell most of their assets, including equity holdings. All this threw the country into a deep recession.

### **COVID-19** Crisis

The crisis of 2020, on the other hand, looks like a health crisis, but precisely for this reason it was more unpredictable and with more uncertain outcomes. Compared to the crises that preceded it - including that of 2007 - there are some clearly identified differences.

It all started in November 2019 when a new coronavirus (Sars-Cov-2) had started to circulate on Chinese territory, and, in particular, in Wuhan, the most populous city in the eastern part of the country and a hub for the commerce.

What set off the alarm bell was when a large number of abnormal pneumonia, not attributable to already classified pathogens, began to be recorded in the city of Wuhan. The first official date that kicks off the whole coronavirus-related affair is 31 December 2019, in which the Chinese authorities give news for the first time of these anomalous events that were occurring inside the country.

Quickly thereafter, the virus began to spread to all parts of the world. The critical date that marks the beginning of the pandemic for Italians is 21 February 2020. On this date, in fact, several cases of coronavirus positivity emerged in the Lodi area, in Lombardy.

Given the situation and given the criticalities of the hospitals, on March 9, the Prime Minister Giuseppe Conte issues a Prime Ministerial Decree in which the lock-down is established throughout Italy. From what moment are no more travel allowed except for work or necessity reasons. Italy remained in a state of blockade for about two months.

with the advance of spring and the climatic improvement that has made the virus less aggressive, combined with all restrictive containment measures, Italy effectively emerges from the health crisis and, on 18 May 2020, with a new DPCM begins a new phase of reopening that marks the end of the lockdown that began in March. Bars and restaurants reopen, as well as many production chains. It is possible to meet people outside one's family or affective unit, and self-certification is no longer necessary to move within the same region.

At the economic level, the pandemic and the measures taken to contain it have had various effects on the real economy. The unexpected contraction of the supply is a direct effect of the lockdown, i.e. the interruption of the production chains considered non-essential. Where possible, the stoppage of 'physical presence' activities has been remedied through remote working (so-called "smart working"). However, this organizational solution was not applicable in a generalized way: for example, some sectors in close contact with the public in the service sector (such as tourism and catering) and in the industrial sector are excluded, where the lockdown determines the closure of plants and factories. The consequences of the interruption of production in one sector and in a given geographic area may also extend to other sectors and to other geographic areas, depending on the level of vertical integration of the activities (i.e. the interdependencies along the production chain of a given asset or service) and geographical connections, thus amplifying the initial shock.

A shock on the demand side is also added to the shock on the supply side, triggered by multiple factors. The restrictive measures to individual mobility cause, in the immediate future, a drop in consumption (as in the case, for example, of tourism, retail trade, transport, mass entertainment). To this is added the so-called "income effect": the slowdown or temporary closure of some activities, in fact, can lead to a drop in the income available to families since many workers have suffered a reduction in wages or, in the worst case, lost their jobs.

### **CHAPTER 3**

Investing in financial markets, especially in recent years, has become increasingly common among small investors, both because there are more and more platforms that allow small investors to invest money in the stock market, both because thanks to the process of globalization and digitalization, nowadays it is possible to find information on any topic in real time. Potentially, therefore, every subject has all the instruments, that before were reserved only to determined qualified subjects, for interact with the market, and, more importantly, for a correct appraisal of the own choices of investment. Despite the possibility of having all the information available in the markets, certain skills are still needed to know how to analyze them. It seems obvious, but especially among small investors often lack precisely these evaluative skills that are the cause of market inefficiencies. Investment decisions generally depend on data derived from reworkings on the time series of certain companies or on the expectations that one has on the future financial position of a company. It may happen, however, that some market participants put in place actions not driven by logic, but rather inspired by the mood or by particular past experiences, thus causing unexpected price variations, especially in the short term. This creates anomalies in the behaviour of investors, which cause market imbalances that neoclassical economic theories do not consider.

In order to solve this problem of lack consideration of the emotional aspects of the investors, behavioral finance comes to our aid. It helps to explain the difference between the expectations of investor behaviour and what is actually held in reality.

This discipline covers the part of the study, in the economic sector, relating to the behaviour of economic agents within the market and how the latter is influenced by them. More specifically, it focuses on the study of cognitive psychology, trying to fully understand why the rationality of economic agents is lacking in certain market contexts.

Behavioural finance develops along three main points: the heuristic, which deals with the analysis and understanding of decisions made by past emotions and experiences; the prospect theory, which studies how a given action is affected by the way in which the information is presented; market inefficiencies, which take into consideration all those situations where rationality and market efficiency are lacking.

All the errors are related to behaviors that individuals may manifest in their investment path. In fact, these biases are the cause of deviations from objective standards that economic models establish. For example, in the neoclassical impact model, the fact that a consumer's preferences change over time is a bias for theory.

For some of these biases, such as the tendency to be averse to losses or the use of a mental accounting that creates a sort of "pyramid of investments" in the minds of individuals, there are no

strategies or lessons that allow to eliminate them, because these are inherent characteristics in most human beings.

The same does not apply, however, to other types of mistakes often made, such as overconfidence or anchoring, for which it is possible to try to make a correction. And it is in this context that "behavioral finance" comes in handy.

### **CHAPTER 4**

According to the definition developed by the OECD in 2005, promoted by G20 leaders in 2012, and adopted by individual countries as part of their national strategies, financial education is "the process by which financial consumers/investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, to make informed choices, to know where to go for help, and to take other effective actions to improve their financial well-being ".

Financial education therefore includes all programs and activities that aim to improve knowledge, behavior and attitude in the financial field with a positive effect in terms of greater confidence and awareness in making responsible financial decisions. The result of the financial education process is financial literacy, which consists of the combination of awareness, knowledge, skills, attitudes, and behaviors necessary to make financial decisions and achieve financial well-being (OECD / INFE, 2012). In particular, financial knowledge represents the knowledge of elementary financial concepts and the ability to apply calculation skills in a financial context.

The introduction of a national strategy for financial education in Italy took place only recently, with a law issued in 2016 (law 26 December 2016, n. 237), before then the initiatives were limited and, in some cases, occasional. In the same year in which the decree was issued, a survey was conducted to understand the level of financial education within the country. A critical situation emerged from the survey carried out, attributable to the fragmented nature of the experiences and the scarce incisiveness of the initiatives. the survey conducted reveals also that financial education programs have almost always been designed for a generalist audience with few initiatives designed for the most vulnerable groups of the population or with specific training needs, such as women, the elderly or small businesses. For example, "Practical Guides" have been created on bank accounts, mortgages and consumer credit and a leaflet for the general public that provides information on individual protection tools.

The collaboration between the schools and the Bank of Italy is one of the most important educational initiatives. The agreement was born in 2007 with the signing of the Memorandum of Understanding "for the launch of an experimental training project in economic and financial matters in some sample schools". The collaboration aims to introduce financial education into the school curriculum through a modular training program aimed preferably at the intermediate classes of each school cycle: primary school, lower secondary school, upper secondary school. The subjects dealt with are money and alternative payment instruments to cash, price stability and the financial system.

Finally, CONSOB has created a portal, accessible from its website, which offers an overview of finance and markets, an investment guide, a section dedicated to basic financial concepts, and sections dedicated to scams, illegal practices and forms of protection. The guide emphasizes the importance of financial planning, the rules to follow and the behaviors to avoid along the path leading to the investment. The investment guide also mentions the possibility of using, among the various investment services, financial advice, a tool that in many national strategies plays an important role in reducing conflicts of interest and improving the efficiency of allocations. The Consolidated Financial Act (Legislative Decree 58 of 1998) provides that *"investment advice" means the provision of personalized recommendations to a client, at his request or on the initiative of the service provider, regarding one or multiple transactions relating to financial instruments.* The perception of financial advice is closely linked to the concept of financial education; the more informed I am, the more I am able to evaluate the service offered and, consequently, better I can

evaluate the investment options that are proposed to me.

The role of the financial advisor is to build the best investment strategy for the client, taking in account his aims, the degree of risk that intend to bear and the investment time horizon. It is therefore essential that the consultant, before starting any strategic definition, knows the client in depth, and in particular his needs. Once the consultant has all the information, he will define the assets allocation strategy, the subdivision of the assets into classes of financial assets (diversification of investments), based on the characteristics of the client. Subsequently, the consultant will then be responsible for monitoring the investment strategy and reporting periodically its progress to the client.

### **CHAPTER 5 Metodology**

In order to conduct the research and understand how and to what extent the level of investor literacy has increased over the years, 50 portfolios of private investors were examined during the period of crisis due to COVID-19 and compared with those that they were the portfolios of private investors during the 2007-2008 financial crisis. By observing the various behaviors held by savers in these two moments of crisis, it will be possible to understand whether the literacy process undertaken in Italy is successful or not.

Unfortunately, it was not possible to find the complete financial position of the portfolios dating back to 2007. This is because at that time the modern recording programs for the movements linked to a specific portfolio were not yet available. Furthermore, the law provides that all financial institutions are required to keep on file data relating to customer portfolios for 10 years (Article 119 paragraph 4 of the Consolidated Law on Banking and Article 2220 of the Civil Code). Many of these data are therefore been permanently canceled by the institutions.

Therefore, the analysis on the structure was carried out by a personal reconstruction of the portfolios through the retrieval of old documents containing the purchase and sale copies of the products held in Data re-elaboration was performed using the "eXact Suite", a platform that allows the analysis and comparison of selected instruments within a vast database of funds, ETFs and listed shares. This program made it possible to obtain all the data necessary to be able to conduct an accurate portfolios analysis.

### **CHAPTER 6: ANALYSIS**

My work started by analyzing the price trends of "Fideuram Equity Funds" Index, the benchmark for the equity sector; "Fideuram Bond Funds" Index, the world bond index, during the two events considered in this paper. From the index analysis it emerges, with reference to the financial market that during the financial crisis of 2007 investors' confidence in the market had failed, while in the crisis linked to the COVID-19 not.

In the first case, since the crisis that began in 2007 lasted for years and undermined investor confidence in the financial market, the negative effects continued for years. this is demonstrated by the fact that if we wanted to look in the graph of Fideuram Equity Funds Index the two data necessary to calculate the Max draw-down (maximum and minimum of the reference period) we see how these are about a year and a half apart (13<sup>th</sup> July 2007 – 09<sup>th</sup> March 2009). This means that the stock market has experienced a steady decline for more than a year. On the contrary, in the case of the crisis linked to COVID-19 we see how, although there have been shocks in both the stock and the bond market, the first difference compared to the past crisis where only the stock market was affected by the shock, these were milder and faster.

These data alone suggest that the confidence that investors have and had in the market is different between the two crises. In the financial one of 2007, given the long period of negative trend of the stock index, it makes us understand that trust in the market and in the subjects that operated in it had failed. During the current crisis linked to the pandemic, on the contrary, this attitude does not seem to be confirmed, because, it is true that the indices recorded a sharp decline, which was less than that of 2007, between the end of February 2020 and the first half of March of the same year. But unlike the first crisis, which took a long time before the index recovered from the collapse, in the second, in less than a year the indices had already absorbed the shock.

Analysis of the portfolio evolution and Comparison between portfolios with different degrees of risk

Date	Asset Under Management	Insurance Policy	Savings Administered (bond)	Savings Administered (other)
2007-2010	63,58%	17,74%	14,48%	4,21%
19/02/2020	71,63%	16,30%	0,00%	12,08%
30/08/2020	70,65%	16,66%	0,00%	12,69%

Looking at the table we can say that, despite the reference periods are 10 years distant, the basic structure of the portfolios has not been particularly modified over time. The main difference that exists between the portfolios of 2007 and the current ones is the lack of the bond component in the more recent portfolios. This finding is explained by the fact that currently yields bond are at historic lows, and it makes sense currently to not invest in this category of products and allocate the savings in other securities most profitable.

However, there is an important clarification to be made. Although the main portion of the portfolio was and is made up of "assets under management", i.e. funds of different nature, the analysis show that in the past decade there was a tendency to not diversify the investments. In fact, it was not unlikely to find portfolios where the capitals were invested in just two mutual funds. On the contrary, today portfolios are much more diversified, both by market and by geographical area.

### Comparison between portfolios with different degrees of risk

Having concluded the part relating to the structure, we are going to analyze the behavior of the portfolios held in time of COVID-19. The table below shows the average values for each category of portfolios and the general average.

	tot 19/02/2020	tot 30/08/2020	performace 19/02/2020	performance 30/08/2020	volatility (19/02/2020)	volatility (30/08/2020)	volatility change	max drawdown
low-risk	81221,05	78957,96	4,98%	-4,68%	2,32	6,01	178,73%	-13,10%
medium-risk	178598,35	166528,83	7,75%	-6,28%	3,76	9,36	173,48%	-17,75%
high-risk	224409,16	213274,43	10,19%	-5,10%	5,89	13,15	141,58%	-20,65%
average	169992,99	162205,48	7,38%	-4,93%	3,78	9,04	166,77%	-16,74%

First of all, it should be noted that there is a direct relationship between the risk level of a portfolio and the total amount of the same, the larger the portfolio and the higher the risk level. This could indicate in my opinion that investors with the most capital have a higher level of financial knowledge than the average. They have therefore been able to manage their capital more efficiently and effectively respect the investors with low financial knowledge, thus generating greater revenues, leading to higher than average capital.

The interesting thing, then, is the performance that the portfolios reported during the crisis (column 4 tab above), although all portfolios reported losses in the period considered, this time the risk/return relationship is not confirmed. The portfolios that have lost the most as a percentage are those at medium risk, with an average loss of 6.28%. This data tells us that medium risk portfolios probably had suboptimal asset allocation.

reference period: 19/02/2020-30/08/2020							
		PERFORMANCE	VOLATILITY	MAX DRAWDOWN			
	Low-risk	-3,01%	7,52	-11,70%			
BENCHAMARK	Medium-risk	-4,56%	11,40	-15,90%			
	High-risk	-5,68%	14,95	-19,48%			
	Low-risk	-4,68%	6,01	-13,10%			
PORTFOLIOS	Medium-risk	-5,05%	9,49	-17,81%			
	High-risk	-5,10%	13,15	-20,65%			

Comparison between sample and market portfolios

In terms of performance, we see that, on an average level, all portfolios recorded losses over the period. However, the losses recorded by the portfolios of the various investors are generally greater than the reference benchmarks. Only the portfolios of customers with a high-risk profile were able to report losses, on average, lower than the market. Therefore, the above is confirmed in relation to the fact that investors with a high-risk profile are also those with a higher level of financial education. This allowed him to create better diversified portfolios that performed better than the market.

The particular thing is that, although the performance of the portfolios with low and medium risk levels are worse than the benchmarks, their volatilities are lower than those of the benchmarks considered. This discrepancy came to light as a series of defaults occurred in the high yield bond market that led to an unexpected bond market crash. All investors who held shares in funds with high yield bonds in their portfolios were overwhelmed more than others by the effects of the crisis. Regarding the high-risk portfolios, the volatility data is in agreement with the performance recorded. In fact, we find for the latter a lower volatility than the benchmark and a lower loss.

Finally, looking at the max draw-down, the values are in line with the performance results.

The values recorded by the portfolios are in fact higher than the reference benchmark. If we then put the percentage differences between the portfolios max draw-down and the reference
benchmarks in ascending order, we see that the portfolios with medium risk have lost more than the others.

Overall, an important factor emerges from this comparison of performance, volatility and max draw- down. Although the level of diversification of portfolios seems to have increased over time, as we saw in the second part of the analysis. This diversification does not appear to be efficient during times of crisis. In fact, during the pandemic crisis, despite the volatility values of the portfolios were on average lower than those of the reference benchmarks, the portfolios recorded greater losses than the benchmarks. This is due to the fact that although the portfolios presented a lower risk, the funds within them were not well decorrelated with each other, thus leading the portfolio to have a greater collapse than the market.

## CONCLUSION

Now that all the data that were found have been analyzed, it is possible to draw final conclusions. As most often mentioned, the ultimate goal of this paper is to try to understand if the level of investor literacy has increased over time; if the evolution of the figure of the financial advisor offers greater protection for savers who turn to him; and, in the case of positive answers to the previous questions, to understand if these improvements are able to protect the investor in times of crisis.

From the results found in the first part of the analysis, where a comparison was made between the portfolios held by investors during the financial crisis of 2007 and those held during the crisis that began in February 2020, it emerged that the degree of diversification of portfolios is increased over time. From here we can deduce that on average the level of financial knowledge has increased among investors, who have realized the importance of diversifying the portfolio. Obviously, to do this (diversify the portfolio) the evolution of the financial consultant and the financial industry played a fundamental role, which, thanks also to current regulations, is able to operate with the so-called "open architecture" system, in other words the advisors has the possibility of placing products from multiple issuers (multi-brand). This provides flexibility in the construction and management of the portfolio that certainly was not before.

Unfortunately, despite the level of diversification of portfolios has increased with the passage of time, this does not seem to be efficient. As we saw in the last part of the analysis, where the average portfolios were compared with the market benchmarks, although the volatility of the portfolios, on average, was lower than that of the benchmarks, the portfolios recorded higher losses.

From here we can conclude that the level of financial literacy reached by investors and the evolution of the financial advisor are not yet sufficient to protect investors from sudden shocks that could occur in the market over time.

It is not possible to establish with certainty if and when this level of efficiency will be reached, but technological evolution will certainly play a fundamental role in this process. The improvement of current valuation systems, for example, such as software for calculating the correlation between different funds, will allow investors and financial advisors to have more information when selecting the instruments to be included in the portfolio. This will give them the opportunity to make even more conscious choices in order to make their portfolios more efficient.

To demonstrate this, I would like to report a table with performance, volatility and max draw- down of 4 model portfolios created by the same company to which the consultants who provided me the data belong.

Type of portfolio	risk level	performance	volatilità	max draw-down
Conservative	low	-0,64	5,96	-11,08
Balanced	medium	1,59	10,91	-15,95
Growth	high	1,17	15,17	-21,94
Dynamic	high	2,38	18,26	-24,58

Tab 14: portfolios created from "company's study center"

As we can see, all portfolios perform better than the benchmarks used above. The success of this allocation is due not only to the skills of the professionals who worked there, but also to the technologies available to them. Within the department where model portfolios come from, the various managers have at their disposal more tools for building a portfolio than the consultants have. In particular, they have programs capable of processing the so-called "decorrelation tables" between the various products on the market. This gives their the ability to be more efficient in assets allocation, giving their the ability to maximize the relationship between risk and return.

I conclude by saying that, although the investor literacy process is still long, a good level has been reached. This is demonstrated by the fact that, currently, those who deal with the market are able to evaluate the various market movements more objectively. As was the case in the shock of March 2020, where investors did not liquidate their positions, and did not panic at the sight of the financial collapse of the market. This happened thanks to the knowledge acquired over time by investors, who rightly understood that the shock was caused by an element external to the market and that therefore the crisis, as it has been shown, would be transitory.