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**The Analysis of Institutional Investors and the
Strategic Asset Allocation Process**



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Abstract

The acquisition of knowledge and awareness about dynamics and tools of investment thanks to information and the now inexpensive consultancy has led people towards a progressive growth of attention of problems related to the management of individual wealth, trying to make as much money as possible but with a low-risk security.

The evaluation of investment and the asset management play a very important role within each company because each project defines in detail the path that it intends to follow for its prosperity or recovery and for its subsequent stabilization in the sector in which is committed. Thanks to the choice of managers about the coordination of the organization's activity to maximize the value of assets, connected to a careful analysis of the financial risk, we try to return the investment complying with the client's expectations to the utmost.

This thesis aim is to study the process of choice of strategic asset allocation and the related structure of the compartments of investments (or sub-funds) in the case of pension funds, upon a contextualization and description of the institutional investors that today are the main financial powers and who play a fundamental role in the management of the savings and also to aid the company.

To carry out these studies, there are subsequently reported data and concepts acquired by working in the field through to the internship experience gained at the Intesa Sanpaolo S.p.A.. I deal specifically with the scheme of the defined contribution pension fund, characterized by a number of subscribers of about 72.500 and a net asset destined for services of € 5.054.614.543 (balance sheet figured on 31st December 2017), examining the asset allocation and assessing the financial performance.

I have also incorporated the difference in financial management of pension funds across Italy, U.S.A, United Kingdom and Australia / New Zealand, comparing with Unicredit S.p.A., UBI Banca S.p.A., JP Morgan Chase & Co, Barclays Plc and The Australia and New Zealand Banking Group Limited.

The paper concludes with some considerations about possible prospects that could characterize the asset management in the future.

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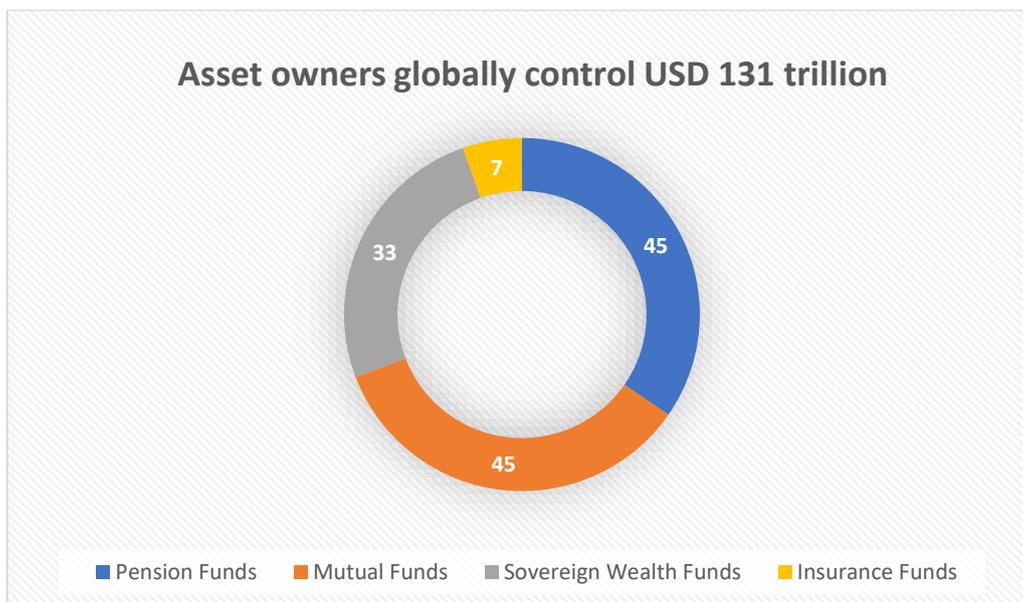
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Chapter 1

Introduction

The finance literature generally presumes that the fundamental theoretical problem is to optimize the individual portfolio of investment assets, so the question that this thesis concerns is the design of a strategic asset allocation policy.

Traditionally, people do business mainly with banks, but over time they have started increasingly dealing with other institutions for managing their savings, like pension funds, insurance companies, endowment funds, mutual funds and indirectly with sovereign wealth funds, because they rely on these financial institutions since lacking experience, confidence and time to manage their money directly, therefore feeling more protected. The challenge is to ensure that the financial institutions to whom individuals entrust, act in their interest. Pension funds seem particularly interesting vehicles to study matters related to size and liquidity in investment management performance because they tend to be larger than other institutional investors.



Graph 1: “Asset owners worldwide”, source: The asset owner of tomorrow: Thinking Ahead Institute. Various original sources. Estimation projections of 2017.

Over the last decade there have been numerous changes in the demographic structure marked principally by the extension of the average life, economic and financial conditions because they are related to the stringent commitments to contain social-health expenditure and the regulatory framework, which has finally faced the urgent need to recognize the functionality of complementary pension within the pension system and to give it a specific regulation.

“In countries with well-developed pensions systems, the poverty rate among retirees is often the same or lower than that of the general population. For example, pensioners in the UK are now financially better off than working age citizens, with the average pensioner household income overtaking the working age household income for the first time in 2017. At present, state pensions tend to come from contributions made by taxpaying citizens, but as the population ages, there will simply be fewer taxpayers to support more retirees.”¹

The employee, both employed and self-employed, has been inevitably put in the condition to build his / her own pension portfolio composed of two components of remuneration: the public pension, mainly due to the most significant periodic flow, and the supplementary or supplementary pension which consists in the collection and accumulation of contributions invested in the financial markets and through periodic payments of income shares, the aim is to obtain the pre-established yield levels.

The savers face the challenge of deciding how to allocate their retirement portfolios through asset classes and many different financial products, these decisions have important consequences for retirement wealth accumulation. Some policy analysts have voiced concerns that individual participants in “defined contribution plans” may not fully understand the risks associated with various investment options and that they may on the other hand be exposed to greater risks of retirement income shortfall than in “defined benefit plans”. Once the allocation between stocks, bonds and liquidity is decided in a consistent manner with its financial needs and based on its risk tolerance, the initial portfolio of funds has been defined and investments must always be monitored periodically making sure that the product chosen is in line with his / her own standards.

¹ World Finance - the voice of the market - | articles: “China’s Cosco to buy rival shipper Orient Overseas for \$6.3bn” and “Pension Fund Awards 2017”

Institutional investors have increased the amount of investments in alternative asset classes, attracted by the promise of superior absolute returns and low correlation with traditional assets such as equities and bonds.

Most portfolios contain risky assets and their fluctuations will consequently cause changes on the value of the portfolio too: if the risky assets increase in value, for example, the proportion of the portfolio they comprise of is also likely to increase therefore it is necessary to decide how – according to the type of mandate that has been conferred - the fund managers or management team rebalance the portfolio in response to the random events in order to overturn in earnings or limit the potential loss.

Chapter 2

Corporate wealth and restructuring

2.1 The concept of asset management and its evolution

The **asset management** is an expression used in the financial scope referring to any entity or part of a financial company that is responsible for maintaining and managing the value of a specific assets that includes: tangible assets (as in the case of property assets), or intangible (such as financial securities and human capital), be owned by a company or by individuals. The figure operating in this context is precisely the **asset manager**, i.e. an expert in the field of money (or fund) management that invest it on the behalf of clients with the goal of providing the level of service required.

The asset manager is generally active in the financial sector where he / she manages investment funds and accounts for clients who entrust their savings and then the managers have to assess the risks and prevent them, where possible, as well as minimize costs and must try to gain the trust.

To do these operations, the asset manager divides the amounts to be invested in different classes, thus providing for the so-called “*asset allocation*”, i.e. the subdivision of resources from investing in small sectors, from which investment strategies are finalized, optimizing the expected return and the risk trying to achieve the highest possible return (as in the case of a pension fund), or to provide users with the best possible service (as in the case of public infrastructure management). This activity is fortuitous and it is from this that the subsequent results depend.

In recent years, the banking system has undergone profound changes that has led to an increase in underperforming events, prompting banks to adopt strategies and organizational solutions aimed to improve economic results. So banks must select companies with a high competitive potential in order to support in their development phase through not only financial but also consultancy services. For this reason we have moved from the activity of *private banking*, namely that strategic business area conducted on a strictly trustee / fiduciary basis, where the rewarding element is the quality and the continuity of relations

with customers, to the provision of highly personalized – retailed - services based on the specific financial situation of the client with a high level of assets (belonging to the category of “High Net Worth Individuals”). The concept of asset management has evolved over time, the business has changed and moved towards the extreme personalization of the service hence giving life to a new concept that takes the name of **wealth management**.

This approach provides the full application of the open architecture model since the bank cannot underestimate the possibility and sometimes the need to resort to the preparation of an ad hoc offer for products and services belonging to other specialized operators. Hence, it is needed to select the skilled external money managers best who are best suited to provide, from time to time, the products most befitting to customer needs.

Since the primary activity for a wealth management operator is to handle the wealth of its customers, technology can play an important role on the models of adoptable services generating new opportunities and innovations in the intermediary-customer relationship, new ways of interaction, new mechanisms of selection of investment opportunities, but may also have a destructive role where the ability of the traditional operator to adapt to changes under way does not exist.

Today the sensitivity of people with regard to the planning of their assets is growing, also through the use of sophisticated tools such as financial vehicles that allow us to achieve multiple objectives; so the asset management is mainly aimed: to the availability of external investors and the expansion of organizations in finding resources and funds necessary to grow the business to the generational transfer of goods and family businesses, to the planning of the real-estate component, to the protection of vulnerable subjects, to become a relevant support tool for corporate debt restructuring plans. This latter will be argued in next section.

2.2 Debt restructuring

An efficient investment often entails remuneration from the investor, but from a financial point of view a failure to return the money or bankruptcy can lead also to criminal consequences today. Therefore, it is necessary to monitor constantly the economic and financial situation with respect to that debt. Nowadays, several specialists in the sector can try to remedy or limit liabilities by following financial strategies that we will analyze later.

The life of the company is characterized by an alternation of success and crisis: the transition from the success to the crisis phase is in general accompanied by signals able to reveal the approximation of such situations that manifest themselves, at first in a tenuous way and then become ever more intense and sometimes they also irreversibly compromise the typical business equilibrium and its survival. The intermediate phase between the success and the crisis has been defined as a phase of decline.

The decline can be understood as a situation in which the company does not create value, but destroys it, its intensity is measured by the extent of such destruction in a certain period of time, annual or multi-year while the crisis can be defined as a further development of the decline and its degeneration. It manifests as a result of the significant losses in profitability and capital value, heavy and increasing repercussions on financial flows and loss of credit capacity and confidence from part of stakeholders in an irreversible way - if appropriate corrective actions are not taken - so generating a state of insolvency and, subsequently, of failure.

The *negative phases* that characterize the life of the company can be presented in different ways:

1. be cyclical: they take place according to a periodic rhythm, positive phases follow negative steps towards which the company must react otherwise there may be the risk of being eliminated from the competitive context. In general, the company is used to such an alternation and is aware of the need to prepare itself in advance to face such periods of failure. Following these cyclical negative phases, it can occur the cessation of the business activity or the return to normality;
2. be structural: the causes of failure remain hidden even for a long time, manifesting itself suddenly and unexpectedly. A negative structural phase can lead to the

company's decline. This decline may involve the adoption of a **turnaround strategies**, characterized by a set of interventions that are put in place during the decline phase, but before the conclusion of the crisis.

First of all, it is appropriate to differentiate the concept of **rehabilitation** from that of **turnaround**. The turnaround refers to the interventions that are put in place during the decline phase, but before the crisis is over or once the basic economic conditions have been re-established and the turnaround plan is the synthesis of choices often taken between management and sometimes some of stakeholders. The process of rehabilitation, on the other hand, takes place following the announcement of the crisis and it is generally characterized by the presence of symptoms of absolute emergency and the request for sacrifice to all the subjects involved. This phase entails, in general, a series of external subjects to the company with high skills on specific issues that support it in the phase of project development and implementation and then often interrupt their collaboration. Rehabilitation and turnaround (or development) can therefore be represented as the sequence of the following steps:

- rehabilitation emergency phase: the purpose is to guarantee the company's survival through the search for minimum cash flows to meet non-extendable needs; the focus must be placed on the search for activities that immediately succeed in contribute to this goal;
- stabilization phase in the rehabilitation: from financial to economic logic, trying to create the conditions for the company to return to profitability;
- phase of return to growth: once the profitability has been recovered, we are responsible for developing our market share and implementing the medium-long term strategic objectives.

A relevant element is generally represented by the role of shareholders and / or management in the recovery project, especially when there is overlapping between the roles. In fact, the support from the shareholder to the project also through the contribution of financial resources (own or third party new shareholders) consistent with the efforts required of the other company interlocutors, represents often a decisive element for the start of the consolidation. The content of the proposal to be negotiated with the stakeholders is generally identifiable according to the type of interlocutor.

With reference to banks, as financial institution, the proposal may include some or all of the following elements:

- *“standstill agreement or moratorium agreement”*: it consists of an agreement with the banking system but not to request the payment of overdue loans or to start actions aimed at the forced recovery of credit. It generally has a short duration (about six months) and is aimed at ensuring business continuity in formal notice of the definition of the rehabilitation project;
- *“debt consolidation”*: it regards of redefining the maturities of medium / long-term loans and / or converting short-term lines into medium-long. There is a frequent demand for a "grace period" of even two or three years in which only the interest to service the rescheduled debt is paid, on the basis of sustainable economic conditions for the plan;
- *“disbursement of new finance”*: the success of a recovery project that presupposes business continuity is in general accompanied by the request to the banking system to provide new credit lines, in addition to those existing at the date of preparation of the project, both in the form of new self-liquidating lines and in the form of new medium-long term loans. This aspect represents in general the greater complexity of rehabilitation projects, as credit institutions collide with two types of problems: the increase in their exposure to a company in crisis and chiefly the problems related to aspects of a legal nature deriving from the application of the bankruptcy law;
- *“conversion of payables into capital or hybrid instruments”*: sometimes the restructuring plan is based on the replacement of the credit position in that of own assets through the request for conversion of bank loans into capital or participatory financial instruments (this situation is generally feasible, in compliance with banking regulations on the acquisition of shareholdings in industrial companies, in the event that the bank interlocutor deems it appropriate to acquire a shareholding of the original credit position);
- *“increase in capital and / or search for new capital partners”*: in this case, the action of the banking system or shareholders may be required, to confer new financial resources in the company to support the rehabilitation project or the research of

shareholders available to replace, totally or partially the current ones, acquiring control or shareholdings in the company involved in the reorganization.

2.3 Turnaround strategies

The turnaround strategy decisions are significantly influenced by the complex interaction of the ownership organization, corporate governance and the lending institutions that monitor the firms in decline. This choice is temporary upon a series of factors and is primarily influenced by the firm's major stakeholders such as managers, owners and lenders.

Turnaround strategies are not relevant only to severely distressed firms but they are equally applicable to firms suffering from poor performance and to those aiming to achieve improved financial or competitive performance.

To assess the company status and to measure its propensity to turnaround it is widely used the earnings (or profit after tax) level, helpful for comparisons that can be made over time to highlight significant improvement or deterioration in financial performance. Another, perhaps the most used in professional practice, is the “leverage” which tells us exactly what happens in the relationship between indebtedness and equity (often, in fact, this index is also called "debt ratio"). This relationship can take on various values: if the leverage is equal to 1, it means that the company has no debts because all the loans are represented by their own capital, if the leverage assumes a value between 1 and 2, it means that equity is greater than debt. This is a fairly normal situation, as the company is structurally in debt. When, on the other hand, the leverage assumes a value greater than 2, then it means that the debts are greater than the equity capital and therefore the financial situation could be compromised because the company is "undercapitalized". There is no a perfect financial structure, nor a perfect relationship between equity and indebtedness, even if it is certainly better to have a leverage close to 1 rather than to 2. Nevertheless, there are many companies that operate very well on the market, which are economically healthy and that have a ratio of debt much greater than 2 and for this this relationship between equity and indebtedness depends from the type of activities that take place. Generally, the “balance sheet indices” also play an extremely important role in the management of a company since they serve to assess and "diagnose" the financial, patrimonial and economic situation of a company, these are: return

on sales (ROS²), return on asset or investment (ROA/ROI³), and return on equity (ROE⁴). The values of these indicators for which it is necessary to draw attention (which involve a probable turnaround actions) include: “average pretax return on investment (ROI) below 10% for two years, four or more years’ decline in ROI to below 5%, ROA in bottom 25% of industry ranking for two years, negative post-tax return on sales (ROS) for a minimum of one year, and successive increase in ROI and ROS for at least two years followed by absolute decline in both ROI and ROS for at least two years, the rate of decline greater than that of industry average. ROA measures how effectively management operate the business and how productively assets are employed, as it is a product of ROS (net profit margin) and asset turnover, ROA is distorted by variations in net assets computation. In other words, varying depreciation policies or greater prudence in writing down assets, during the turnaround period to reflect permanent diminution in assets, affects ROA. On the other hand, ROS alone is insufficient to evaluate firm performance as firms operating in a low margin, high turnover business may have good profits due to the productive employment of firm assets. Next, ROE, as measured by net income over shareholders' equity, is also subject to variations in firms' capital structure and financial risk”⁵. However, as financial gearing increases, the probability and costs of bankruptcy also increase, hence ROE's comparative value is potentially undermined by variations in firms' financial gearing and risk level. Others two ratios popularly tracked by analysts are earnings per share (EPS) and the price-earnings (P/E) ratio. “EPS is measured by the ratio of profit after tax, minority interest and preference dividend to the average number of shares in the year, while P/E ratio provides an indication of market’s perception of firms’ growth and profit opportunities as well as the risk attached to them”⁶. As P/E ratio is made up of market price per share over EPS, P/E ratio is open to potential distortions caused by stock market anomalies.

The incidence of debt restructuring is not suitable as a criterion for capturing firm performance decline for two reasons: as the first, since only highly geared firms tend to require a debt restructuring, lowly geared firms which tend not to restructure their debt may

² Return on Sales = Operating Profit / Net Sales

³ Return on Assets = (Net Income + Interest Expense) / Average Total Assets. ROI = (Gain from Investment – Investment Cost) / Investment Cost

⁴ Return on Equity = Net Income / Shareholders’ Equity

⁵ “corporate restructuring and turnaround: an exploratory study of the determinants and effectiveness of corporate restructuring strategies by troubled UK firms”, by Chee Chuen Lai

⁶ Article: “Stock Market Volatility Edited by Greg N. Gregoriou SUNY Plattsburgh, New York, U. S. A.

be defined as not experiencing performance decline; as the second, high gearing is observed to be a cause of decline, it may not necessarily be the key factor driving for a performance in downhill.

In response, it is reported a range and a variety of restructuring measures.

2.3.1 Managerial restructuring

Top management is widely cited as a prerequisite for the success of turnarounds. Sometimes it is necessary to change the habits and establish a hierarchy of work positions, therefore managers can modify the organizational structure, with substitutions or removals or with the design of new models of horizontal / vertical communication.

2.3.2 Operational restructuring

There are two stages overlapped that are: the efficiency / operating turnaround stage based on cost and asset reduction and the entrepreneurial / strategic stage based on product / market refocusing. The efficiency / operating turnaround stage aims to stabilize operations and restore profitability by pursuing strict cost and operating asset reductions. The entrepreneurial / strategic stage aims to achieve long term growth through restructuring the firm's strategic asset portfolio. As the core of corporate rescues, the purpose is to improve efficiency and revenues by reducing overall costs by exploiting economies of scale in a timely manner. This specifically entails cutting direct costs and overhead, including headcounts and interest charges and may be sufficient where the firm is weak operationally but not yet in distress.

2.3.3 Asset restructuring

“The restructuring of assets is the process of buying or selling the assets of a company that includes more than half of them. Usually it is a one-time expense that must be financed by any company at the time of the restructuring, which could be implemented due to a number

of reasons including, aiming the organization to become more competitive, survive successfully and emerge strongly from the existing hostile economic environment, or to position the company towards a new direction.”⁷

So, a restructuring of the strategic assets covers: “rearranging of the company into self-contained Strategic Business Units, selling the lines of businesses not suitable with the core but acquiring companies that reinforce it; ceasing non- promising products; and forming strategic alliances, joint ventures and licensing agreements”⁸. In addition, distressed firms, may have the option of merging with other firms, being taken over in a hostile bid or being bought-out by its own management (MBO's). This suggest a two-stage turnaround strategy: “asset divestment and asset investment”.

2.3.3.1 Asset divestment

The divestment activity represents the final moment of overall intervention cycle as well as one of the most important and it occurs through a profitable sale of the financial participation. In this phase, the operator focuses the activity on two types of goals:

1. enhance in the best way all the drivers of value developed during the investment period in order to sell at best;
2. return the liquidity to the subscribers of the shares of the fund, realizing a capital gain such as to meet the expectations of the same and remunerate the risk borne.

Establishing the time of disinvestment is not easily determinable a priori, since it depends on the performance of the investee in various aspects. However, investors try to plan this phase from the moment the holding is acquired, considering the greater or less possibility of way-out as a highly critical element in the evaluation phase. Usually the moment considered suitable is the one where the company has reached an adequate level of development by increasing the value of the participation, or when the company is in a difficult condition and has matured the idea that not even the presence of an institutional partner can be a cause for help in overcoming the critical situation.

⁷ “What is Asset Restructuring? article “Toshiba announces restructuring” WallStreetMojo 25th April 2017

⁸ “Corporate Turn Around Strategies By Financially Distressed Companies Quoted At The Nairobi Securities Exchange”, John Mbogo, Gabriel Waweru

Divestment can take the form of sell-off, management buyout, spinoff / demerger, equity carve-out and sale and leaseback.

1. Sell-offs: it means the sale of securities or part of other investment assets of a company (normally a subsidiary company) during a period of falling prices with the aim of avoiding greater capital losses. Voluntary sell-offs are in consolidated way shown to be related to efficiency improvements in the new sold-off entity and generate significantly positive effects on selling and buying company's stocks.
2. Restructuring by way of Management buy-outs (MBOs) is posited as suitable for increasing firm efficiency and refocusing to core business for the bought-out entity in order to improve in cash and credit control systems and to move into new product areas which had previously been difficult to achieve.
3. A spin-off is a company born from one branch of another, with respect to which, it maintains a solid link in terms of skills and activities carried out, as well as affinity for the sector, the target and the technology used and developed. The idea behind a spin-off company in practice is to give life to a new reality, capitalizing the know-how of the parent company, to give life to a new activity. Depending on the type of parent company and spin-off, there are entrepreneurial spin-offs (venture or corporate spin-off, i.e. direct issuance of another existing company) or academic / university spin-offs (companies born from the base of research results in universities or public research centers, to allow the direct transfer of knowledge and innovation to the productive fabric). The gains can be attributed to elimination of diseconomies of scale among dissimilar operating units, contracting flexibility or efficiency, tax and regulatory advantages and / or managerial efficiency.
4. Equity carve-out announcements a situation where a portion of a wholly-owned subsidiary's stock is offered for sale to the public, are associated with a positive increase in shareholder wealth. This is often attributed to changes in asset management, better information dissemination of subsidiary performance, better market valuation of subsidiary's assets, changes in managerial incentive contracts and ease of acquisition of the subsidiary by another firm.

5. Firms facing decline in performance may resort to sale and lease, in order to raise cash whilst retaining the use of key assets via long term leasing contracts. Properties, plant and machinery and cars are popular items for sale and leaseback arrangements to tide over troubled times. In this form of divestment, although the legal ownership of the asset rests with the lessor, the lessee retains the economic use and benefit of the asset through paying agreed rental payments for a specific period (lease period), at the end of which the lessee may have the option of repurchasing the asset for a defined sum.

The choice of the method is strongly linked: to the type of participation (minority or majority), to the structural factors related to the companies and to the results achieved, to the configuration of the sector in which it operates and the trend of the disinvestment markets as well as other conditioning elements, such as the economic situation in which we are located. Furthermore, the investor's divestment approach is characterized by aspects like the ability to evaluate technologies and people, to do business and to make interpersonal contacts. Where the firm is in distress and / or where strategic health is weak e. g. when the capacity exceeds long term potential revenue or assets are in declining, the asset reduction is imperative for recovery.

2.3.3.2 Asset investment

In general, asset investments are feasible only for firms with strong financial health and can be implemented only after corporate survival is assured. Asset investment covers operational and strategic investments, it is associated with efficiency / productivity improvement and hence firms may upgrade their production facilities through building new plants and equipment or automating existing processes. In this case there is a strict financial control in operation during the period of performance decline, in fact only capital expenditure of the highest justification (e. g. central to survival in product / markets) may be approved. Strategically, firms facing performance decline may seek to acquire assets that fit their core businesses with the objective to refocus from unprofitable or unrelated business to a profitable core with long term potential profit. This stage is crucial for recovery by firms with ill-suited strategy or with mature or declining product / markets. The acquisition is suggested as the most commonly used turnaround strategy for stagnant firms i.e. those with poor financial performance but not yet in crisis and in addition it is quick to implement.

2.3.4 Financial restructuring

Financial restructuring is a key element of the corporate restructuring framework and consists primarily of re-elaborated version of the company's capital structure to “soften” the pressure on debt interest and repayments, using cash maneuvers in order to amortize loans granted. It is divided into two strategies: based on equity and based on debt.

In the case of the equity-based strategy, large companies respond to these difficulties through rapid and large dividend cuts or omissions and issues of equity. This is a movement that make reactions quickly in order to heal and reverse the decline for repaying the banks to cover the debts. Bankrupt companies are also believed to be more likely to raise equity funds (through stock issues) than firms in difficulty due to the pressure from creditors interested in securing of their loans.

Debt-based strategies, on the other hand, consist in avoiding financial distress or solving an existing financial problem through the "transition" from the current debt towards the formulation of a new covenant, with the following characteristics:

- Increase / decrease in interest costs and reduction in principal, are common in debt refinancing, including increases in rates of borrowing to the distressed firm (simply because the risks of failure and default, have increased). Where the principals are reduced or loans cancelled, the distressed firm may be deemed in tax law, to receive a taxable income. However, insolvent firms can obtain tax relief if such taxable income arises from a formal debt restructuring. The amount that may be excluded from income is the difference between the old and new debt amounts.
- Extension of loan or credit facilities by bank creditors includes extension of the maturity of loans (e. g. conversion of short term overdraft to longer term loans), provision of additional finance and conversion from uncommitted to committed funding.
- Debt-equity swap i.e. converting debt to equity, including conversion to preferred shares / convertible debt, it is common in private and public debt restructuring as a means of relieving the distressed firm's debt burden.
- Changes in covenants arise when lenders require increased control over the distressed firm, mainly in the form of non-financial covenants such as dividend and capital

spending restrictions, they are also aimed at conserving the firm's asset base. In terms of financial covenant like minimum net worth, existing ones are often relaxed to avoid their continuous breach while addition of new ones are unusual.

- Increase in the security cover is aimed at inducing banks to extend and / or increase credits sufficient for the company to continue in business. Unsecured creditors have always been incensed by such rescue attempts which may leave them with nothing if the rescue fails, as banks will have an early charge over all assets.

2.3.5 Capital reconstruction

Financial restructuring, especially involving debt-equity swap, would normally be accompanied by a capital reduction which results in the dilution of the equity held by existing shareholders. The objective of this other form of financial restructuring is to enable debt-holders to own a major part of the restructured firm and to eliminate negative reserves. Capital reduction would typically take the form of reducing the nominal value of stocks, by dividing it into new ones and deferred shares and subsequently cancelling. Firms involved in capital reconstruction schemes frequently claim the reparation of the balance sheet to pay dividends as their main purpose for this exercise.

Chapter 3

The institutional investors

3.1 Definition and characteristics

The **institutional investors** operate directly and are specialized financial bodies that manage savings or assets held on behalf of investors on the basis of a certain maturity and with an acceptable level of risk with the goal to maximize the expected return.

The activities revolve around:

- wealth (or asset) management, that is, the process by which the amounts collected by institutional investors are invested in the financial markets,
- savings management which includes every activity related to forecasting and tracking savings.

So, their employment activity is oriented to the financial market and the economic characteristics are:

1. The institutional investor generally has a *duty of return* towards the saver, i.e. it manages, almost always on an explicit mandate, a sum to obtain a determined result that will derive from the operations carried out by the fund manager. The financial intermediary has, on the other hand, the obligation to repay to the investor (paying amounts plus interest).
2. The institutional investor is specialized in the construction of financial portfolios, i.e. in the process of evaluating and selecting tradable securities whose combination is aimed at exploiting the advantages of diversification to ensure not only the coverage of risk but also the return.
3. Portfolio management can be carried out collectively or individually: in the first case, the intermediary, in addition to selecting securities on behalf of customers, makes a pooling of funds of the individual investors to take advantage of the economic

benefits associated with the diversification of the portfolio and to reduce or eliminate the risk. In the second case, the investor delegates to the intermediary the selection and trading of securities that compose the portfolio, within a mandate that keeps the individual investor's assets separate from all other assets managed.

4. Portfolio management can also be fulfilled because of a real brokerage activity, as in the case of life insurance companies that aim to cover risks related to human life. Even if this activity is the result of real financial intermediation, insurance companies are always included in the category of institutional investors.

In order to participate in strategic choices and play an active role within the company, the investors require managerial roles or a seat on the Board of Directors (since their remuneration of the invested capital is related to the performance of the company's management, both successes and failures).

In general, it can be said that the good outcome of the operation is determined by the investor's ability to contribute to creating in the company a steady attitude to generate cash flows that offer a fair return on the total capital invested; this translates into the ability of the company to create value, thus generating, in most cases, wealth also for the entire economic system and entrepreneurial of the country.

It is argued that institutional investors invest more easily in countries with greater legal protection for shareholders and with higher levels of economic and financial development and that the presence of the investors in the capital risk is in many cases due to improved governance and transparency in those more developed markets, one reason is that the developing economies can increase their foreign investment portfolio by improving corporate governance.

Once the company in which to invest has been selected and after having made the deal, the investor generally takes part in the strategic choices of the company, intervening on the most significant investment decisions and on those can modify the combination among product, market and technology but it often leaves the entrepreneur full autonomy in day-to-day operational management.

The availability / concession of the capital of the company to an institutional investor therefore determines a series of important changes: to achieve its target the investor will

move in the direction that increases transparency and quality in the communication of the company to professionalize the management and organization, will try to introduce or evolve systems of planning and monitoring of company results through budgeting and management control systems, to carry out a major audit of the financial statements, this whole things to increase the performance of the company.

Consequently, it can be noted that in addition to economic and financial advantages, the intervention of an institutional investor also brings *non-financial benefits*, such as for instance:

- the push and contribution to the realization of a more professional management also thanks to the greater ability to attract capable and expert managers,
- the design and pursuit of a business development strategy, exploiting the opportunities for external growth through acquisitions, mergers, joint ventures,
- greater functionality of the company structure, which also facilitates the possible liquidation of members who are no longer interested in participating in the company, but without using too much company resources,
- an increase in the bargaining power and an improvement in the image of the company with respect to the banks and the financial market thanks to the investor's presence as a major shareholder, with the consequent possible increase in the company's financial reliability and facilitation in funding,
- the company will be able to obtain advantages not only from the relationship with the lender, but also from the network of which it is part.

The needs and problems of financing the development of the company change and evolve according to the stage of the life cycle in which it is located: all other strategic, organizational and managerial issues assume a different profile depending on whether the company has just been born and with few people and it is in a growing market or if it is a consolidated company that has been operating for some time in a stagnant sector, with mature products.

3.2 Methods of intervention

The following phase of the investment process consists in the evaluation of the entrepreneurial profile of the target company. The profile of the entrepreneur and / or the management of the company is assessed through a careful analysis aimed at ascertaining the reliability and seriousness of the project and those who want to develop it, as well as its network of contacts, the acquired know-how and the reputation they enjoy in the industry. If the assessment of the entrepreneurial profile satisfies the investor, it moves on to an in-depth analysis of the company. Based on a careful reading of the business plan, the attention is focused on financial returns, on the critical success factors of the initiative, on entry barriers, on the possibilities of future disinvestment of participation and anything else considered important for the aim of the investment. The business plan is crucial for the investment decision made by the operator because it shows the strengths and weaknesses of the investment, the past and present characteristics and the future projections.

If the analysis is successful, the company is evaluated and the price is defined, so then it is possible to proceed to the definition of the legal aspects and towards the drafting of the contract; first with a letter of intent and then with the actual signing of the investment contract with the acquisition of the stake. The role of the investor, therefore, does not end with the definition of the contribution of risk capital, but accompanies the firm until the end of the operation (when the disinvestment of stocks will take place). It is the monitoring phase that specifically characterizes the role of the institutional investor in risk capital and its role in the creation of value.

Institutional investor, however, does not replace the entrepreneur and does not normally take part in the operational decisions but assumes a relevant role in strategic decisions. Depending on various variables, including the type and degree of risk of the transaction, the company's problems and the type of investor, there are two different monitoring approaches:

- the hands-on approach: in which the institutional investor is present on the Board of Directors with a right of veto on decisions to strategic purposes, it requires a monthly report on company results, it appoints its trusted managers in key roles, beyond a requires budget certification and the use of advanced management control systems;

- the hands-off approach: where the investor, although still present on the Board of Directors takes a less active role in participating in company decisions, delegating strategic decisions to company management and requiring only periodic reports for investment monitoring.

In the event of failure of the initiative, the shareholding is released when the operator matures the belief that the situation of crisis cannot be conveniently remedied. The disinvestment is a particularly critical phase of the process either for the investor, since from the outcome is determined the goodness of the of the transaction either for the investee company, which must have reached the maturity necessary to continue without the support of a qualified operator.

Let's now examine the various phases that compose the investment process through which the institutional investor participates in the company: it is natural that companies require different forms of financing among them and specific according to the position taken in the classic scheme of the life cycle of companies which is divided into four successive key moments: birth or early stage, growth and development, maturity and decline.

Birth can be divided into three sub-phases:

- I. the “embryonic phase” or “seed stage” refers to the conception of the business idea, the consequent study and the first experimentation of the project. The financial requirements are not very high and are mainly originated from investments aimed at developing the necessary project for the new product or service and to demonstrate its technical validity. So they are normally investments in research and development, and are as much higher as greater is the technical complexity of the new product and as longer the experimentation process extends. In this phase, it is therefore particularly difficult to obtain debt capital because of the scarce assets to be offered as collateral;
- II. after having conducted technological researches and market studies, it moves on to the “start-up phase” of the production activity, even if we do not have total certainty of the commercial validity of the product or service. The financial requirement is greater than the previous phase of experimentation and the problems are more critical as it is necessary to provide for the realization of what is necessary to make or sell

the product; in this phase the cash flows are negative since the monetary exits that are sustained are often substantial and they are opposed to scarce revenue;

- III. the “first phase” of development or first stage is characterized by significant uncertainties regarding the commercial validity of the product and by high investments in tangible and intangible assets necessary to start production and enter the market. In this moment, the needs are both in working capital and in investments to support the subsequent development, therefore the financial requirement is substantial due to the enlargement of the production capacity with high risk (and high profitability in case the entrepreneurial initiative takes off and consolidates successfully over time).

The first intervention is aimed at entrepreneurs and / or companies, which require the help of an institutional investor to start a new business activity; these are looking not only for financial resources but, especially for a valid support of knowledge and experience useful for the implementation of the business idea and for the beginning of the company. In this case, in fact, the contribution in terms of entrepreneurial and managerial skills takes a prevailing role compared to the mere possibility of having funds available that alone cannot obtain either for high costs either for other difficulties. At this stage, it is necessary to have a careful and detailed knowledge of the market and of the potential competitive of the company.

Growth and development (or expansion), conditions increasingly necessary for the survival of the company, can be divided into two phases:

- I. the accelerated growth, where after having studied and approved the validity of the product-market combination, there is the development of production and sales which leads to a commercial growth where the management exploits the resources at their maximum level;
- II. the phase of consolidation of the development, that occurs after a detailed analysis of the opportunities offered to the company by means of: the launch of new products, in the case of diversification strategy, the growth of new production facilities, cases of internal growth or international expansion into new markets or purchase of other existing and operating companies (in the case of external growth). In general, the

financial needs are elevated, but the risk is lower because the company's forecasting capabilities for the new business have improved and there is less uncertainty in future scenarios.

In the maturity stage, the growth of the revenues is usually observed up to a maximum level, hence its stabilization over a certain period. Once the maximum development value is reached, the company tries to maintain its position through a price war or by renewing the development process through the product or differentiation. The problem of finding the financial resources arises, even if in a less pressing way since the cash flows are generally positive, thanks to: the experience gained, the optimization of the working capital policy and the increase in the rate of turnover of the capital invested because of the more rational exploitation of production capacity. Moreover, given the stabilization of cash flows, the consolidation of the activity and the consequent reduction of risk, the company can choose different alternatives to find the necessary funds, both as risk capital and debt, depending on its financial target and structure.

Finally, the last phase is the decline or the fall in operating profitability, namely contraction of financial resources and increased risk by investors. The opportunity to relaunch the company's development is linked to the need to revitalize the business or replace it with restructuring and / or business development operations; the financial needs to be handled to the generation of new business sectors are huge and must be accompanied by specific and high professional skills.

By analyzing the specific sub-phases of growth, in the second stage financing the required capital and the risks borne by institutional investors are not high. The requested funding, not as high as in the initial phase because the company also uses its own capital deriving from self-financing, is used for the accelerated growth of the company that has already had the market's consent, but which has still to develop in terms of size.

In third stage financing the investor plays an important role, as the company invests a lot of capital to increase market share and consolidate the development and receives from the investor also a fundamental consulting about the strategy to be adopted.

Moving on to the stage of maturity, the bridge financing – interim loans- is the form of financing used by the company when it is close to listing on the stock exchange or when it must be sold to third parties. In this case, the investor provides substantial funds used to

finance the transition from one stage to the next and must also have a thorough knowledge of the financial and securities market.

In the expansion phase and especially in the maturity phase, there is often a restructuring of the production and / or organizational structures, as well as a reorganization of the shareholding, where the institutional investor temporarily replaces one or more outgoing shareholders, thus generating replacement capital.

In fact, it could occur that in mature or declining business some shareholders of companies not listed on stock markets are no longer satisfied with the strategic orientation of the company or are willing to disinvest and tend to get slower the business development. In these cases, the replacement of these shareholders with the institutional investor favors the relaunch of a new development plan, avoiding the exit of the shareholder impoverishes and weakens financially the company. Therefore, there is no substantial change in the company since the share capital remains unchanged, but there is a replacement by the investor who temporarily acquires the shares of the outgoing shareholders, thus bringing capital but above all the skills and a valid help to reformulate the ownership structure.

To conclude, in the event that the company is in crisis or in the phase of decline of its life cycle, the institutional investor replaces those who are no longer able to continue the business, financing the operations of renewal, relaunch and corporate restructuring (turnaround financing). By temporarily assuming a majority stake for this purpose, the investor directly manages all the phases related to the restructuring and the consequent relaunch of the company, taking all the fundamental decisions necessary for the its survival. In these cases, the company has exhausted its vitality, cannot resist the challenges posed on the market and it needs to be redesigned, identifying first of all the causes of this negative situation, the strengths and the improvement of the business and then creating the basis for redirecting the company's activities, carrying out and implementing a corporate restructuring plan.

3.3 Classification

In the category of institutional investors belong, in principle:

- insurance companies;
- banks;
- asset management companies (AMCs);
- credit institutions or other professional financial operators, performing on their own account or within the scope of a management mandate on behalf of their clients, including private clients;
- collective investment organisms, such as investment funds: securities, real estate, hedge funds, alternative investment funds (AIFs), mutual funds or pension funds and sovereign wealth funds;
- local public bodies;
- financial holding companies, when they have a real substance, a structure and a business of their own distinct from those of its shareholders and hold significant financial interests;
- the “family holdings”, these are companies in which a family or a branch of a family holds significant financial interests.

In general, within the investor framework, also two large groups of institutional investors can be distinguished by classifying them: “as pressure sensitive”, including banking and insurance companies that maintain or can maintain business with companies in which they invest (for example, credit transactions, financial management, consulting services) or as “pressure resistant or pressure insensitive”, institutions such as pension and investment funds that do not have potential business links with the companies in which they invest. In fact, institutional investors can have relationships with the companies in which they have invested and their objectives can be influenced or limited by business ties with management. These business ties can create potential conflicts of interest, since the managers can leverage and capitalize on business relationships by co-opting institutional investors and penalizing them if they oppose managerial preferences. In order to maintain business ties or preserve potential future business opportunities, the institutional owners may defer to the interests of managers and so to be labeled pressure sensitive, they include insurance companies, banks, non-bank trusts. Alternatively, institutional owners without business ties will be less subject to conflicts of interest and less receptive to managerial influence, pressure resistant

institutional investors do not generally have commercial relationships and direct business with companies in which they invest.

In addition, investors classified as pressure sensitive give greater support to managerial decisions or leave their shares in the face of disagreements with management in order to safeguard their business relationships with companies, these called also resistant investors could control more actively the management actions as they are not influenced by potential business relationships.

A third classification of the institutional investors concerns the method of raising funds.

Following this criterion, investors operating in risk capital are divided into:

- captive investors: they are directly issued by other financial or banking institutions and sometimes also by industrial institutions. They have as main source of capital the parent company or other affiliated companies so they collect resources from their funds and invest them by diversifying their portfolios. The strategies and investment choices derive from the parent company and consequently diversification is carried out above all on the basis of the group's strategic choices, rather than with the objectives of seeking investment in high-growth firms. Furthermore, they are unlikely to intervene in the initial phase of the company given that the presence of a high risk and low capital guarantees collide with the nature almost bank-like of this type of investor; captive investors are in fact widespread especially in less market-oriented economic systems and so more banking oriented;
- semi-captive investors: they are an intermediate form as they collect financial resources both through the market and from the financial or industrial group of which they are part;
- independent or genuine investors: they collect resources directly on the capital market and the management team is independent and autonomous in financing decisions. They offer brokerage services to a variety of investors and the activity of independent investors is mainly linked to the results of the investment and as a result they have more incentives to pursue high profits from their investments. In recent years, they have developed, contributing to increase investment in high tech sectors and companies through the resources collected through closed-end investment funds.

The latter type of investor draws attention to the fact that, in general, these kind of institutional investors include mutual funds, insurance companies, pension funds, endowment funds and banks.

3.3.1 Mutual funds

They are, in most cases, independent investors and investment close funds, in which the Asset Management Companies (AMCs) establishes from the beginning the duration and the amount of the collection. Potential subscribers can enter the fund at an early stage through the purchase of a stake and the fund closes when all units have been fully subscribed. These resources are used by the AMCs to buy securities of companies often not listed on the stock exchange but with significant growth opportunities, depending on the geographical reference market can be distinguished regional and international funds. Unlike open funds, the capital is fixed for the entire duration of the fund and no opportunity is given to redeem the units subscribed before the expiry of the fund.

In the event that the owner of the share wants to liquidate his / her investment in advance, it could only sell it to third parties since it is not repayable by the AMC before that the fund expires. This characteristic makes the fund a particularly suitable instrument for medium-long term investments that have the objective of obtaining excellent returns. On the other hand, open-ended mutual funds are also known as variable capital funds, as their assets vary continuously in terms of composition and value depending on the units that have been purchased or sold on the market by the fund managers. As opposed to closed-end funds, this type is specialized in investing in securities of listed companies as they can easily be sold off since this type of fund allows subscribers to enter and exit the fund at any time they want.

In general, investment fund shares may be purchased by private individuals or other institutional investors, in the latter case pooled management is carried out by companies specialized in a type of investment and which do not intend entirely undergo the risk of the administered assets. In USA, the most widespread form is the open fund and the mutual fund managers or investment companies can have different behaviors, more based on liquidity and speed of disinvestment of the investment, since investors are entitled to redeem their shares and receive their money as said at any time at the prevailing market price.

The performance of mutual fund managers is often assessed on a quarterly basis and the consequent turnover among managers is very high; this does not encourage long-term relationships between fund managers and the companies in which they invest.

3.3.2 Pension funds

In general, the pension system of a country is based on three pillars: a basic public level represented by compulsory pension coverage, a second complementary level with the voluntary adherence which a worker decides whether to maintain his / her severance pay accrued in the company or if invest in financial market and finally, a third level consisting of voluntary individual pension plan as life insurance plans (unit-linked⁹ and index-linked¹⁰ policies).

The pension funds were born for the purpose of guaranteeing the sustainability of public insurance, in fact, with the passing of the years, pension contributions will be insufficient to pledge a pension to all workers and therefore the nations are trying to induce them to join supplementary pensions and consequently to develop the world pension fund market.

Supplementary pensions are a form of savings aimed at maximizing their results over time, because they are flexible, being able to change the sums invested -according to their needs- and they are advantaged by tax breaks. This works according to the mechanism of capitalization: the amount paid is invested in the financial markets, and with the accumulated capital and the relative returns, at the end of the savings plan, one individual can obtain its supplementary pension. There exist two types of pension fund: “defined benefit pension funds (DB) and defined contribution pension fund (DC)”.

In a DB pension fund, the employee payments are periodically adjusted, also taking into account the return of the fund, in order to constitute a pre-determined amount of income based on service tenure, age and historical gains perceived over time, rather than depending directly on the returns (these are more common in the Anglo-Saxon countries). On the other hand, in the defined contribution (DC) pension plans, fixed contributions are paid by

⁹ Life insurance with a high financial content: diversify investments by choosing between various types of funds. The advantages of professional investment management are combined with those of traditional life insurance policies allowing for more dynamic investment management, redemption can take place at any time.

¹⁰ Close to the "unit linked" category, with performance connected to an underlying asset. More dynamic instruments of traditional policies and depend on the growth of the stock market to which they refer, the invested capital is generally guaranteed and in some cases a minimum return is obtained.

employers and employees and future retirement benefits depend on the investment returns and interest rates.

In the branch of DC pension funds, plan sponsors select the collection of available investment options, while each plan member is individually responsible for the asset allocation decision as well as the retirement consumption decision. The DB pension funds are particularly interesting vehicles to study the relation between size and performance, because pension fund inflows do not depend on performance, but on actuarial and demographic factors.

The challenge for DB pension funds is how to periodically update critical aspects of the pension deal, such as the contribution levels, strategic asset allocations, and the kind of inflation protection offered. These modifications are based on the financial situation of the pension fund, which compares the asset value with the projected value of liabilities. When estimating the financial situation, the board needs to decide on a few key input parameters such as the level of expected returns, interest and inflation rates, and the discount rate used to value the liability stream, as well as several actuarial indicators like life expectancies. Depending on the regulatory framework, these decisions either can be left at the full discretion of the pension funds, or they can be heavily restricted by regulation or public policy.

A larger pension fund does not make to transform its lower investment costs into higher net returns. Rather, there may be diseconomies of scale in pension fund performance, that are primarily apparent for funds investing in less liquid assets: smaller pension funds obtain higher total returns and especially higher market timing returns. The better market timing returns of smaller funds can be explained by two effects: first, smaller funds can be managed in a more flexible way that enables them to deviate further from their strategic asset allocation weights, second, even if smaller pension funds should rebalance to restore their strategic weights, such rebalancing has lower market impact. In Europe, pension funds are subject to prudential rules that vary widely from country to country. In this sector, in fact, adequate harmonization of the legislation between the various Member States of the Union has not yet taken place, with significant repercussions in terms of poor cross-border operations and, more generally, of efficiency and competitiveness of the system. This

heterogeneity of national disciplines therefore constitutes a limit to the development of private complementary social security, which is in fact not very widespread, especially in the European countries. In the UK, primary legislation, e.g. the Pensions Bill, and secondary legislation such as regulations, were drafted by the Department for Work and Pensions (DWP) and were subject to the Parliamentary approval process and The Pensions Regulator's (TPR) role was to give technical advice to the Department whilst legislation was drafted. The Department of Labor (DOL) developed a Qualified Default Investment Alternatives (QDIAs) regulation that provided guidance on selecting prudent default investments.

In Italy, it is the COVIP (Commissione di Vigilanza sui Fondi Pensione), the independent administrative authority, that has the task of supervising the proper functioning of the pension fund system to protect members and their savings for social security, working to protect the transparency of system and compliance with the law. The supplementary pension forms operate in the financial markets like other forms of investment, but the law dictates specific criteria and prudential limits to investments when they have pension purposes to which money managers must obligatorily abide. To the pension funds is applied the discipline of the controlled administration and of the compulsory administrative liquidation, with the exception of bankruptcy. According to bankruptcy law, employees are privileged creditors of the employer, for late retributions and for liquidation (there are no guarantees or reimbursements).

With regard to a pension fund within the company, or of category, do not boast particular rights that put them at the top of the list of creditors to be compensated.

In theory the advantages of the development of pension funds, for the financial system, can be summarized in the following points:

- diversification of the portfolio, which becomes more efficient due to lower information asymmetries,
- low portfolio turnover, with rapid marginal adjustments according to selected benchmarks,
- interest in venture capital activities,
- qualified contribution to the management of investee companies,
- possibility of making investments at a high risk / return rate,

- low risk of illiquidity due to the regularity of collection flows,
- medium-long investment horizon.

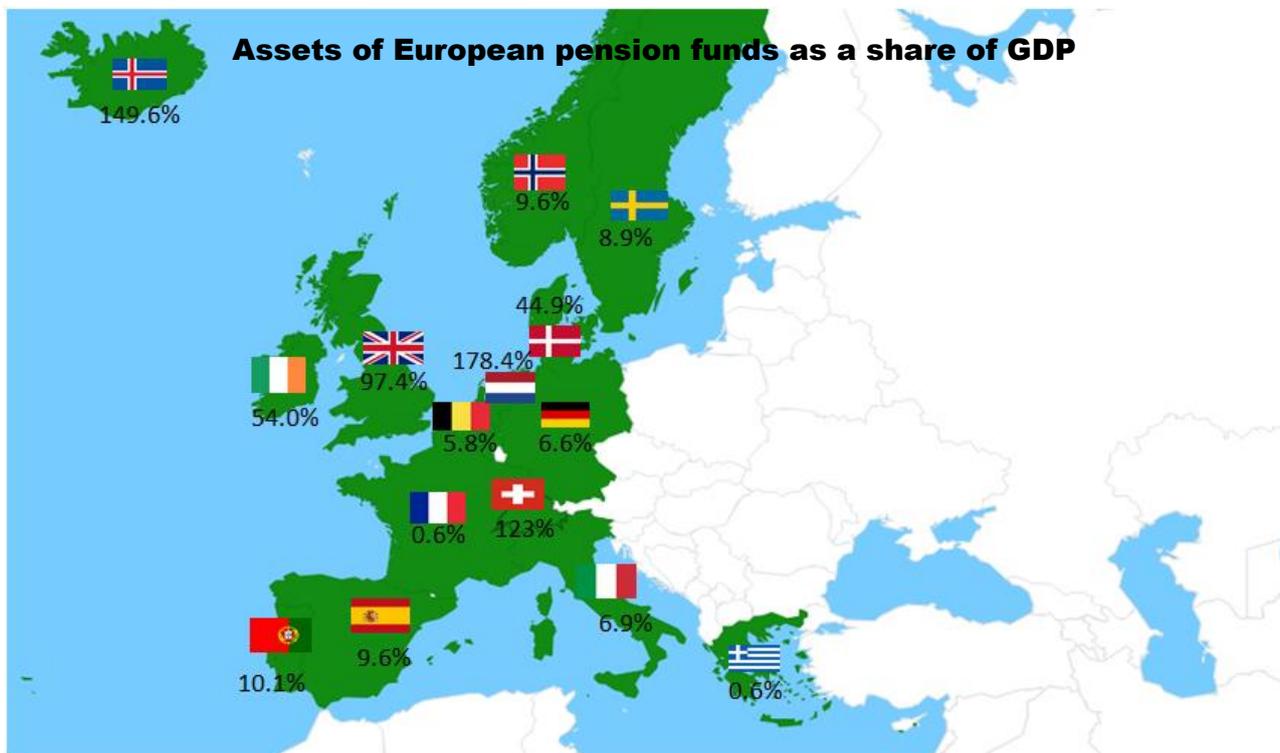


Figure 1: “Assets of European pension funds as a share of GDP”, 2015 source: StatistaGraph, OECD (graph made with GeoChart Map Generator).

The figure above shows the comparative size of the European retirement funds market. As it is showed in the Netherlands, Iceland and Switzerland the assets of the pension funds are worth nearly twice the GDP, whereas for example Italy the value of the assets is much smaller.

However, in the Northern Europe where the retirement system has been praised for years the adhesion in a pension fund is mandatory for every inhabitant and for these throughout the life the pension is built up automatically by participating in a branch-specific or nationwide pension scheme.

3.3.3 Sovereign wealth funds (SWFs)

The SWFs are defined as pools of assets held by a government of a sovereign state. These funds are the product of excess liquidity in the public sector, originating from government tax surpluses or official reserves held with central banks, “the definition of sovereign fund excludes, among other things, foreign currency reserve assets held by monetary authorities for the traditional balance of payments or monetary policy purposes, state-owned enterprises (SOEs) in the traditional sense, government-employee pension funds (funded by employee \ employer contributions), or assets managed for the benefit of individuals”¹¹.

In 2010, the SWFs were about 2.5 times bigger than hedge funds and their assets stood about US \$1.2 trillion above the asset under management of private equity funds and as a result, the SWFs are expected to gain more power in the global financial markets as they have become extremely wealthy institutional investors in less than one decade. What differentiates foreign exchange reserves from sovereign wealth funds is that the foreign exchange reserves are not wealth; they are massive sources of liquidity which are kept by the government to be transferred over a short period to protect the domestic economy from potential financial shocks: China, Japan, Taiwan and Russia hold the biggest reserves, hence these reserves, have a certain liability and are managed in the interest of the pensioners while the SWFs are more designed to serve the future generations.

The SWFs financial role is becoming more financially powerful government agents of the global financial system, in compare with the central banks. This is mainly due to the profit maximization investment strategy of these funds (in contrast with the conservative investment portfolio of the central bank’s foreign exchange reserves).

Some countries, in particular those of Southeast Asia, to avoid repeating the consequences of financial crises similar to that manifested in the late 90s, have conducted a policy aimed at accumulating large reserves of currency, thanks to the constant inflow of foreign capital and the fixed exchange rates, thus creating vehicles destined for the use of resources in higher-yield foreign financial assets, not considering Central Banks an appropriate body to carry out this task, in order to achieve higher returns with respect to their management. Over time, part of these reserves has been transferred to ad hoc investment vehicles, so giving rise

¹¹ www.swfinstitute.org/statistics-research/common-definitions/

to the non-commodity sovereign funds. Similarly, other countries, endowed with natural resources, have been able to accumulate ample foreign exchange reserves thanks to the constant rise in prices of raw materials such as oil and copper; currency reserves progressively merged into commodity-type SWFs.

Surplus revenues of those countries are primarily held in liquid assets like short term securities and foreign bank deposits which can be easily transferred to their country of origin at the time of any crisis while the foreign exchange reserves are held to support the national currency and to provide a source of financial assistance at the time of any imbalance in the commodity export incomes.

A distinction about the nature of the fund's main objective concerns the partition of sovereign wealth funds in stabilization funds and savings funds (or future generations funds). The formers are made up of states rich in non-renewable raw materials (typically oil and gas, but also copper and diamonds) in order to isolate public budgets from excessive price volatility. A rise in raw material prices allows exporting countries to increase their cash holdings, achieving major current account surpluses and increasing public spending; a subsequent decline in prices may have adverse effects generating a lower flow of wealth in the exporting country, which is reflected in fewer domestic or foreign investments. To limit the effects of commodity prices on public spending, the states may decide to set up particular investment vehicles (so the stabilization funds) by making financial resources flow in periods of rising prices and then releasing them in periods of decline. In this way, public spending could be considered isolated from excessive fluctuations in prices.

Although the stabilization funds prefer liquid investments, with short-term horizons and moderate risk profiles, the savings funds manage and allocate the wealth deriving from exhaustible resources (such as oil) for the benefit of future generations and instead they prefer investments with long-term time horizons and higher risk profiles.

Other types that are worth mentioning for a thorough classification are: reserve investment funds, strategic development sovereign wealth funds (SDSWFs) and the lasts -which we will describe- are pension reserve funds.

The constant aging of the population has in fact led many governments to set up public pension funds with similar goals of savings funds: these are the sovereign pension reserve funds (SPRFs), independent investment vehicles compared to national pension systems,

whose resources derive directly from fiscal transfers by the government and whose goal is to cope with future pension deficits. It should be stressed, however, that some of these funds have not yet provided pension benefits, similarly to savings funds in which the accumulated wealth is rarely distributed, but reinvested. Some of the largest SPRFs are: “the Australian Future Fund, the New Zealand Superannuation Fund, the Irish National Pension Reserve Fund and the Government Pension Fund Global”. It is also appropriate to distinguish the SPRFs from public pension funds that are part of the national social security reserve fund (SSRFs), whose objective is the same, but whose financial flows derive largely from the contributions of workers and employers and exceptionally, they enjoy tax transfers from the government. Typically, these funds are set up to jointly or separately achieve the following objectives: to isolate public budgets from excessive volatility of revenues, to help the monetary authorities to sterilize excess liquidity, to create savings for future generations, to use financial resources for development economic and social status of nations.

The sovereign funds of the SSRFs (namely public pension funds that are part of the national pension system like for example the Japan's Government Investment Fund) have specific social security liabilities and the consequent inclusion of the SPRFs such as the Norwegian Government Pension Fund's is not characterized by specific liabilities towards tax payers; while, with the limitation to social security liabilities, investment vehicles that frequently resort to bond issues either in domestic territory for sterilization purposes (China Investment Corporation) either in international scope to expand their collection of financial resources can also be included (Temasek Holding, Dubai World). This has led to some SWFs achieving a high level of leverage that has had repercussions from a domestic point of view. Among the non-commodity funds in this period, it stands out the establishment of some of the most important SPRFs belonging to the OECD area, such as the French Pension Reserve Fund in 2000 and the New Zealand Superannuation Fund in 2001 which corresponds to the same date of creation of the National Pension Irish Reserve Fund. If the focus is on Southeast Asia, the Korea Investment Corporation was established in 2005, through the transfer of \$ 17 billion of foreign currency reserves, in order to manage them with a greater risk appetite, while two years later the China Investment Corporation was set up, deputizing for the "aggressive" management of \$ 200 billion in excess foreign reserves.

3.3.3.1 Some points of comparison

With the aim of carrying out a comparative analysis, three are the particular investment vehicles to what are considered appropriate to compare sovereign funds: the private equity funds the public pension funds and the hedge funds (these latter are indeed common to every institutional investors, albeit with levels of different intensity).

An aspect they have in common with the sovereign funds, is the lack of specific regulation, since these can adhere to a non-binding code of conduct (what are the so-called “Principles of Santiago”), but they are not subject to specific provisions in terms of governance, of assets allocation, transparency or risk management. Moreover, there is no provision that prevent the use of derivative instruments or short sales for the techniques of portfolio management, nor there are any limitations with respect to the asset class in which to invest. The most similar institutional investors with SWFs are public pension funds, so much so that, one of their sub-categories (sovereign pension reserve funds) has been included in the adopted definition of sovereign wealth funds. Among the common characteristics of SWFs and public pension funds, it is worth mentioning, in addition to the high asset under management, also: the reporting of the fund's operations and the performance achieved by the government, the tendency to pursue medium-long term horizons, the growing diversification of the portfolio from a geographical point of view and the insertion of alternative asset classes within it.

The main differences that can be found between public pension funds (with particular reference to social security reserve funds) and sovereign wealth funds are as follows:

- while public pension funds have as their sole objective the financing of the future pension deficit, sovereign funds seem to have a plurality of objectives, including the protection of the domestic economy from fluctuations in the prices of raw materials and the investment of excess reserves to get higher returns.
- The funding arrangements are different given that the SWFs are mainly financed through government fiscal transfers or foreign currency reserves, while the social security reserve funds collect resources mainly derived from workers’ and employers’ contributions and minimally from government transfers.

- Despite the growing tendency to invest abroad, the social security reserve funds, especially in some countries, have a portfolio mainly consisting of domestic and conservative investments. Three of the main SSRFs invest mainly in domestic government bonds, unlike sovereign funds that tend to invest abroad.

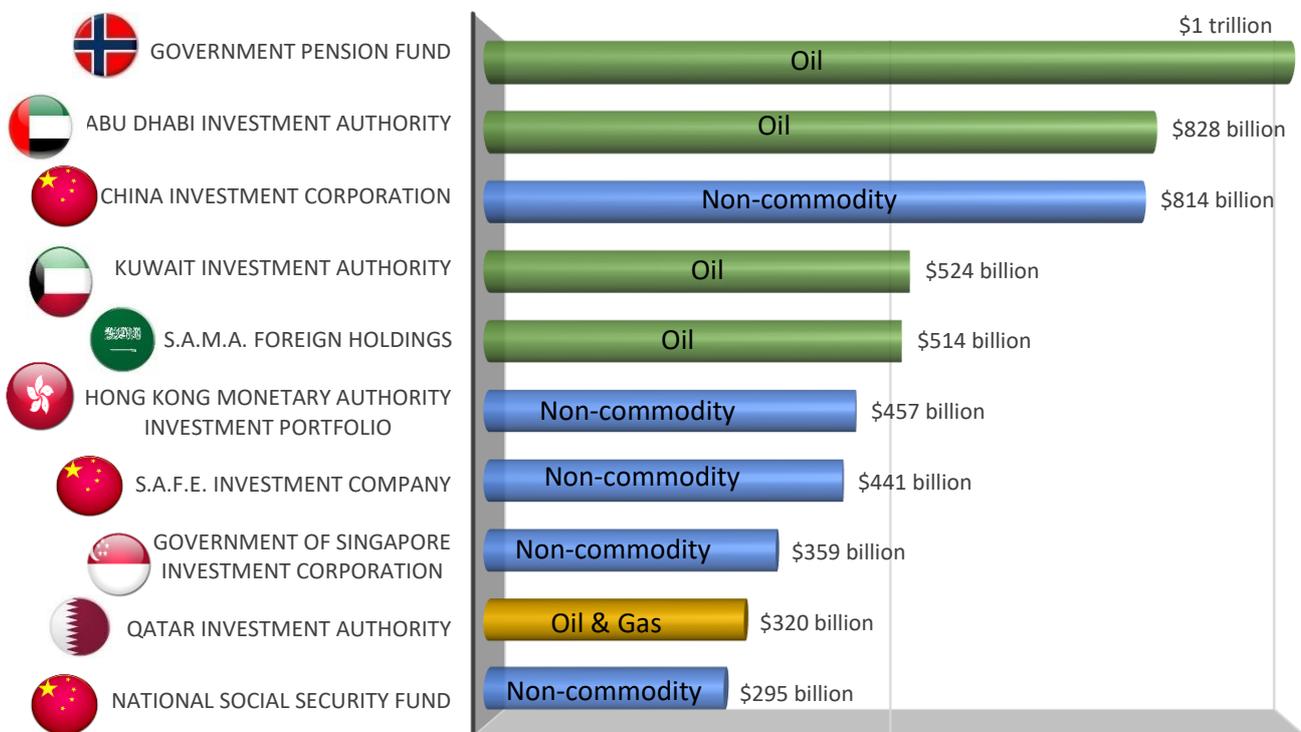
The process of establishing and managing sovereign wealth funds is very similar to mutual funds: the fund institution, typically the government, on the one hand, determines the medium-long term objectives of the fund, the investment mandate consistent with the maximum acceptable risk, the eventual pursuing of political-economic objectives and the provisions of the statute; on the other side appoints members who cover key positions within the management process of such investment vehicles.

From the asset allocation point of view, it is necessary to underline how longer periods of investment, is associated a greater risk tolerance. Therefore, it seems appropriate to expect that sovereign funds with a short-term investment horizon, typically the stabilization funds, have a substantial share of the portfolio invested in low-risk financial instruments, i.e. instruments of monetary market or bonds characterized by low duration and high rating, so able to face with unexpected and sudden cash outflows. Thus, the asset allocation of these funds would not be very different from the management of currency reserves by Central Banks. On the other hand, sovereign funds with a medium-long term time horizon, typically the funds of savings and SPRFs, but also the reserve investment corporations, they likely have a portfolio in which the equity component is over-weighted compared to the bond and there may be a significant portion of alternatives assets (private equity, hedge funds, real summer).

SWFs with greater risk tolerance could provide liquidity to the domestic financial system, with a view to recapitalizing the banking sector affected by the crisis. Therefore, a different geographical asset allocation could occur, which would coincide with a greater presence in the portfolio of equity securities issued by the same country in which the fund was set up; but the preference for domestic stocks in exogenous shock situations should not be confused with the preference for domestic securities deriving from the distortion known as "home bias".

Overall commodity funds appear to have a more prudent asset allocation than non-commodity funds, consistently with the logic of maximizing the portfolio by assuming by constraint a raw material, typically oil.

Unlike the US and European economies, Australia and New Zealand have been far more welcoming to SWFs, Asian SWFs and those from oil-exporting economies have substantial investments in these two economies in fact the SWFs of Singapore have more commercial assets in Australia than the Government of Australia.



Graph 2: “Largest SWFs by asset under management”, **Sept 2017**, source: “The Sovereign Wealth Fund Institute.”

3.3.4 Final considerations

The most important authority of institutional investor in the world consists of banks, which take part to various activities ranging from the acquisition of holdings to the granting of loans and investment services towards the privates and publics.

The pension funds represent those most suited to involve household savings to venture capital: in fact in countries where pension funds have known an established diffusion they have played an important role in the financing of it, even if generally they invest only a small percentage of their assets directly in venture capital; because they often lack the necessary skills to choose real investments. In fact, pension funds invest in risk capital indirectly through closed-end funds and venture capital companies, who possess the necessary abilities for a careful choice and for the development of financed investments. They, on the other hand, deal with investing in the various initiatives, following a strictly financial approach hence this creates a close link between pension funds, closed-end funds and venture capital companies.

In conclusion, each category of institutional investor may have different regulations governing their activities and have distinct objectives towards the client to be satisfied. So, each institutional investors have a proper trading behaviors and specific targets because of different horizons investment timeframes: mutual funds and pension funds are long-term institutional owners, while investment banks and private funds are short-term investors and unlike mutual funds and investment banks that frequently enter and leave the market, pension funds hold shares in specific companies for a longer period, until a decade.

Chapter 4

Asset classes and financial risks

4.1 Asset classes

The asset classes are subdivided as a general rule into:

1. Traditionals

➤ *equity securities*

The most representative title of risk capital more widespread is the stock. It represents the minimum unit of participation in the social capital of a public limited company. The shareholder becomes in effect a business member of the company that issued the security on the market, participating in the same way as the other shareholders and in proportion to the number of shares held, at the issuer's economic risk. Investors in equity securities are entitled to receive an annual dividend on the profits earned in the reference period that the partners' meeting will decide to distribute. The shareholders' meeting may in any case decide not to distribute any dividend.

➤ *debt securities*

By purchasing debt securities, you become lenders of the company or of the bodies that issued them and you are entitled to periodically receive the interest envisaged by the issuance regulation and at the expiry dates, to repay the principal. Interest may be commensurate with a fixed rate, with another market parameter (for example, Euribor, inflation, swap rate) or not be provided (zero-coupon bond). The investor must bear in mind that the effective amount of interest is continuously adjusted to market conditions through changes in the price of the securities. The return on a debt security will be close to the return on the incorporated security itself at the time of purchase only if the security is held by the investor until maturity.

➤ *liquidity instruments*

It indicates the immediate availability of cash. This concept indicates the ease with which a financial asset is traded on the market and therefore, availability with which investors can easily buy it and sell it for its constant presence on the market of buyers and sellers. They represent, therefore, the safe and stable part of the investment in which the percentage of risk is almost nothing compared, clearly with rather low earnings.

2. Alternatives

➤ *hedge funds*

➤ *commodity and raw materials*

➤ *real estate investments*

➤ *structured products*

➤ *derivatives (future, options, covered warrants, financial certificates, indexed bonds)*

➤ *commodities*

➤ *loans*

➤ *private equity*

➤ *private debt*

➤ *infrastructures*

Each asset class is characterized by a risk / return profile and by a correlation percentage to the financial markets, i.e. by a trend that is in line with the indices of the stock market and with the bond markets.

The relationship with the financial markets is rather accentuated with regard to traditional asset classes (in particular stocks and bonds) while it is less evident for alternative investments: this allows the construction of mixed portfolios that, alongside stocks and bonds, have a share allocated to alternative investments to reduce the dependence on the ups and downs of the financial markets.



Figure 2: The Risk-Return Relationship between the most used asset classes. Source: PIMCO

4.2 From the asset classes to the asset allocation

Once the asset classes have been defined, we can easily take a step forward and introduce the concept of asset allocation.

The asset allocation is the process of distributing the investor's financial resources in the most appropriate way identifying the best composition and achieving optimal management that allows the best balance between the return and the risk of the assets included in the portfolio, given the requirements the targets and investor expectations.

The process by which asset allocation is constructed is the general line as follows:

- identification of the investor's objectives in terms of risk / return to be achieved within a specific time horizon,
- identify needs (estimated or certain) according to the time horizon,
- estimate of the outlook of the different asset classes (in terms of expected risk / return and their relationships),
- definition of an optimal asset allocation obtained through the maximization / minimization of an objective function such as for instance the set of portfolios that give the maximum expected return for each given level of risk or alternatively the lowest risk for a given value of the return expected,

- analysis of the investor's subjective preferences and selection of the efficient portfolio that maximizes the wealth.

Some studies¹² carried out have estimated that the choice of asset allocation, that is to say the categories of financial assets in which to invest, has a **91.5% influence** on the difference in yield achieved by different portfolios, while *stock picking*, the process of choosing a particular security, it is only responsible for 4.6% and *market timing*, the ability to choose the most suitable time to buy or sell a certain security, for 1.8%.

Beyond this generic definition, however, different types of asset allocation can be identified and the main ones are strategic asset allocation, tactical and dynamic asset allocation.

1. Strategic asset allocation: this is the activity aimed at determining the composition, expressed in terms of asset class, namely of markets / investment categories, of securities portfolios to be considered admissible and reasonable in a medium-long term time perspective (3- 5 years); it is therefore related to the medium and long-term choices in the composition of the portfolio. The strategic asset allocation aims, first, to identify a series of macro-classes of activities that reflect the objectives, the holding period, and the risk profile of the client.
2. Tactical asset allocation: this is the activity that involves changing the strategic asset allocation to respond to extemporaneous market changes; therefore, it regards the short-term choices that in the economic phases that allow to identify the best investment opportunities. The activity that leads to the definition of tactical asset allocation is often referred to as market timing or even active asset allocation.
3. Dynamic asset allocation: because the composition of the portfolio is very sensitive to market movements this leads to rapid changes in the weight of the various asset classes in the portfolio when sudden market movements occur. The allocation of investments is even more focused on the shorter term.

¹² G.P.Brison, L.R.Hood, G.L.Beebower (1986 e 1991)

4.3 “The efficient frontier of Markowitz”

The asset allocation concept stems from Markowitz which showed that portfolio diversification improves the investor's potential return and risk profile. Although Markowitz's theories date back to the 50s of the last century, investors have only recently begun implementing asset allocation as a consolidated and recognized process, fundamental in investment activity. From the academic point of view, the Black-Litterman model, presented in 1992, has allowed a big step forward in the practical application of the technique of portfolio optimization, allowing a more flexible management of market data. A golden rule of the financial markets is: **risk and return are directly proportional, so high risk assets tend to have a high return.**

4.3.1 Efficient frontier analysis

In this section, we reconsider the problem of seeking optimal asset allocation strategies. The efficient Markowitz frontier is the basic paradigm upon which modern portfolio construction theory is based; it expresses (on a Cartesian risk-return plan) the set of combinations of asset classes that expose them to the lowest risk level for each expected level of return (or which maximize the expected return for each level of risk); the set of portfolios that are placed on the efficient frontier represents those portfolios between which to delimit the choice of an investor.

The frontier is derived, with the use of an iterative procedure, based on the algorithm of mean-variance optimization, whose inputs are represented by the expected returns, the expected risks and the correlations between the different asset classes to be included in the portfolio. The procedure allows to establish the percentage weights to be assigned to the single asset classes to obtain optimal portfolios. The indicator used for the estimate of the risk is the standard deviation since it is an expression of uncertainty, of the volatility of results with respect to the average, then the concept of correlation between asset classes is crucial in portfolio theory, as the diversification between asset classes with a low cross correlation reduces the overall risk of the portfolio.

Investors usually tend not to concentrate their wealth in a basket containing only one security but prefer to diversify it by investing in several. From theoretical precepts of the

"Portfolio Selection" proposed by Markowitz, his model is based on the following hypotheses:

1. investors select the portfolios based on the expected average return and expected risk,
2. the time horizon is uniperiodal,
3. investors are risk-averse.

Hypothesis 1 and 3 together constitute the so-called principle of mean-variance, i.e. that between two investment strategies the one with the highest expected return and the lowest standard deviation is preferable. Taking the simplest case of a portfolio consisting of two securities:

$$\begin{array}{c} E(r_x) \geq E(r_y) \\ \sigma_x \leq \sigma_y \end{array}$$

If at least one strong inequality is present then the X portfolio dominates Y, since it presents an expected higher return and lower risk than the portfolio.

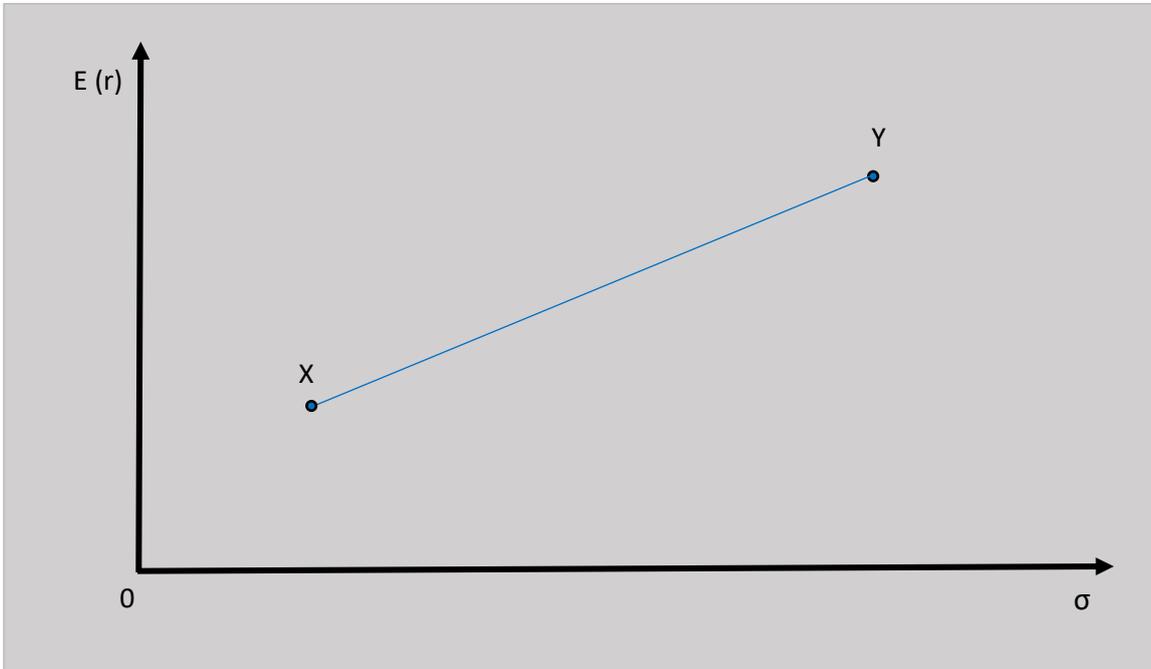
The principle of media variance does not offer does not offer selecting criteria of investment opportunities when:

$$\begin{array}{c} E(r_x) > E(r_y) \\ \sigma_x > \sigma_y \end{array}$$

The choice of one or the other investment opportunities will depend on the investor's risk appetite, it is a fundamental principle that the riskiest portfolio is also characterized by a higher level of expected return.

In the simplified case of a portfolio involving exclusively two X and Y securities, remembering that the correlation coefficient " ρ " is between -1 and 1, the following properties are found:

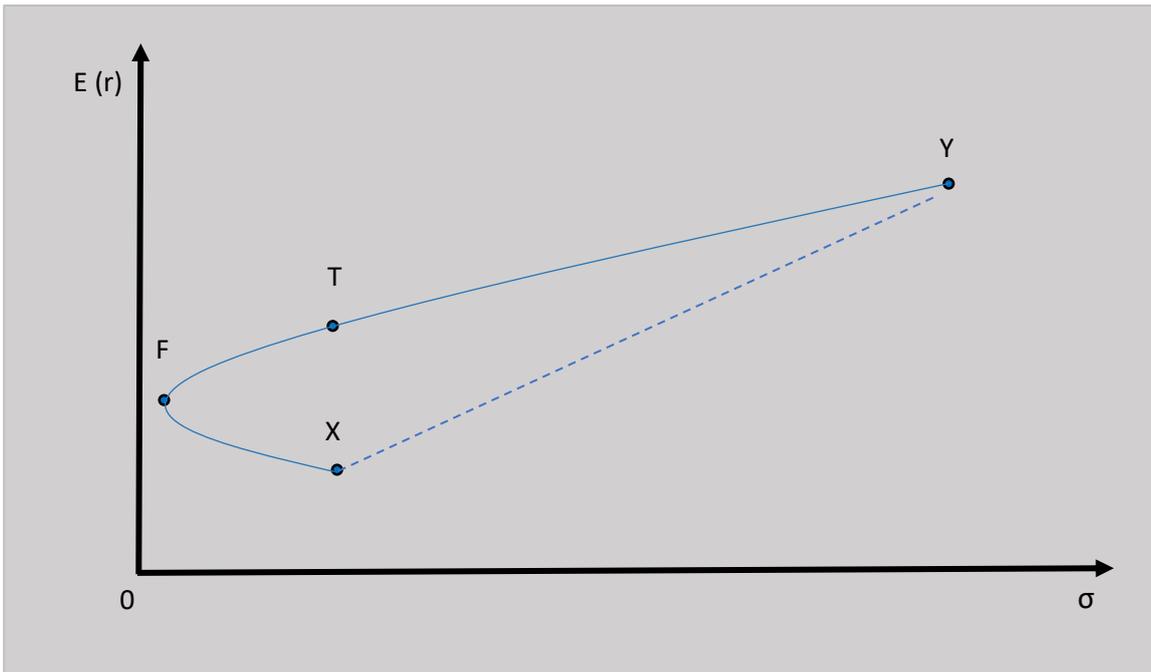
- $\rho_{x,y} = +1$: the variables are perfectly and positively correlated: there is no risk reduction benefit, the average standard deviation is equal to the weighted average of the average square deviations of the two securities.



Graph 3: risk-return configuration in the case of perfectly correlated securities.

In this case, as can be seen from the graph, no portfolio belonging to the line of possible portfolios dominates or is dominated by other combinations of the same securities: all the portfolios belonging to the line are efficient portfolios.

- $\rho_{x,y} < 1$: the average square deviation of the portfolio is lower than the weighted average of the average square deviations of the individual securities, the benefit in terms of reduction increases with the decrease in the correlation coefficient.

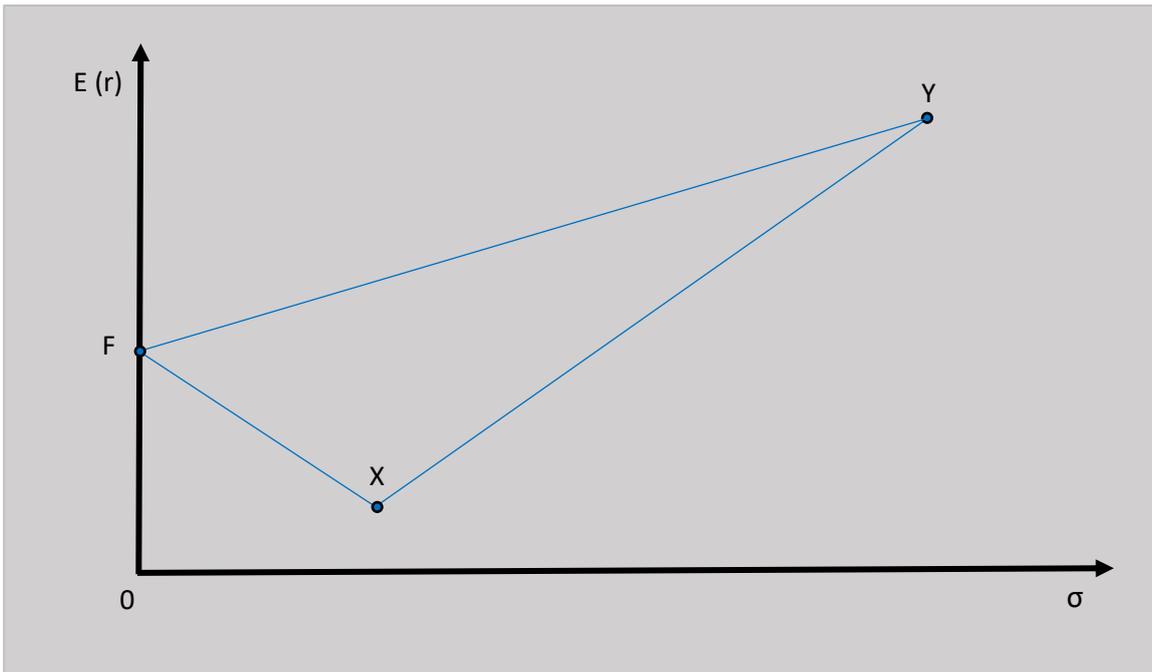


Graph 4: risk-return configuration in the case of securities with correlation coefficient < 1 .

When the linear correlation coefficient (ρ) is lower than $+1$, then the risk - return combination of the portfolios obtained as a combination of the X and Y securities assumes a hyperbolic trend, therefore a reduction in correlation leads to a reduction in the standard deviation of the portfolio itself, without however producing effects on the expected return. Unlike the previous case, not all feasible portfolios are also efficient portfolios:

- I. the X-Y curve segment represents the set of feasible portfolios,
- II. the curve segment X-F represents the set of dominated portfolios,
- III. the curve segment F-Y represents the set of efficient portfolios, called **efficient frontier** (it is composed of a set of points, each of which represents the maximum return obtainable for each level of risk, or the minimum tolerable risk for every desired level of return).

- $\rho_{x,y} = -1$: expresses the case in which the risk reduction benefit is maximized.



Graph 5: risk - return configuration for $\rho_{x,y} = - 1$.

In this case the effects of diversification are maximum and the risk - return combination of the portfolios obtained by combining the securities X and Y allows to obtain a risk-free investment F; now the F-Y segment represents the efficient frontier.

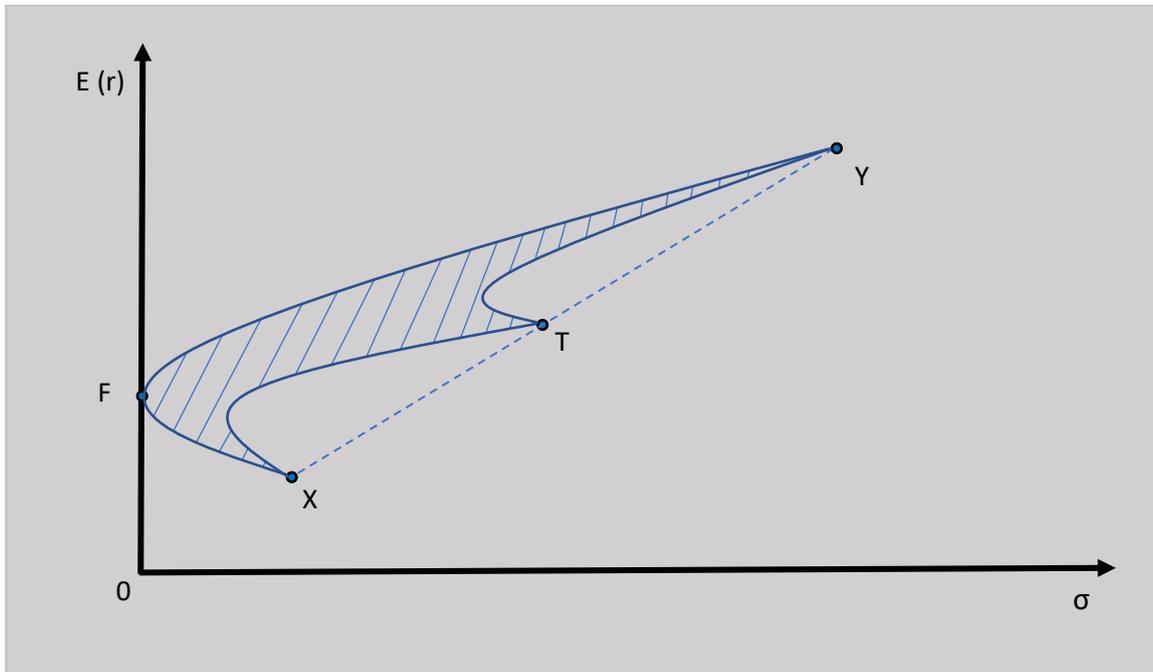
Once the expected returns $E(r_i)$ and the W_i weights assumed by the securities in the portfolio are known, the expected return is:

$$E(r_p) = \sum_{i=1}^N [W_i \times E(r_i)]$$

Therefore, the expected risk, results:

$$\sigma_p = \sqrt{\sum_{i=1}^N \sum_{j=1}^N (W_i \times W_j \times Cov_{i,j})}$$

So, these previous formulas show the most real case, i.e. taking into account a portfolio composed of N securities, and with the estimate of $E(r_p)$ and σ_p , it is now necessary to analyze how the set of efficient portfolios is extrapolated from the set of possible combinations of securities.



Graph 6: configuration of investment strategies with a portfolio consisting of 3 securities.

The graphic analysis shows that:

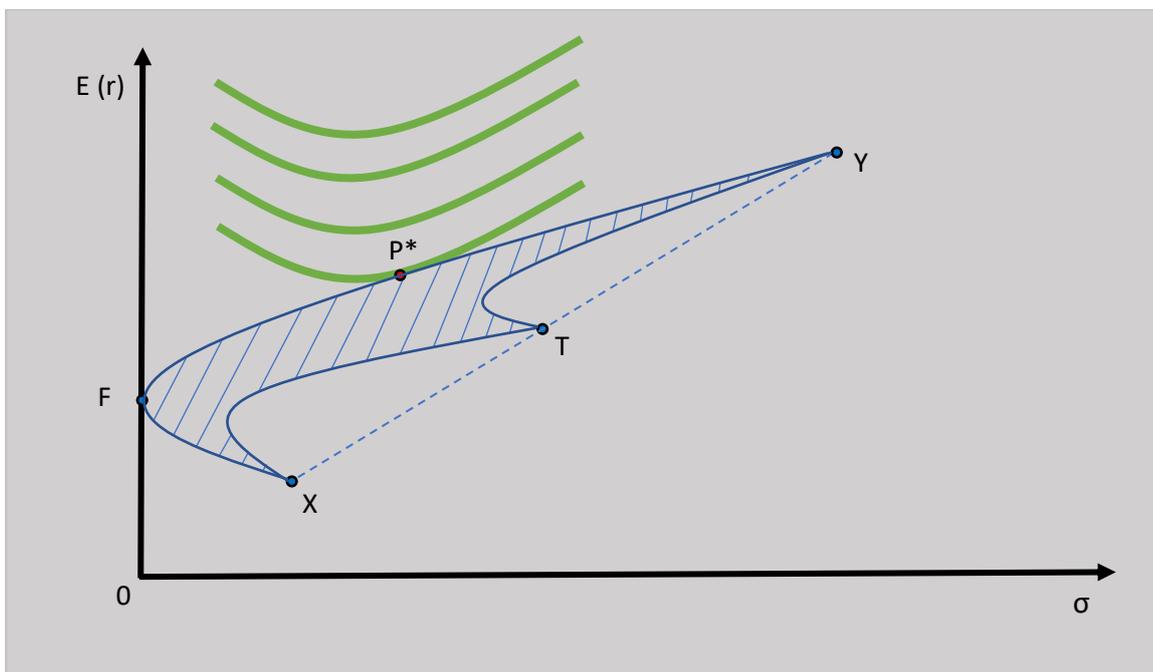
- I. the X-Y segment represents the set of portfolios obtained by combining the securities X and Y
- II. the X-T segment represents the set of portfolios obtained by combining the securities X and T
- III. the Y-T segment represents the set of portfolios obtained by combining the securities Y and T

The portfolios obtained by combining the securities X and T and the securities Y and T are inefficient, as they are dominated by the portfolios obtained by combining X and Y, the area highlighted in the graph shows the combinations of X, T and Y that is the set of feasible portfolios and the branch of hyperbole FY represents the efficient frontier.

To identify an optimal portfolio for an investor based on the efficient frontier Markowitz

approach, it will have to select one of the points on the efficient border based on its level of risk appetite, hence from this comes the concept of *indifference curve*, which makes it possible to identify the risk-return combinations considered equivalent by the investor. In the case of the Portfolio Selection analyzed, indifference curves based on a square utility function that confirm the positive inclination which describes the investor's risk aversion.

“The optimal point can be identified with the P portfolio, the point of tangency between the efficient frontier and the highest indifference curve that can be reached.”¹³*



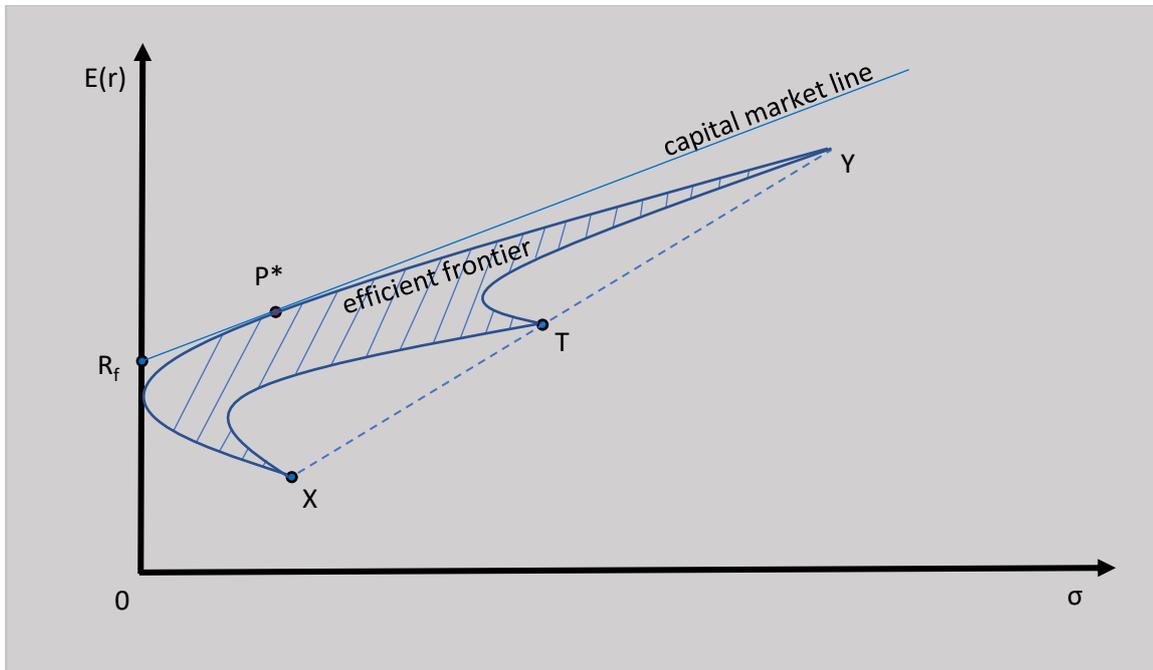
Graph 7: map of indifference curve and identification of the optimal point for the investor (for $N = 3$ securities).

James Tobin¹⁴ removes these assumptions by introducing an activity F with a certain yield R_f and null risk i.e. $\text{var}(R_f) = 0$. The optimal portfolio is then identified as that determined by the point of tangency between the curve of the efficient border and the "capital market line", that is the line that intersects the axis of the ordinates at the rate R_f whose positive inclination represents the "risk premium". The existence of a risk-free security is one of the fundamental assertions underlying the CAPM which, based also on the hypothesis of

¹³ "Investment Analysis and Portfolio Management" by "Frank K. Reilly. Keith C. Brow

¹⁴ "Liquidity Preference as Behavior Toward Risk – The Review of Economic Studies", February 1958. The concept he described is known as the "Separation Theorem"

homogeneous expectations by investors, eliminates the subjective aspect in determining the optimal portfolio.



Graph 8: “capital market line”.

The aforementioned classical financial theory has undoubtedly the merit of attempting to guide investors in their capital allocation choices in the most rational and objective way possible, but suffers from the strength of the hypotheses on which it is based.

In fact, empirical evidence shows that Markowitz's approach returns portfolios with little practical value, difficult to accept because of the low degree of diversification of efficient portfolios, mono-asset nature of the portfolio with maximum return and absence of some asset classes in all efficient portfolios. The main limitation is that the portfolio built on the basis of this approach excessively reflects the ability to estimate expected return, risk and correlation values; since these variables are estimated on the basis of historical series, assuming that their past performances can be perfectly representative of future ones, the estimates will necessarily be exposed to margin of errors able of creating misleading indications; the divergence between estimates of the ex-ante inputs and their ex-post verifiable value compromises the reliability of the performances that the efficient portfolios can achieve in the future horizon. In other words, the model neglects estimation risk and estimation errors. In fact, the main criticisms, which then gave rise to the “Post-Modern

Portfolio Theory”, within which the multiple improvements or expansions of the Markowitz theory can be relocated, focus the attention on the inadequacy of the standard deviation as a measure expected risk since the variance is a symmetrical risk measure, and assumes that returns have a normal distribution moreover the weights defined by asset allocation are too variable over time, or take extreme values.

Although it is a pivotal model in the way of reasoning in the context of asset allocation, an alternative pattern is needed. The alternative is represented by the Black-Litterman model (BL model), which tries to combine the market's expectations with the investor's views. The model starts from the assumption that the market has expectations on returns based on information of public domain, but that the investor may have, if has in possession or simply for personal considerations. Therefore, the starting point is the market with its expectations, from which the investor will then decide, based on his “views”, whether to take distance or not. Among the hypotheses underlying the model we find that the market portfolio must be efficient in the mean-variance sense, that its allocation is known, and that the coefficient of risk aversion and the volatility of asset returns in which investor wants to invest are known (or accurately estimated).

First of all, when we talk about "expectations" and "views" we do it in reference to returns, so it is necessary to define two distributions of returns, one that follows market expectations and one that follows the investor's personal "views". They will be defined according to the respective mean and variance, bearing in mind that the variance of returns under the views is an index of the degree of security that the investor has about their private expectations: the greater the variance the less confidence in their views will be. Obviously, if the averages and variances coincide, this would mean that the views would coincide with market expectations, and therefore, it would be worth to invest in a well-diversified index. In case they diverge, a minimum squares problem must be solved to find the objective return. The idea is that if the market has an expectation of future returns and the investor has another, to understand how to allocate assets you must first define a “return to be achieved”, that is precisely that minimizes the distance between the two returns assumed by the market and by the private sector. “Once this return has been determined as the sum of the expected return from the market and the product between a coefficient with the difference (spread) of the expected return from private views and the expected return from the market, we insert this

objective return into the Markowitz model and we can finally deduct the optimal weight to invest in the risky portfolio, hence considering both public information on the market and its own private information.”¹⁵

However, nowadays there are new and more updated practical models, to adapt them to market complexity and formulated to ease the hypotheses, such as dynamic models and models based on Monte Carlo simulation.

¹⁵ “RISK MANAGEMENT AND CAPITAL ADEQUACY” - RETO R. GALLATI, McGraw-Hil

Chapter 5

Intesa Sanpaolo's case

5.1 Description and operating model

The Pension Fund of Intesa Sanpaolo Group has the purpose of allowing the receipt of a supplementary pension which is added to the benefits of the mandatory pension system: it collects the amounts paid - contributions - and it invests them in financial instruments or insurance policies using professional intermediaries, only in the exclusive interest of the members and according to the indications provided by themselves.

As already described in chapter 3, pension funds have more restrictive observances in force to respect, differently than all other institutional investors: in particular is enshrined in the obligation of a healthy and prudent management of capital, established to achieve social security purposes; the management of the asset classes are limited and in addition there are quantitative boundaries, set on the investment instruments to prevent that the Fund can exercise control over other companies. Therefore, it is worth emphasising that all of these aspects affect the choice of asset allocation pursued.

The Italian current regulations concerning investment limits are based on general qualitative criteria, indicated in art. 2 of the Ministerial Decree 703/96. To these criteria are added the specification, in art. 3, of the businesses in which the fund's assets may be invested, with implicit exclusion of all the others not expressly mentioned, as well as, in art. 4, which are contained quantitative restrictions. The Legislative Decree 6 February 2007, n. 28, in implementing Directive 2003/41/EC on the activities and supervision of institutions for occupational retirement provision, has amended the Legislative Decree 5 December 2005, n. 252, redefining the guiding principles that the secondary regulator must follow in defining the limits to investments and conflicts of interest. In this context, the principle of "prudence" appears as a criterion for the accountability of pension funds in financial management activities, which calls them to give account to the members of their choices.

The operating model of the Fund is focused on an investment policy aimed at identifying, as part of a multi-compartment and multi-manager approach, differentiated and business-like

investment solutions in order to maximize the performance conferred in the form of income, achievable at the time of retirement and, if necessary, at the occurrence of special events (such as advances).

The multi-compartment articulation of the Fund which is the basis for asset allocation decisions, is inspired by some pre-existing models of European pension fund investment choices and it is developed consistently with the degree of discretion and freedom of choice of the member in accordance of their social security needs, to their own risk tolerance and to the presumed duration of permanence.

Hereby, the characteristics of the investment process of the pension fund are:

- predictability and stability of incoming flows, generally established by contract with regard to the amount and duration;
- medium / long-term liabilities, which are subject to early repayment only under certain conditions, and hence
- time horizon portfolios' investment in long period.

The intention of the Fund is to create long-term value by achieving the objectives of profitability and growth, through efficiency and risk management in compliance with the reference regulatory system, the Fund provides to:

1. define the objectives to be achieved in financial management and the criteria to be followed in its implementation,
2. define the investment solutions proposed to members by constantly checking the adequacy,
3. collect the contributions,
4. manage the resources in the exclusive interest of the members by selecting, coordinating and controlling the subjects involved in the management chain,
5. provide the benefits.

In the framework of the complex decision making process concerning the strategic asset allocation, it is necessary to identify a complicated system of **benchmarks** that is a reference during the critical phases of the allocation process. A choice insignificant or even

incorrect in terms of benchmark is potentially detrimental to the entire allocation process and could lead to biased assessments in the periodic review of the performance achieved.

For the adoption of the strategic asset allocation and benchmarks, the Pension Fund shall use the systematic aid of financial advisors, that have designed mathematical models for the generation of economic-financial stochastic scenarios and algorithms for the parameterization of investment classes useful for portfolio optimization. In fact from the series of results obtained with these templates, given the constraints defined by the Fund in terms of time horizon and optimal asset classes real scenario are developed, which take the name of: **simulation models**.

Asset Classes	volatility	data bond indexes	
		DURATION	AVERAGE RATING
Liquidity	0.6%		
Bond Gov. Pan-EU 1-3 anni (€ hdg)	1.4%	1.8	AA-
Bond Gov. Pan-EU all mats (€ hdg)	5.2%	7.8	AA-
Bond Gov. US 1-3 anni (€ hdg)	1.2%	1.8	AA+
Bond Gov. US all mats (€ hdg)	4.3%	6.0	AA+
Bond Gov. Emerging (€ hdg)	8.6%	6.7	BBB-
Bond Corp. Euro 1-3	1.8%	1.8	A-
Bond Corp. all mats	3.8%	4.9	A-
Bond Corp. USD all mats	5.9%	6.7	A-
Bond Corp. Glob. HY BB-B all mats (€ hdg)	9.8%	4.4	B+
Stocks Europe (€ hdg)	15.2%		
Stocks North America (open exchange)	13.5%		
Stocks Emerging (open exchange)	18.9%		
AIFs: private equity	24.3%		
AIFs: private debt and real estate	8.9%		

Table 1: real example of a simulation model (1), forecast of expected volatility and characteristics of bonds. For illustrative purpose only.

The concept of these models, as the example reported in the tables, is that: once established the asset classes the advisors applies their schemes to determine, through historical data and hypothesis and forecasts about future economy, the volatility and a probability of return over several years; these measurements provide a further help and make possible to achieve the most efficient composition of the portfolios of the sub-funds and so the allocation among asset classes, the duration and also the geographical and sectorial exposure, the profitability and riskiness expected in the specific time horizon.

	expected returns 3 years		expected returns 5 years		expected returns 10 years	
	GROSS	NET	GROSS	NET	GROSS	NET
	-0.1%	-0.1%	0.0%	0.0%	0.5%	0.4%
	-0.3%	-0.3%	-0.2%	-0.1%	0.4%	0.3%
	-0.7%	-0.6%	-0.4%	-0.3%	-0.1%	-0.1%
	0.6%	0.6%	0.9%	0.8%	1.1%	1.0%
	0.7%	0.7%	0.9%	0.8%	1.3%	1.1%
	6.2%	5.4%	5.9%	5.2%	5.6%	4.9%
	0.3%	0.3%	0.6%	0.4%	1.2%	1.0%
	0.0%	0.0%	0.3%	0.2%	1.0%	0.8%
	2.2%	1.8%	2.5%	2.0%	2.9%	2.3%
	5.0%	4.0%	5.2%	4.1%	5.6%	4.5%
	5.6%	4.5%	5.5%	4.4%	5.3%	4.3%
	5.4%	4.3%	5.3%	4.3%	5.2%	4.2%
	6.0%	4.8%	5.8%	4.6%	5.6%	4.5%
	7.2%	5.8%	6.8%	5.5%	6.5%	5.2%
	3.6%	2.9%	3.7%	2.9%	4.2%	3.3%
expected inflation	0.4%		0.6%		0.9%	

Table 2: real example of a simulation model (2), 3, 5 and 10 year projection of expected returns after inflation. For illustrative purpose only.

5.2 Characteristics of the investment compartments in terms of asset allocation

The investment range offered to members is made up of six investment schemes, separated into: *Obbligazionario a Breve Termine*, *Obbligazionario a Medio Termine*, *Bilanciato Prudente*, *Bilanciato Sviluppo*, *Azionario e Finanziario Garantito*, whose articulation allows differentiated risk-return allocations and profiles. These sub-funds shall provide a defined allocation through a mix of homogeneous asset classes:

- | | | |
|---------------------------|---|-----------|
| • Governative bonds | } | core |
| • Corporate bonds | | |
| • stocks | | |
| • alternative investments | } | satellite |

The following figures below reports the strategic asset allocation:

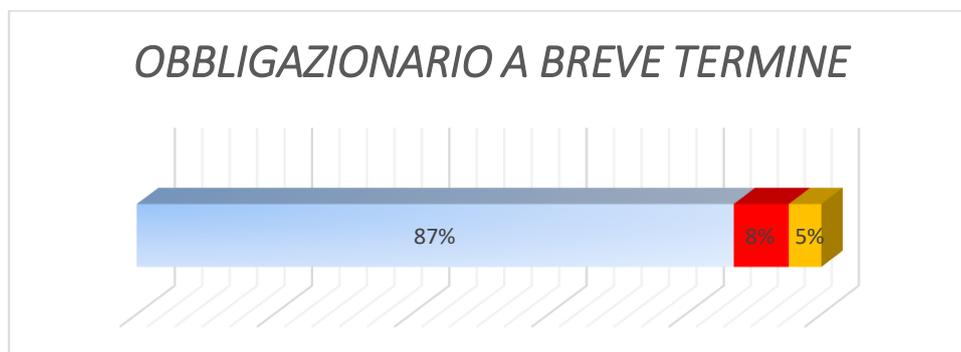
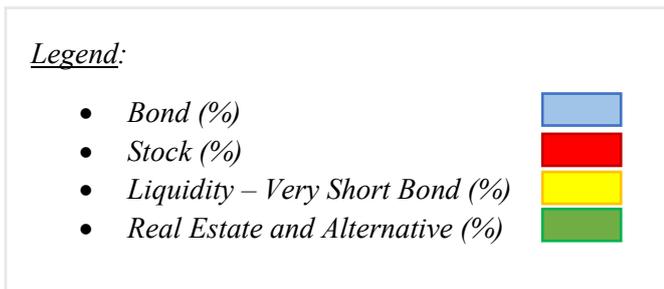


Figure 3: strategic asset allocation of the “*obbligazionario a breve termine*” compartment.

In the short-term bond segment, the management policy is mainly oriented towards short / medium-term bonds, it is characterized by a low portfolio duration indicative of 2 years, and a residual component in stocks not higher than 12.50%. In curtailment of the bond

component, and up to a maximum of 5%, is provided the direct investment in unlisted financial instruments of an equity nature, which primarily pursue the distribution of proceeds with respect to the revaluation of capital.

Specifically, by the type of financial instrument, the bond component is divided into: government securities for 65%, divided by 34% by government issuers and 31% by supranational and the remaining 27% represented by corporate bonds. The allocation by geographical area is subdivided into the Euro area for 71.53%, other countries with 0.05%, the USA by 12.30%, other countries outside the EU and emerging countries respectively with 7.60% and 0.31%. The 8% highlighted in red of the stocks component is instead equity securities which are mainly part of the Euro area.

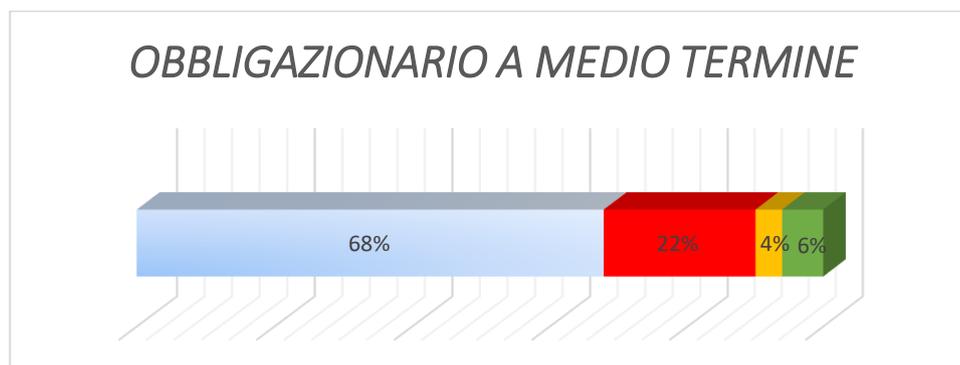


Figure 4: strategic asset allocation of the “*obbligazionario a medio-termine*” compartment.

Also in the medium-term investment proposal, the management policy is mainly oriented towards bonds; there is a component in shares on average equal to 22% and in any case no higher than 30% (including direct investments in funds of alternative investments in private equity for a maximum of 2%); there is a component of direct investments in real estate funds and private debt for a maximum of 8%. As in the previous case there is a reduction of the bond component, and up to a maximum of 4%, envisaged for direct investments in unlisted financial instruments concerning equity.

The bond component is subdivided into 51% government bonds, including government and supranational issuers of 45% and 6% respectively, the part invested in equities refers to 20%

equity securities and 2% CIUs and finally as shown highlighted in green while 6% is allocated to real estate fund investments.

The geographical allocation stands out in debt securities that are allocated in the Euro area, other EU countries, USA, other non-EU countries and emerging countries with the following percentages: 45.50%, 0.15%, 18.60%, 4.51% and 2.83%, and in equity instruments with: 13.40%, 0.00%, 6.10%, 1.00% and finally 1.70% respectively.

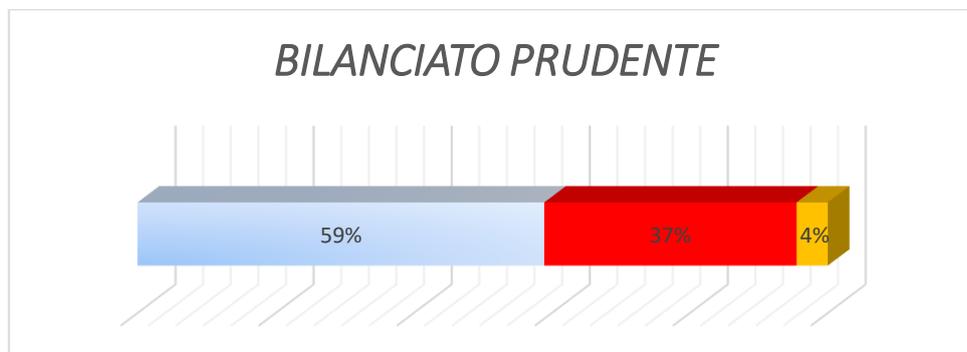


Figure 5: strategic asset allocation of the “*bilanciato prudente*” compartment.

In the case of the first balanced compartment (*Bilanciato Prudente*), the management of resources provides for a balanced composition between debt securities (on average 60%) and equities (on average 40%). The latter component cannot however exceed 50%. Also in this case, and up to a maximum of 5%, the direct investment is planned in unlisted financial instruments of an equity nature, which primarily pursue the distribution of income with respect to the revaluation of capital, reducing the bond component.

The bonds are 38% divided into government issuers and 6% by supranational and corporate securities by 19%. Investments in stocks are made without limits on the company's capitalization, size or sector and are related to 33% equity securities and the remaining 4% in collective investment funds, they are located in financial instruments even in this case issued by areas such as: Euro area, other EU countries, USA, other non-EU countries, emerging, in about these percentages: 21.40%, 0.00%, 10.40%, 1.70%, 3.00% while contrary for debt securities, they are distributed as follows: 40.45% , 0.14%, 16.00%, 3.69%, 2.70%.

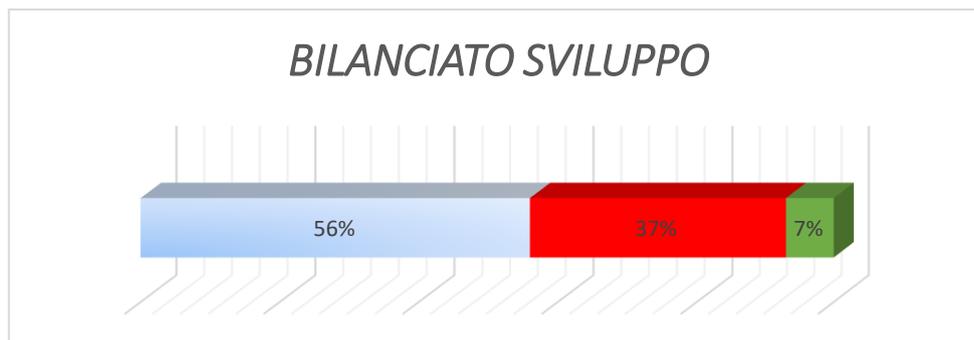


Figure 6: strategic asset allocation of the “*bilanciato sviluppo*” compartment.

In the second balanced proposal (*Bilanciato Sviluppo*), the management policy involves in fact a balanced composition between debt securities (on average 50%) and equity securities divided into 34% government bonds, including government issuers in 28% and supranational in 6%, corporate securities about 19% and 3% of CIUs. The equity component, on average equal to 35%, cannot in any case exceed 50%, including direct investments in alternative funds for a maximum of 4%; while part of the resources are allocated in direct investments in real estate funds and private debt for a maximum of 11%. Investments in debt securities include 32.68% in the Euro area, 0.15% in other EU countries, 15.80% in the USA, 3.55% in other non-EU countries and 4.12% in emerging countries, otherwise in the case of equity securities where the localization is divided respectively into these measurements: 18.40%, 0.00%, 11.20%, 3.20% and 4.20%.

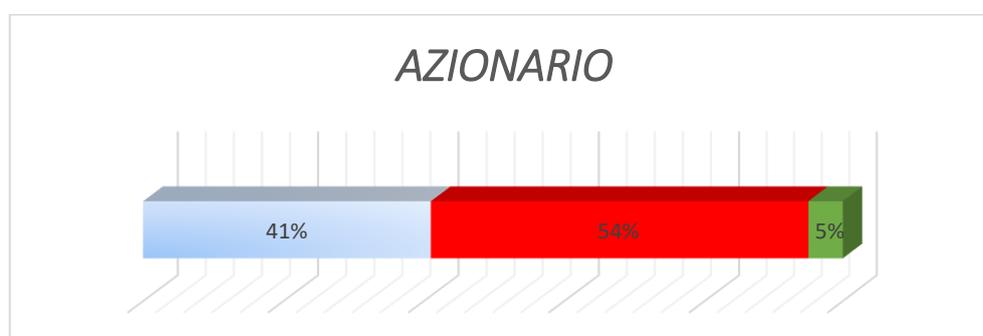


Figure 7: strategic asset allocation of “*azionario*” compartment.

Regarding the equity sub-fund, the management policy is mainly oriented towards equity securities, in percentage in large part, not less than 50% (including direct investments in alternative investment funds of an equity nature for a maximum of 6%); nevertheless there is a bond component (on average 30%) and a component invested directly in real estate investment funds and private debt for a maximum of 14%, on 12/31/2017 this percentage has been established of 5% (green colouring of the graph).

Financial instruments are equity securities listed on regulated markets, debt securities and other assets of a bond nature, CIUs (in residual way), direct investments in AIFs, real estate investment funds and private debt, moreover it is also enabled the use of derivatives for both risk hedging and efficient management.

Specifically, the equity component consists of 46% in capital securities and the remaining 8% invested in CIUs. The location is divided into euro area, other EU countries, USA, other non-EU countries and emerging with the corresponding investment percentages: 27.00%, 0.00%, 15.90%, 4.57%, 6.53%. On the other hand, the bond portion is divided into government bonds for 22% (5% government issuers and 17% supranational), 16% corporate bonds and 3% CIUs, located in the areas mentioned in agreement with these percentages: 22.30%, 0.14%, 11.90%, 2.73%, 3.96%.

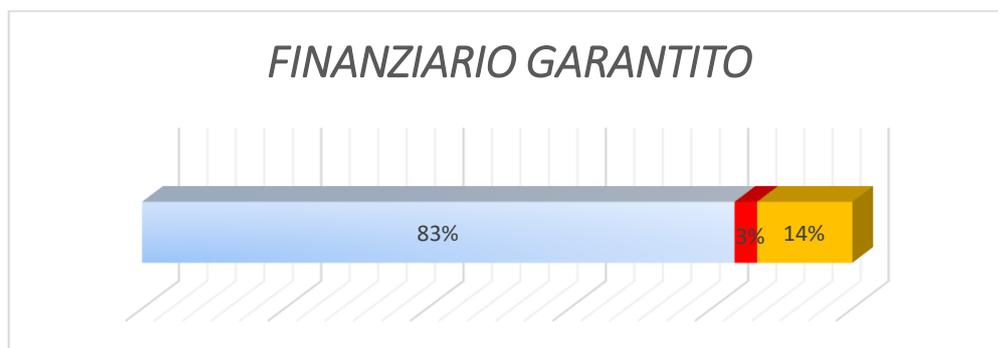


Figure 8: strategic asset allocation of the “*finanziario garantito*” compartment.

The so-called “*Finanziario Garantito*” compartment, is mainly composed of debt securities. The "guarantee" provides that, at the time of exercising the right to retirement (pursuant to Article 11, paragraph 2 of Legislative Decree 252/2005) the individual position cannot be

less than the amount of capital paid in the compartment, after deduction of any not integrated advances or sum redeemed. The resources of the compartment are distributed in financial instruments of debenture nature for 95% splitted for 85% in government bonds and for 10% in corporate bonds of assets under management and in equity instruments, as is shown in red within a maximum limit of 8%. The categories of issuers and the industrial sectors concern listed debt securities and unlisted debt securities, only if issued or guaranteed by countries by international organizations of OECD countries, including that debt instruments deriving from securitization transactions.

Because of the tactical allocation, the adviser has discretion in changing by increasing or decreasing the exposure to asset classes of the investments listed above and can lead to adding value but also losses. So these values can be different today from those reported on past month about some percentage point.

5.3 Types of investment

the assets of the pension fund are invested in five macro-areas:

Securities Investments	Direct investments in closed-end securities funds (AIFs)	Direct investments in real estate funds	Investments in insurance policies	Direct equity investments and art heritage
-Eurizon Capital		-Omega	-Allianz	
-Epsilon	-Principia III	-Omicron Plus	-Axa MPS Vita	-Banca d'Italia
-Amundi	Health	-Q4	-Fideuram Vita	
-BNP Paribas		-Beta	-Generali Italia	-Forsys Metals
-Pictet	-BlackRock	-AIG European	-Itas Vita	Corporation
-Deutsche AM	Renewable	Real Estate	-UnipolSai	
-HSBC	Income Europe	-AIG US		-Art Heritage
-Pioneer		Residential Inv.		

Table 3: investment areas.

5.3.1 Securities Investments

They are accomplished through management mandates with eight fund managers. So-called "traditional" securities investments, both benchmarked and total \ absolute return, are implemented according to the investable universe, the specialization and the management style (passive, active and thematic). "Benchmark" investments adopt an objective reference parameter with respect to market trends, with the aim of offering "parameterizable" returns and they are a useful tool to support the evaluation of the results obtained by management. Total / absolute return investments aim to achieve constant returns over time regardless of the performance of the financial markets, to limit the volatility of the portfolio and not to depend on the performance of the markets to generate positive performances. These strategies are associated with a specific risk budget consistent with the objectives of each compartment.

5.3.2 Direct investments in closed-end securities funds (AIFs)

Consist of Principia III Health (managed by Principia SGR) and BlackRock Renewable Income Europe (managed by BlackRock Infrastructures Funds Plc). The current private equity investments include shares in a closed AIF dedicated to European plants for the production of solar and wind energy and another closed AIF that invests in companies in the healthcare cycle, mainly Italian and in the start-up phase.

5.3.3 Direct investments in real estate funds

The Fund holds a portion of real estate investments made mainly through the holding of shares in real estate funds under Italian law, consisting of the Omega Fund, the Omicron Plus Fund, and the Q4 Fund. The Fund was an almost exclusive shareholder, in 96% also from the TAU real estate Fund. During the year 2017, the TAU Fund (valued at 48.7 million euros at the end of 2016) repaid the shareholders, proceeding with the total liquidation. These investments are flanked by two residual participation in foreign real estate companies (Limited Partnerships) AIG European Real Estate and AIG US Residential Investment,

implied to participate in real estate initiatives in Europe and America.

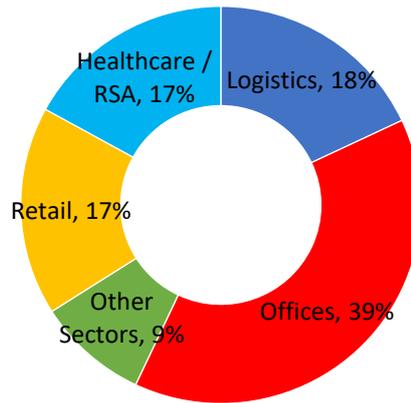
Finally, as at 31 December 2017, the Fund had in portfolio, n.658 shares of the IDeA Fimit Beta Fund. The shares of the aforementioned fund, acquired together with the shares of the IDeA Fimit Alpha Fund from the merged Sanpaolo Imi Group Pension Fund, as part of the liquidation in kind of the Leo Capital Growth SPC Fund, are currently being liquidated. The composition of the real estate portfolio is shown below:

Fund Denomination	% of participation	Value of participation
Fondo Omega	23.55%	74.586.653
Fondo Omicron Plus	7.40%	15.611.635
Fondo Q4	100.00%	44.864.384
Fondo Beta	0.25%	32.505
AIG European Real Estate	11.09%	1.241.174
AIG US Residual Inv.	5.27%	83.319
Total		136.419.670

Table 4: real estate portfolio composition.

During the 2018 financial year the Fund for underweight reasons, has decided to vary and expand the composition of sectors of its real estate portfolio identifying the amounts available and for new investments. To do this, in the strategic and management choices of the aforementioned portfolio it has been assisted by the advisor, in order to define the percentages of alternative investments, present in three of the five compartments.

Specifically, in these new investment opportunities in the real estate sector, the Fund has decided to tend to a greater sectoral diversification (as shown in the pie chart) not only limiting it in areas such as Logistics and Offices but also considering Retail, Healthcare, RSA and Senior Living, Student Housing, and has also increased its geographic scope, choosing to invest mainly in the Eurozone, favouring major cities and / or more liquid markets, US and other non-Eurozone markets assessed in consideration of currency risk, while in Italy only for new alternative sectors (healthcare, RSA, student housing).



Graph 9: strategic real estate allocation.

5.3.4 Investments in insurance policies (Class I, III and V)

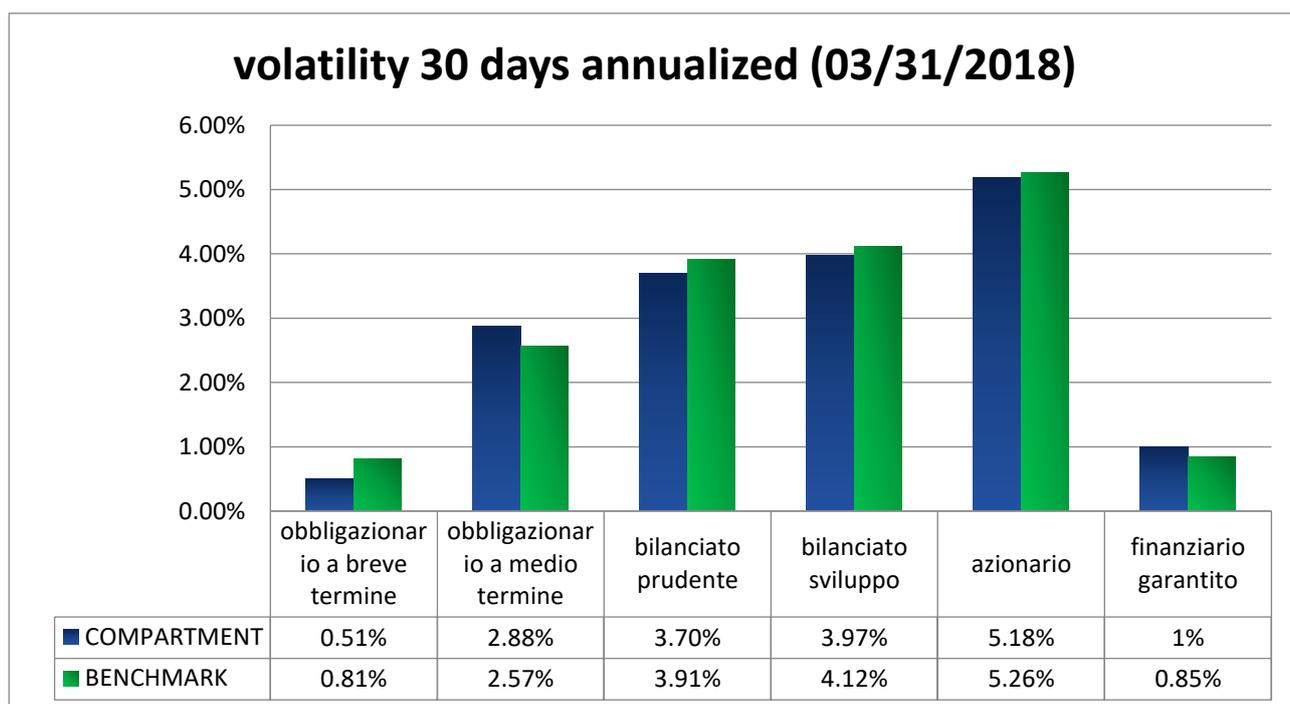
The Fund holds investments in class I, III and V insurance policies in place with the Fideuram Vita, UnipolSai, Generali Italia, Allianz, Axa Mps Vita and Itas Vita insurance companies.

5.3.5 Direct equity investments and art heritage

The stocks of the “Banca d’Italia”, are equities not traded on regulated markets, whose investment decision was supported by analyses and evaluations that identified in these shares financial characteristics that could increase the diversification of the compartments' portfolios, the decorrelation with traditional securities investments, the stability of profitability and therefore to improve the risk / return efficiency profile. The Forsys Metals Corporation shares, are equity securities denominated in Canadian dollars and issued by a Canadian company involved in uranium mining. The investment derives from the liquidation in kind of the shares in the Leo Capital Growth fund held by the Sanpaolo IMI Group Pension Fund. Moreover, it is, in the end, the Fund has a modest share of its assets invested in artistic works (3 paintings).

5.4 Performance analysis

The Fund monitors, with the support of the advisor and with monthly frequency, some relevant risk measures such as **Tracking error**, **volatility** and **Value at Risk** of the portfolio and based on these indicators, it intervenes with eventual rebalancing, in order to realign the overall risk to that expected.



Graph 10: comparison among volatility of compartments and benchmark on 03/31/2018.

The assessment of the performance obtained is carried out by comparison with an established benchmark, taking into account the adequate necessary precautions to ensure a meaningful comparison also with other fund managers: it should be considered the risk borne, the evaluation must be conducted on an appropriate time horizon, must be guaranteed a level playing field both in comparison with the benchmark and with other managers.

The process of measuring and evaluating performance is aimed at assessing the fund manager's ability to act in the interests of the members; if accompanied with appropriate incentive and punishment mechanisms, it allows to create ex-ante a stimulus to operate in this sense and to make the most capable managers prevail on the market; finally, the performance evaluation also acts as a control system to perfect the management itself.

These goals can be achieved by identifying a benchmark in line with the asset allocation process, using objective evaluation criteria and known by the fund manager.

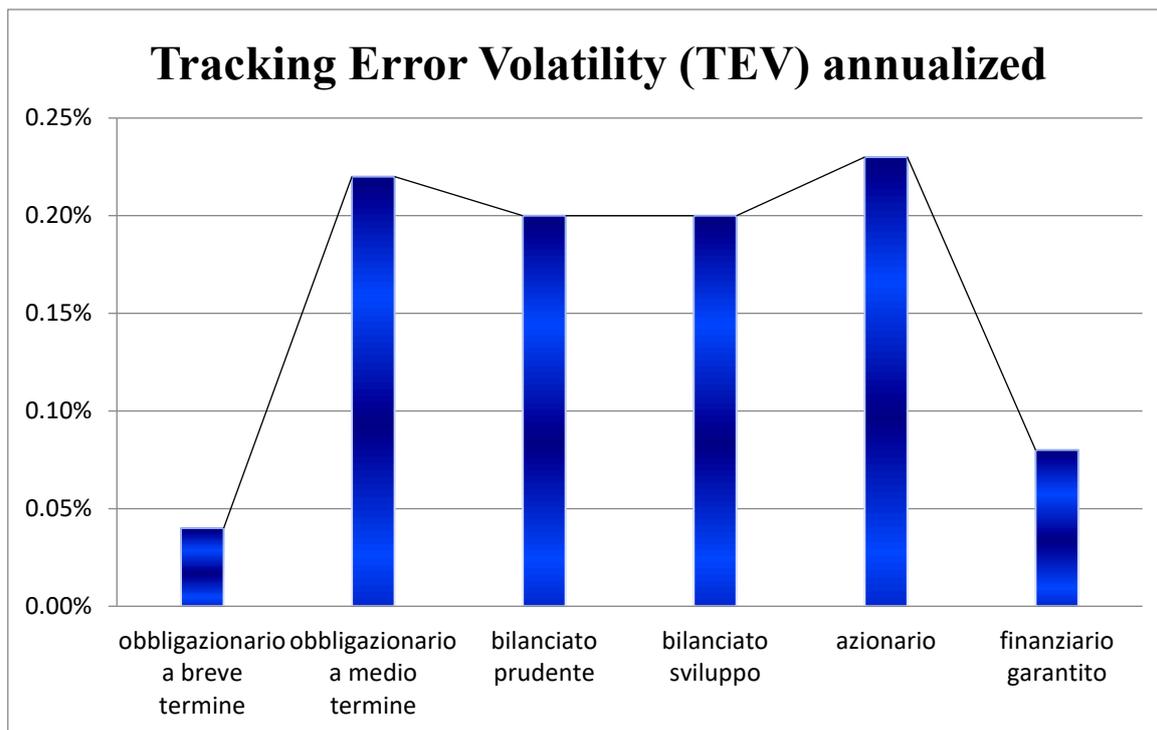
The identification of the benchmark is of fundamental importance for pension funds, also because it is a useful tool for a clear and objective communication of the purposes between intermediary and adherent, since it identifies the risk profile and the market opportunities in which the fund typically invests. It is an objective parameter which reinforces the fiduciary relationship between investor and manager.

In the current system the most significant constraint for the overall riskiness of the portfolio is represented by the implicit obligation to contain the so-called **tracking error volatility (TEV)** compared to the benchmark or to replicate it exactly. This approach, however, largely leaves members with the burden of correctly assessing exposure to the various sources of risk inherent in each benchmark and more generally in each investment line. The tracking error formula¹⁶ therefore, describes as mentioned the difference between the performance of a fund and the performance of its benchmark.

$$\text{TEV} = \sigma | R_p - R_b | = \sigma (\text{TE})$$

Here in the following is reported the values of Tracking Error for all the compartments. However, it is good to note that despite being an indicator of the effectiveness of replicability, the limitation lies in the fact that it is not possible to understand whether these are positive or negative differences, so what matters is the width of the result and therefore the lower it is, the more its value is close to that of the benchmark.

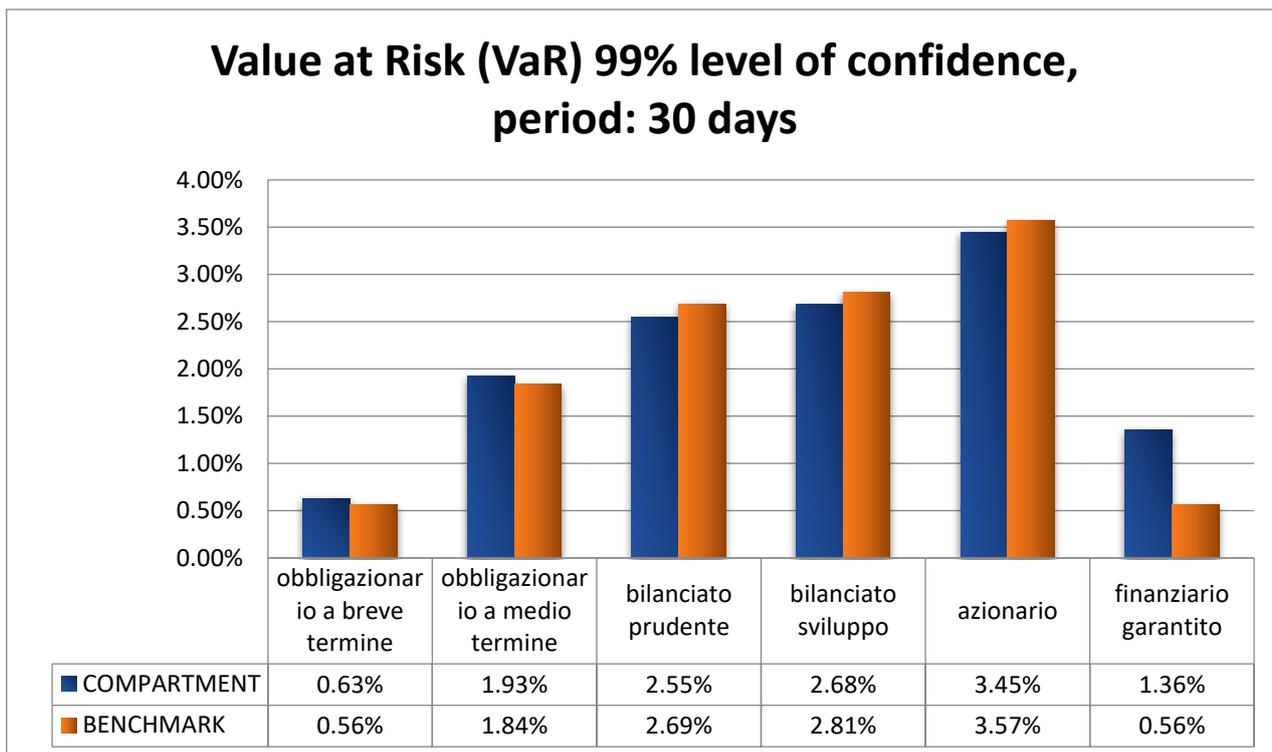
¹⁶ <http://www.bankpedia.org>



Graph 11: representation of TEV annualized for each compartment on 2017.

On the other hand, in a risk-based logic, the risk monitoring activity seems to be better practicable through the use of other indicators such as the Value at Risk (VAR) of the fund / member.

The VaR represents the estimate of the potential loss on portfolio positions deriving from adverse market movements, expressed in monetary terms and verifiable with a certain level of probability over a specific time horizon; in other words, the VaR informs about the portion of capital that the fund / member risks losing in a predetermined time horizon and with an assigned level of confidence. The Value at Risk summarizes in a single measure the aspects concerned the market risk of a financial title. In practice it indicates the worst loss to which it is possible to go against, under normal market conditions, given a certain level of confidence, over a certain period of time. Statistically it is the quantile (corresponding to the desired confidence interval) of the expected distribution of the price of a security in a given time horizon. The VaR is given by the initial value of the investment less the value of it in the case of worst loss.



Graph 12: comparison among VaR of compartments and benchmark on 03/31/2018.

Finally, as an extra to an initial declaration of the adopted benchmark, to increase the information and transparency of the supplementary system, it is necessary to ensure clear and periodic reporting to customers that contains, for each investment line, the performance obtained from management and that relating to the benchmark, by comparing these two indicators and not only by assessing the return in absolute terms. In this sense, the Supervisory Committee has stated that, annually, the fund must inform members of an information sheet on financial management, on returns in relation to the benchmark and on the individual position relative to the contributions paid, the expense, the amount and the value of the share and the net returns of the proposals (understood as percentage variations of the value of the share related to the performance of the financial management about the accumulated resources, net of tax charges and management commissions).

	Net return on 12/31/2017		Net return on 08/31/2018 (Compartment)
	Compartment	Benchmark	
Obbligazionario a breve termine	0.11%	0.10%	-1.00%
Obbligazionario a medio termine	1.60%	1.90%	-0.16%
Bilanciato prudente	2.29%	2.50%	0.33%
Bilanciato sviluppo	2.36%	2.47%	0.07%
Azionario	3.04%	3.03%	0.50%
Finanziario garantito	0.61%	0.001%	-1.75%

Table 5: net return on 12/31/2017 compared to the benchmark and net return on 31/08/2018.

It is good to keep in mind that returns are subject to fluctuations and those achieved in the past are not necessarily indicative of future returns. It is therefore necessary to evaluate the results in a long-term perspective, so before making the investment choice it is important that the member know the characteristics of the investment option he will choose because it is associated with the level of risk that is willing to endure to achieve the social security objective, and considering, in addition to the personal propensity to risk also other factors such as: the time horizon that separates from retirement, the individual wealth, the income flows that are expected for the future and their variability. Furthermore -as specified in the fund's Statute- the member is required to select up to a maximum of three choices of investment but without binding capacity, i.e. she / he is free to switch from one compartment to another.

It is possible to notice that the outcomes achieved were, in the last year, efficient because all yields are positive and are in line with the values of the chosen benchmark (as also shown in the low values of the TEV in graph 11), actually the management has had a good result in

relation of the over-performance gained from two of the six compartment. As reported in the table, in 2017 the equity offer proved to be the most profitable with a return of around 3%, followed by the two balanced options, while the compartments with a strong bond component are badly affected in the first half of this current year, perhaps due to the situation of political uncertainty in Italy, combined with the enlargement of the spreads caused by the expectations of an increase in core risk free rates (Bund and Treasury) and then for the end of quantitative easing (QE).

Chapter 6

Comparative analysis

The aforementioned chapter will describe the trends in terms of asset allocation referring to the Eurozone and will explain how the investment proposals of some bank competitors are structured in the Italian and international territory in order to see the similarities and differences with the Intesa Sanpaolo's Fund. By analysing the various proposals and strategies, it will be possible to understand the reasons for differences from country to country and whether it is doable to implement conventional rules regard the choice of the investment compartment.

6.1 Overview and emerging trends

According to the latest survey of the Global Pension Assets Study, pension fund assets have steadily grown over the past 20 years at a rate of 6.2% per annum (in USD), in close correlation with global returns of equities and bonds markets during the same period, registering a growth of 41.3 trillion dollars at the end of 2017 (up 13% on the previous year), the highest value since 1997 and with this result, the trend started in 2009, in financial crisis, continues demonstrating that citizens are increasingly worried about the future of public welfare systems.

Moreover, it is observed that the Norwegian government pension fund continues to be by far the largest institutional investor in Europe with around 1000 billion assets. In fact, the Scandinavian countries are the most represented in the ranking of the 20 largest pension funds in Europe, given that almost half correspond to Nordic countries: Norway, Denmark, Sweden and Finland represent more than 50% of the assets managed by the top 20.

However, about 36% higher than the Norwegian one, the Japan's GPIF with 1.4 \$ trillion of assets is still ranked as the largest pension fund in the world since 2002, while over 90% of the assets are managed by pension funds belonging to 7 countries, including Australia,

Canada, Japan, Holland, Switzerland, United Kingdom and United States of America, this latter is the largest with over 60% of the assets managed.

The defined benefit (DB) funds remain the majority, but their impact on the total is decreasing: at the end of 2017 they represented 67% of the total assets under management, against 75% of five years ago. It is a dominant formula in the U.S. market but elsewhere it is much less widespread. In Italy it is completely non-existent, since the defined contribution (DC) model has been set. The hybrid funds represent approximately 0.8% and have intermediate characteristics between the two types.

World events such as the failure of Lehman Brothers in 2007 or more recently the Brexit and the American election of 2016, have led investors to face a situation of great uncertainty that has resulted them in the action to try to obtain good investment returns a change conventional strategies through the use of less familiar asset classes, leading in the long term to a robust cut in equity allocation as volatile and also unattractive for risk and return.

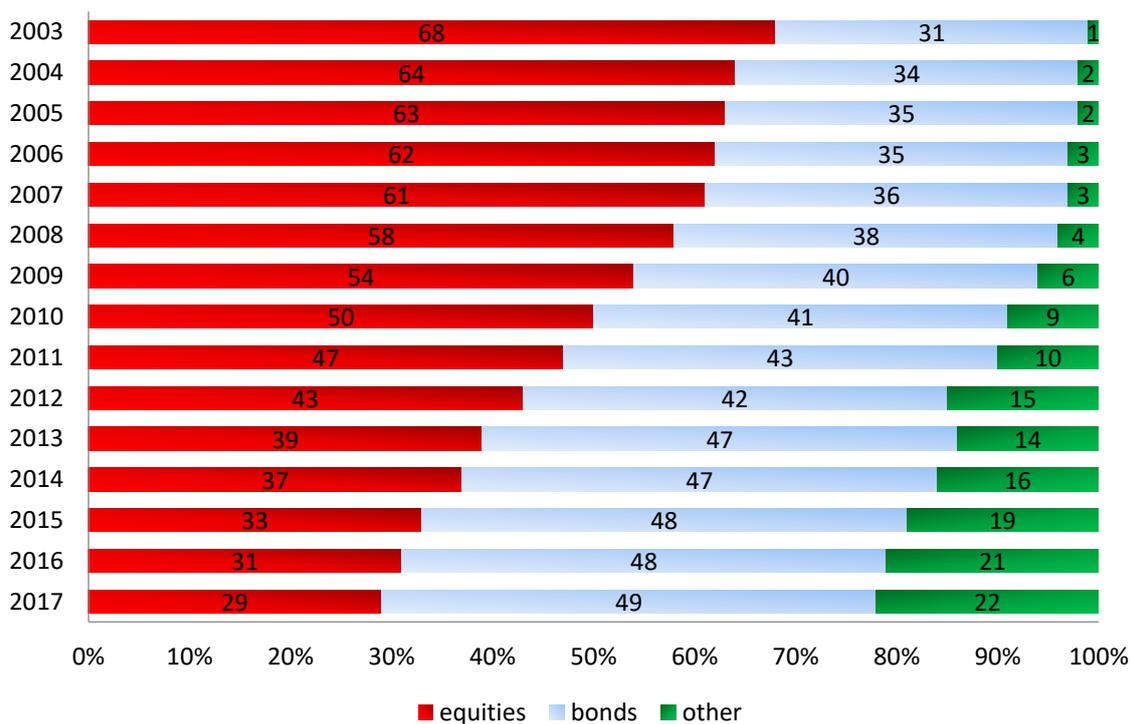


Figure 9: strategic asset allocation trend from 2003 to 2017, referring to UK plans, from: “European Asset Allocation Survey 2017”.

Therefore, the percentage of equity employed is lower than that of a few decades ago, but on the other hand, this trend has been compensated for a slight increase in bonds which are currently the largest component of the overall asset allocation for the average plan and also in alternatives allocations (especially in terms of hedge funds, real assets and growth-oriented fixed income) as can be seen visually from the graph below.

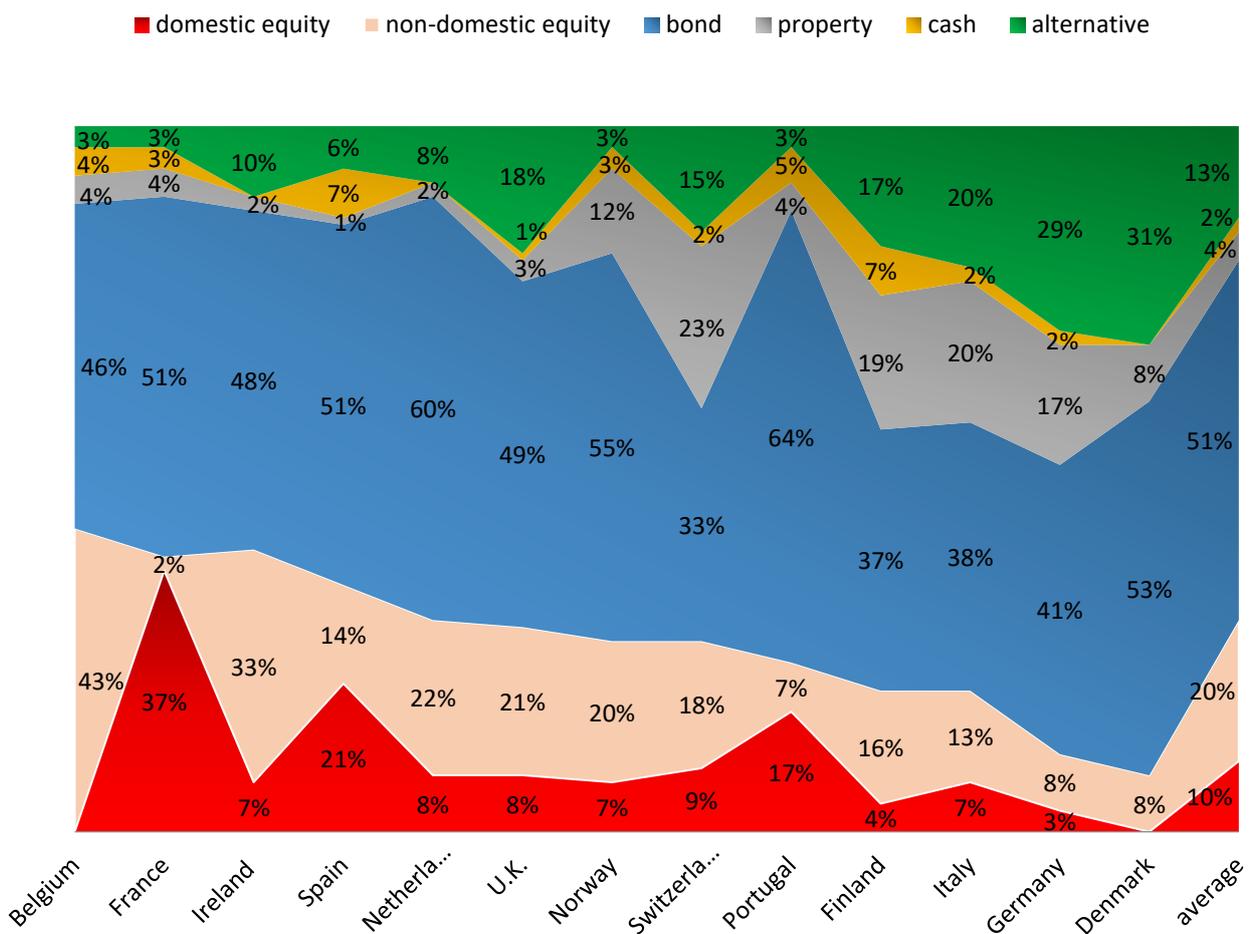


Figure 10 : strategic asset allocation by country in Eurozone (%), from: “European Asset Allocation Survey 2017”.

The future investment strategy will have to further include sustainability matters such as: environment, social and governance (ESG), which to date by the OECD analysis, that considers 77 of the world’s major pension funds, of these: most of them invest in instruments “green” such as shares belonging to the green or global-eco indices, green bonds (e.g. EIB eco-bonds) or funds on renewable energy, recycling or reducing CO₂

emissions, whereas only someone in social type instruments such as “social impact bonds”, company shares (often unlisted) with social impacts (for example, development of local markets).

6.2 UBI & UniCredit

First of all it is interesting to compare the proposed investment offers of the funds of other large Italian banking groups such as: UBI Banca S.p.A. and Unicredit S.p.A., since the supplementary pension fund for employees of UBI Group companies, in short form UBIFONDO, and the Pension Fund for employees of UniCredit Group companies, as called, are also pre-existing funds and aim to distribute the provision of pension complementary benefits of the mandatory social security system, according to the regulations prepared by COVIP, also pursuant to Legislative decree 5 December 2005, no. 252 and like the Intesa Sanpaolo’s Fund are equipped of an multi-compartment model which provides for a plurality of combinations capable of satisfying the needs of the members in terms of the time horizon and the expected risk-return profile.

The Pension Fund for employees of the UniCredit Group Companies proposes 4 investment compartments, of which the strategic asset allocation is reported below (referring to 12/31/2017).

- “*Comparto Garantito*”, whose management is aimed at achieving with a good probability returns at least equal to those of the severance pay:

Bonds		92.4%	
Government bonds 47.2%		Corporate bonds 44.3%	CIUs 0.9%
Gov. issuers 45.5%	Supra-national 1.7%		
Other		7.6%	

Table 6: strategic asset allocation of “Comparto Garantito”.

- “*Comparto 3 anni*”, which the management responds to the needs of a three-year time horizon and endorses investments aimed at favouring the stability of capital and results, bonds predominantly are issued from OECD countries and equity areas are predominantly in Europe:

Corporate bonds	17.32%
Government bonds	47.94%
Liquidity	0.06%
Equity	11.01%
Alternatives	6.53%
Real Estate	17.14%

Table 7: strategic asset allocation of “Comparto 3 anni”.

- “*Comparto 10 anni*”, where the management meets the needs of a ten-year time horizon with a balanced management choice, mainly in the OECD area; in addition, residual investment is envisaged in emerging market countries:

Corporate bonds	18.97%
Government bonds	25.86%
Liquidity	1.22%
Equity	30.58%
Alternatives	10.03%
Real Estate	13.35%

Table 8: strategic asset allocation of “Comparto 10 anni”.

- “*Comparto 15 anni*”, in which the management aims to the needs of a long-term horizon (over 15 years) and, investing mainly in higher yield assets, so accepts a higher risk exposure and a certain discontinuity of the results in the single financial years:

Corporate bonds	14.18%
Government bonds	8.03%
Liquidity	1.16%
Equity	52.59%
Alternatives	12.63%
Real Estate	11.42%

Table 9: strategic asset allocation of “Comparto 15 anni”.

UBIFONDO proposes a plurality of investment options to its members such as:

- *linea di investimento Crescita* (over 10 years): the line is invested for 60% in stocks and 40% in bonds. In both cases, diversification is favoured by country, sector and in the case of bond instruments, also by issuer and maturity. The portfolio is managed according to a logic prevalence of investments in the European area. As regards the bond component, a 10% of the portfolio is strategically allocated to the US markets, while for the equity component, a 20% is allocated to non-European developed markets and a residual amount of 5% is allocated to emerging. Investment in equity securities or debt instruments relating on the latter is limited to 10% of the portfolio's market value.
- *linea di investimento Prudente* (5 - 10 years): the management meets to the needs of a subject who, not excessively close to retirement, favours the increase in capital over the medium term, accepting exposure to average risk. Likewise the previous but with reduced percentage the bond component is strategically allocated to the US markets in 15%, while the equity part to non-European developed markets for the 10% of the portfolio. Also in this case the investment in equity securities or debt instruments relating to emerging countries is limited to 10%.
- *linea di investimento Garantita* (0 - 5 years): the management is aimed at achieving with high probability returns that are at least equal to those of the severance pay, over a multi-year time horizon. The presence of a guarantee of result allows to meet the

needs of a subject with a low risk appetite or now close to retirement. The composition of the portfolio is mainly made up of bond and money market securities. The other types of investments envisaged are the real estate sector and the equity one. The investment in bonds is done with a preference for issues having a rating at least equal to the investment grade, following a diversification for sectors, issuers and maturities, and on a residual basis through investments in lower rated assets.

6.3 The investment options of the Australia and New Zealand Banking Group Limited (ANZ)

In this section are described the main features and the offers of the Retirement Section of the ANZ Australian Staff Superannuation Scheme (the “Scheme” or “ANZ Staff Super”).

The information containing, apply to the pension options of ANZ Staff Super. As a member of the Retirement Section, he / she can decide where wants the superannuation invested by selecting one, or a combination, of the following options:

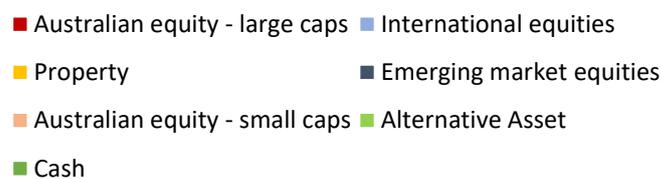
1. Aggressive Growth
2. Balanced Growth
3. Cautious
4. Cash

Each option has a different mix of risk and likely return, so it is possible to select the one or combination that best suits the needs and circumstances. Besides as already repeated for the others the investment returns applied to members’ accounts are based on movements in unit prices and will vary from year to year hence may be positive or negative and that earnings may grow at less than the rate of inflation. The options do not provide any capital guaranteed because their value of may rise and fall. The Fund give the possibility to switch investment options weekly even at no cost, choosing among four investor profiles that help to identify the attitude to best fit the savings and investment goals.

6.3.1 Aggressive or growth-orientated investor

An aggressive investor is willing to accept more risk to get a potentially higher return as the component in equity is predominant with Australian caps and International with 70% of total portfolio. Doing so the investor seeks growth-orientated investments which are more suited to a longer time horizon because if an investment takes a downturn, there is more time to wait for it to recover.

Aggressive Growth

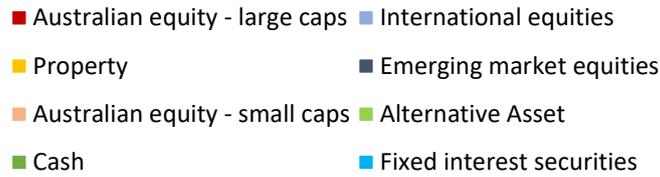


Graph 13: strategic asset allocation of “Aggressive Growth” option.

6.3.2 Balanced or diversified investor

An investor choosing a balanced portfolio is trying to achieve a comfortable mix of different types of investments as the percentage of the risky parts are the almost equal to those conservative, deciding that a diversified mix between growth and defensive investments is the best choice.

Balanced Growth

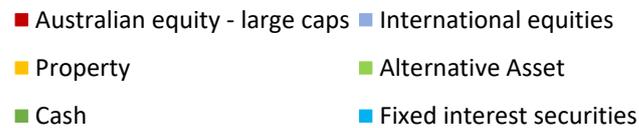


Graph 14: strategic asset allocation of “Balanced Growth” option.

6.3.3 Cautious or conservative investor

Most often, a cautious investor will be willing to accept lower returns to minimise risk. A cautious or conservative portfolio should have a fairly stable value from one year to the next, and will have a lower risk of loss. The Fund’s policy, however thinks that this is considered not to be the best approach, even if an individual is close to retirement as the returns are minimal.

Cautions

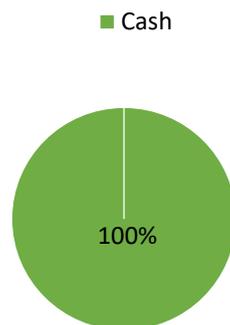


Graph 15: strategic asset allocation of “Caution” option.

6.3.4 Cash investor

A cash investor may be seeking to remove market risk in the short term for a specific reason and is willing to forgo expected capital growth or higher returns and logically this would not normally be appropriate for a long term strategy.

Cash - Defensive assets



Graph 16: strategic asset allocation of “Cash” option.

6.4 J.P. Morgan SmartRetirement Blend Funds

One case that can be represented in terms of asset allocation is that of the pension fund of one if not the first world bank namely JP Morgan Chase & Co. In this thesis we analyse the context of a fund whose membership is not only exclusive for employees like the previous cases but it is open to any type of investor wishing to build and benefit from a complementary form.

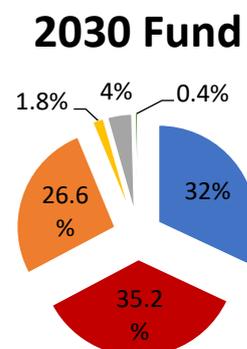
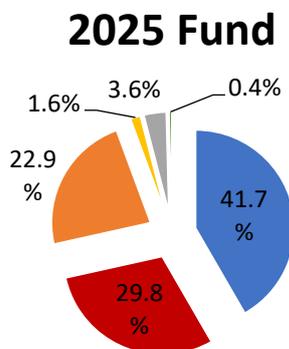
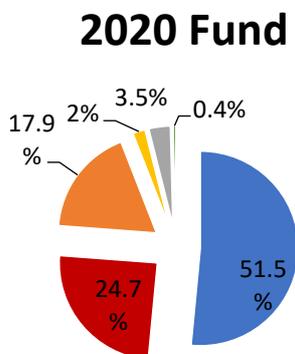
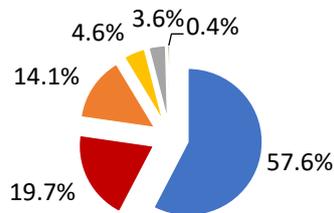
The program concerned is the JPMorgan SmartRetirement Blend Funds (“under U.S. 401 (k) Savings Plan”) where "Blend" in the Fund's name means the Fund's adviser, J.P. Morgan Investment Management Inc, in which an ample variety of investments is proposed, diversified according to the **target date**: this term is used to identify the retirement date.

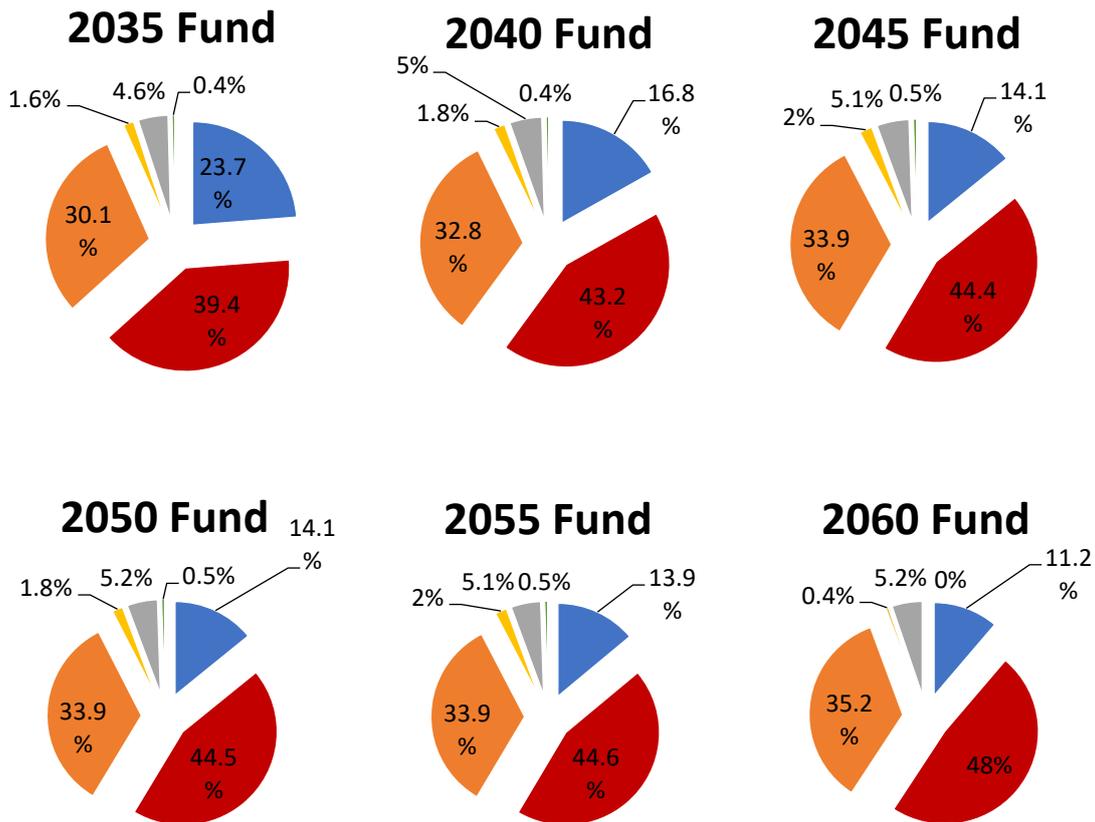
JPMorgan's offer includes a wide range of offers, 10 options to invest in: “*The SmartRetirement Blend Income, The SmartRetirement Blend 2020 Fund, SmartRetirement Blend 2025 Fund, SmartRetirement Blend 2030 Fund, SmartRetirement Blend 2035 Fund,*

SmartRetirement Blend 2040 Fund, SmartRetirement Blend 2045 Fund, SmartRetirement Blend 2050 Fund, SmartRetirement Blend 2055 Fund and SmartRetirement Blend 2060 Fund”, but the fund's choice by the adherent is based solely on his/her expected retirement, for this given the hypothesis that an average individual has to retire around 65 years the proposals differ in terms of asset allocation from "Income" for those who have a short expectation until those born in the 90s that probably will retire in 2060.

"SmartRetirement Blend Income Fund"

- Fixed Income
- U.S. Equity
- International Equity
- Short-Term Investments
- Alternative Asset
- U.S. Treasury Obligations





Graph 17: strategic asset allocation of the multi-funds SmartRetirement.

A visual feature analysing the pie charts above is that this pension scheme has a variety of investment funds based on the same logic of (eight) asset classes but which vary in weight to provide an appropriate proposal for each type of client. In fact, as shown above these Funds provide a mix of underlying investments, and as the retirement outlook increases and hence an individual is closer to the target date, that mix changes becoming more aggressive since it leads to increase the risky asset component to detrimental to the more conservative one.

“Adviser believes will outperform the S&P Target Date Retirement Income Index (the Fund’s benchmark) and peer group over the long term. In allocating the Fund’s assets between actively-managed underlying funds and underlying funds which are designed to replicate an index (index funds), the Adviser generally uses index funds for asset classes that are widely regarded as operating in markets where the price of the asset reflects all relevant information that is available about the intrinsic value of the asset (efficient markets). Examples of efficient markets include US Large Cap Equities, US Small/Mid Cap Equities, and Developed International Equities. The Adviser will review the Fund’s strategic target allocations at least

annually (generally, in the first quarter of each calendar year), and may adjust the targets in its discretion, consistent with the Fund's investment strategy. Consistent with this strategy, the Fund's strategic target allocations shown in the pie charts above may deviate at any given time by up to +/- 15% for fixed income, +/- 10% for equity, +/- 20% for money market/cash and cash equivalents and +/- 5% for commodity asset and sub-asset classes."¹⁶

The Funds' reduced strategic allocation to underlying funds that focused on total U.S. equity and the Funds' increased strategic allocation to emerging markets debt and real estate investment trusts detracted from absolute performance. Conversely, the Funds' increased strategic allocation to high yield bonds made a positive contribution to absolute performance.

"The Funds' portfolio managers believed that this diversification would help manage market volatility and contribute to the Funds' long-term risk-adjusted returns. In addition, they sought to invest in asset classes that they believed have had historically lower correlations to the broader fixed income and equity markets."¹⁷

6.5 The "Lifecycle" proposal of Barclays plc

As we have seen so far, retirement plans are characterized by the accumulation of wealth that is provided over time in the form of income on the basis of the returns obtained in the proposed investment options.

Usually the member has always the possibility to choose between one or more funds where to invest simultaneously and has many times the possibility of switching from one option to another or can easily decide to "buy and hold" (or called anchor) his initial portfolio in which the portfolio's asset allocation is allowed to drift with the effect of market action but can endure to higher portfolio volatility.

From what we have analysed in the previous section we have noticed that there are programs with many options suitable for each age group, so it would be nice because over time the needs change and so the investments should be adapted; to find a level of protection that periodically take away from the tough task, those who do not want to charge the burden of adjusting the portfolio to the distance of retirement, or not to contact a

¹⁷ Prospectus JPMorgan "SmartRetirement Blend Funds" 30 June 2018.

consultant, for this we introduce a non-traditional model - especially widespread in the U.S.A. and U.K. but still rare in Italy- defined as “**lifestyle or lifecycle**”.

The lifecycle is a new pattern of asset allocation that provides an automatic reallocation as with the approaching retirement age, it changes at predetermined intervals the degree of risk of the member's portfolio, reducing the component invested in funds with a higher risk profile for those with a lower one, in order to enlist market volatility and to tailor the strategy to the client.

Let's see now an example of an efficient lifecycle designed for the members of: "The Barclays Bank UK Retirement Fund (UKRF)".

On the starting date, in the plan (see chart below), the equity component is maximum and the fund's composition is diversified because the purpose is to participate in the long-term growth potential of the markets and at 10 years from the target date it is completed with the entry of "UKRF Over Years UK Gilt Index Fund" and "UKRF Cash Fund" gradually increasing up to 30% and 25% respectively, of the portfolio over the last few years of the social security pension investment, which offer greater stability but low yields.

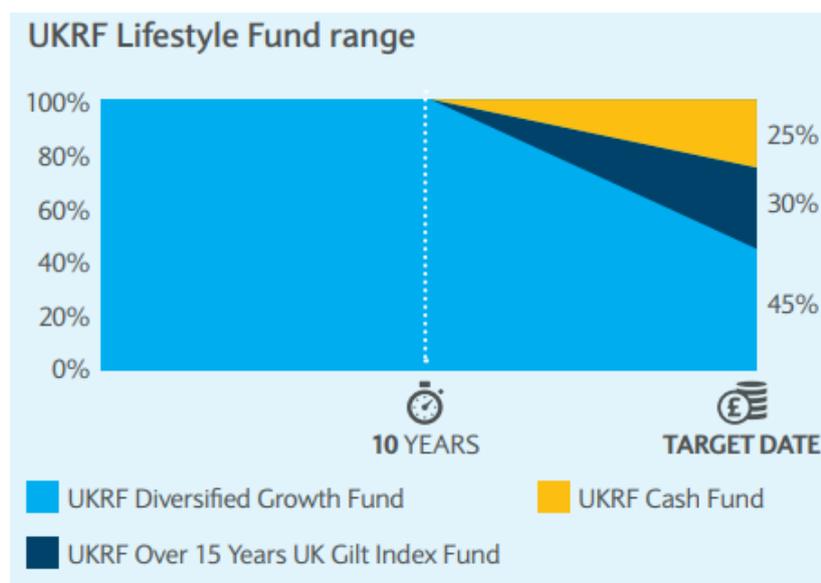


Figure 11: the Lifecycle of The “UKRF”.

So it is therefore a form that remodels over time the various components of assets according to the time horizon. It turns out to be the most efficient mechanism that gives more robust

outcomes unlike traditional plans which assume a relatively static asset allocation, because it optimizes the asset allocation by revising it year by year, offers a diversification of time, exploits the risk premium and mitigates volatility. The automaticity of this mechanism has the merit of standardizing the choices correlating them to the age of contribution and biographical, saving the interested on the decisions that in most cases are difficult even for finance professionals; this automation anyway, does not guarantee results and does not totally protect against neither a stock market crack neither on its recovery because the remuneration can change periodically also the performances vary over time.

Chapter 7

Conclusion

The purpose of this thesis was to observe the trend of complementary pension schemes, in particular that of Intesa Sanpaolo S.p.A..

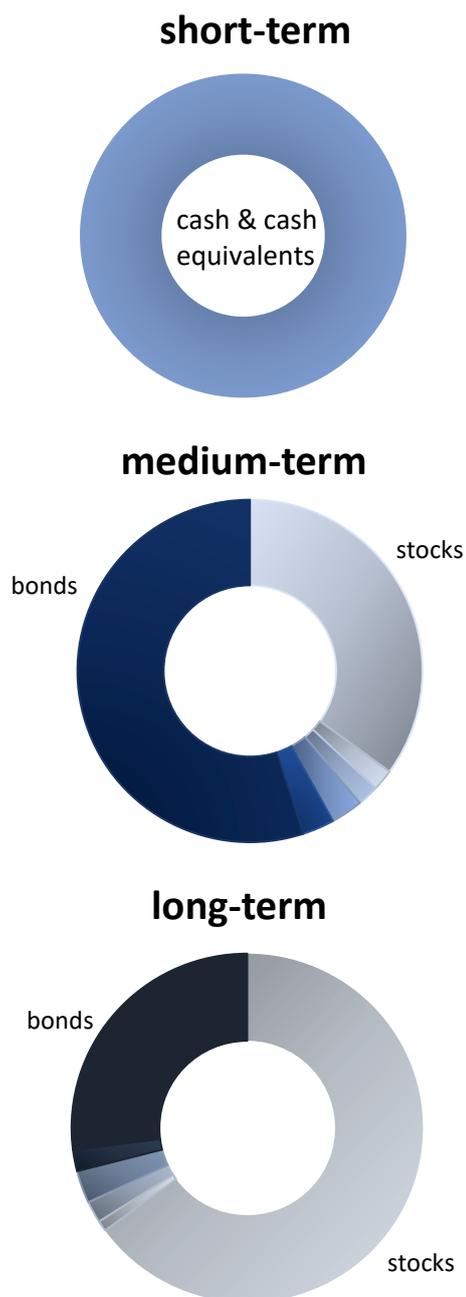
Before proceeding with the analysis, a mention was made to the theoretical aspects concerning asset allocation (with explanation of the Markowitz's frontier), the description of asset classes and the peculiarities and operations of modern institutional investors were taken into consideration.

All this part allowed to know the functioning of the social security pension form, of which the investment process was observed. Besides the various performance measurements and the benchmarks have been useful for the analysis and comparison of the various compartments and detection of returns to understand which have performed more than others and then we moved on to more in-depth observation about the strategic allocation of investment proposals in international cases.

In the period considered emerges the general preference of the members of the balanced and guaranteed funds due to their risk aversion, in which the equity percentage is limited (if not even absent) but present in the dynamic compartments. However, in spite of the crisis, the investments in equity securities were bullish, due to the fact that in the long term these instruments can offer greater returns than those guaranteed by the bonds.

From the analysis of the defined contribution pension fund of the Intesa Sanpaolo S.p.A. group, it emerges that the balanced, bond, and the guaranteed compartments, have recorded almost constant results over the years, with values that are in line with the average, unlike very irregular values in the equity investment lines, as shown by their higher TEV.

Recommended Financial Scenario for:



With these premises and having also compared with the foreign offers, it is now possible to summarize that it is necessary to try to align the investment strategy by goals can help to take different levels of risk according to various time horizons and make sure the investor is saving enough. In fact, we have analysed that in the case we are close to the target date it is favourable to adopt a strategy by choosing less risky asset classes to maintain capital stability over short time periods and that can give availability of immediately liquidity: these are for instance cash or securities with short duration. Investments in cash earn a lower gain than other asset classes but usually offer the lowest level of risk so with smaller fluctuations in return. Regarding medium-term targets, they are usually preferred to invest in bonds with good rating as

Figure 12: recommended strategies in case of temporal goals.

they are more secure and more reliable in terms of volatility than stocks, these latter are more recommended in the case of long-term objectives since the capital raised: thinking about the young workers, the amount collected is still low and therefore the risk appetite is higher and ensure higher returns in the lifelong.

At this point, however, it is necessary to shift attention to the modalities which technology is modifying the asset / wealth management, by offering transparent and accessible digital platforms and like many services, “the pensions industry is increasingly looking to digitalise its operations.”²² This phenomenon is finding concreteness in the development of **Fintech** (abbreviation of "financial technology"), a term used to indicate the different uses of technology in the finance industry that is taking place through two main modalities: the "**Robo-advisory**" and "**social digital trading**".

For Robo-advisor we mean online platforms based on algorithms and automated online responses that build and manage investment portfolios, calibrating them on the needs and on the profile of the individual customer through automated procedures, to give real-time counsel allowing to minimize the costs of the underlying portfolio, which usually have a huge impact on long time horizons (such as those generally expected from pension products).

“In fact, due to a fear of exposure to future complaints, many advisors demand large fees in exchange for their services, often leaving pensioners with no choice but to make crucial retirement decisions by themselves hence offering an effective and less costly alternative to a human advisor, this intelligent robotics can help steer retirees towards financial products and pension plans or investment in general that best suit their needs and savings goals.

The fundamental characteristic of the Robo-advisors is the provision of a financial advisory service, without necessarily the intervention of a consultant in the flesh and at a much lower cost, which allows opening the doors of the consultancy also to customers previously excluded .”¹⁸

The Robo-advisors are able to understand the customer profile, first analysing the objectives and then creating investment plans, through a personalized asset allocation. Created the plan, the robot follows the customer over time, rebalancing the portfolio when necessary.

First of all, as it happens for the actual consultation, the Robo-advisor submits an online questionnaire to the client, who has the purpose of profiling it, trying to extract necessary information for the construction of the investment portfolio. In fact, the questions normally

¹⁸ Article from www.worldfinance.com - Pension Fund Awards 2017

submitted concern the financial situation, the investment objectives he / she want to pursue, about financial knowledge and also the risk appetite.

Once sufficient data are obtained, the platform processes an allocation of the sums to be invested on the basis of certain classes of financial instruments and makes an investment proposal to the client. Subsequently, the system executes purchase orders for the various established assets. Often, at the end of this control phase, the robot, as continuous monitoring of investment performance, sends notifications to the investor to suggest to rebalance the portfolio, if some variables have changed.

Regarding the social digital trading services, they aim to create a synergic / community network offering a new way to operate in financial markets, giving more value to betting opportunities by sharing information designed to improve the general level of knowledge, incentivise exchanges and contacts and finally give investment opportunities on the equity, currency and other markets.

In this way, it is possible to know which positions are open and closed by the other participating traders and, on the other hand, make their positions known to other investors. Besides, there is a series of information and additional - integrated statistics that can be extracted such as for example discovering who are the traders that open more transactions and which traders are the most profitable or with the greatest percentage of success.

As can be deduced, these new investment systems are not a guarantee of reliability on achieving better results, nevertheless they offer the concrete opportunity to move quickly to the operational phase, replacing the acquisition of an internal awareness and informative about trading, placing trust in respect to the investor who has chosen to identify as a guarantor, which can obtain on his / her sides, advantages in terms of economic and also of popularity (generally proportional to the number of followers).

Further evolution of social trading was then represented by the so-called "copy trading": another type of automated investment strategy that allows the investor to be able to replicate the positions opened by a trader / leader who has chosen to follow, in such a way that portfolio is good-naturedly copied. In other words, once it has been defined the capital to be invest with the copy trading, then it is possible to follow all the traders that you intend, usually without additional costs, so that the software can replicate all their operations in real

time. In this way, when the trader earns, the follower will earn too; whether the trader suffers a loss, the follower will suffer too even though can set the stop-loss level, a threshold which if achieved will stop the process of copying by the follower's account by automatically.

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