

Proposition of a Practical Implementation of Maslowian Portfolio Theory

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October 27, 2016

Abstract

For many centuries investing in financial markets was only for the very rich. However, since the Second World War it became both possible and necessary for larger parts of the population to make investment decisions. “Possible”, because the wealth became and “necessary” because the increase life expectancy and the need to provide an (extra) income during retirement.

In Europe it was MIFID I and the USA it was FINRA Rule 2111 that gave direction to financial advisers: both regulations tell somehow that they expect good care from the advisor, but do not specify how good investment advice looks like. So, investment advisers looked back to a sixty year old theory (Markowitz’ “Mean Variance Theory”) that treated money as the only and ultimate life-goal and proposed to select for each investor one investment portfolio based on efficiency in terms of “risk” and return. The “optimal variance” was called “risk profile”.

In this paper we propose that investments should be used to attain real life-goals. Doing so it becomes obvious that the investments should be moulded around and created in function of these goals. Therefore it becomes natural to have multiple sub-portfolios with each their risk profile. With Maslowian Portfolio Theory the author adds a framework that puts emphasis on needs and in a natural way brings hierarchy in the goals as well as makes sure that no goals are missed.

The aim of this paper is to propose a practical implementation of Maslowian Portfolio Theory an study the impact on investment advice.

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1 Introduction

In the decades building up to the Global Meltdown of 2008 it became common practice to work product centred campaigns and pay little attention to the suitability of investment products. Typically the focus of sales people would be oriented periodically to new investment products (investment funds, insurance linked products, etc.) and the sales persons would get sales targets for a product. This implied that if the product was very risky that the pressure was on to sell more risky products.

During the 1990s many bank created its own rules on limiting the risk of miss-selling. Inspired by Markowitz’ “Modern Portfolio Theory” –see Markowitz (1952)– institutions already used something they would call “risk profile”. In fact it was something as a maximum volatility for each investor.

In November 2007 the Markets in Financial Instruments Directive 2004/39/EC (hereafter MIFID) entered into power and suddenly it became a very relevant question to ask “is the investment that I will sell to this client suited for him/her”?

However, it was not regulated, not calibrated and each customer could get a different treatment in different institutions. The merit of MIFID is that financial institutions –on both sides of the Atlantic– now typically use heuristics that are loosely based on the foundations of Markowitz (1952), who formulated a portfolio theory that is now called “Modern Portfolio Theory” (hereafter MPT).

The Modern Portfolio Theory¹ proposes

1. to find a diversified, optimal portfolio as opposed to the one best stock on the exchange;

¹Also known as “mean-variance” theory or “Modern Portfolio Theory”

2. that one chooses “efficient” investments (ie. not “dominated” by portfolios that have lower risk and the same or higher return or alternatively higher return and the same or lower risk);²
3. that an investor should consider *all* his/her investments in *one* portfolio (from the money to buy a sandwich tomorrow to the house in which one lives: all holdings should be considered in *one* portfolio!)

What the theory *not* tells is

1. what is to be considered as “risk” – in other words what risk measure to use,
2. how to select one of the many of possible portfolios,
3. nor which investment horizon to choose in order to optimize the portfolio.

in 1952, when this theory was written, it was a major step forward as it would provide a mechanism to select a portfolio that is typically well-diversified. This is without doubt a major contribution to the theories of investment selection.

But the omissions of the theory (ie. such as which portfolio to choose, what risk measure to use and what investment horizon to use) as well as the limitations (all investments in one portfolio) would lead to arbitrary implementation and incoherence between financial institutions in financial advice (see eg. Marinelli and Mazzoli (2010)).

The next idea came in 2009 with “Maslowian Portfolio Theory”—see De Brouwer (2009)—(MaPT hereafter). This theory argued that financial investments are not a goal in itself and should be considered as means to support other life goals. These other life goals are the human needs, that despite many modifications still is based on Maslow (1943)’s “hierarchy of human needs”. While the hierarchy itself may be questioned and even the content amended (see eg. Kenrick et al. (2010)): the foundations —that human needs are multiple and addressed at different moments— still stands.³

All fell naturally into place and a mathematical implementation did not have to wait long to appear: see De Brouwer (2011) and De Brouwer (2012). This cleared the path to an investor-centric advice model.

Having multiple investments portfolios—per investment goal—has many advantages:

1. **safety**: the probability to not achieve a particular life-goal is necessarily lower (as by definition means are segregated and will not automatically be used to fulfil other life goals);
2. **transparency**: the investor is able to see what means are for what goal and also in case of adverse market conditions it is much easier to see what goals are endangered and reconsider consciously;

²The careful reader will realize that this is actually the “dominance heuristic” used as a basic and simply MCDA method.

³Large institutions such as pension funds know already apply this theory and call it “asset-liability matching” — see eg. Amenc et al. (2009)

3. **counteract behavioural biases:** because of this improved transparency one is much less likely to “buy high and sell low”, or to succumb to panic sales on market drop-downs.
4. **more realistic selection methods and parameters for portfolio selection:** while MPT forces an investor to state his/her “optimal variance” (a counter-intuitive and abstract concept), more meaningful downside-risk-measures can be used relative to the investment goal;
5. **suitability:** portfolios resulting from a “MaPT-like reasoning” are much more likely to suite the investor
6. **consistency among the industry:** since more tangible methods can be used to estimate parameters that are relevant and do exist (in sharp contradiction with “a personal maximum volatility level” that does not even exist) one can postulate that if two institutions would advice on the same life-goals that the resulting portfolios would be less different;
7. **diversification over institutions becomes possible and meaningful:** a person who holds his/her pension savings in one institution and the savings for a car would in both cases get the right portfolio and not the same “arbitrary average”;
8. philosophically, we believe that it is important that **money is not treated as the unique life goal**, but rather as a mean that supports “real life goals”.

2 The traditional approach of investment advice

2.1 The Idea

Already in 1738 Bernoulli underlined the idea of diversification⁴ and Smith argued in 1759⁵ that the economy is driven by people that are behavioural actors. The decisions that create the economic system are governed by emotions such as greed and fear, which are not necessarily rational.

However the success of the utility theory (see von Neumann and Morgenstern (1944)) and the success of econometricians such as Samuelson gave birth to the believe that all could be calculated and economic actors were all rational beings. It would not take long till financial markets were declared “efficient” by Fama (see Fama (1965)), based on the “arbitrage argument of Friedman (1953).

It is with this backdrop –that assumed that people were fully rational and markets efficient– that Markowitz formulated in 1952 suggested that it would be

⁴See Bernoulli (1738).

⁵See Smith (1759).

a good idea to use the MCDA⁶ method of dominance to select portfolios. Later this approach became commonly known as Modern Portfolio Theory (hereafter MPT). That theory proposes to select diversified portfolios so that no other portfolio has a better return for the same risk. Another important aspect was that it suggested that all investments (from the cash to buy lunch to the house in which one lives) should be considered in *one* portfolio. This might be a reasonable approach for someone who is so rich that he/she does not have to worry about subsistence or specific important projects. When Markowitz wrote his theory, this made sense because for the last hundreds of years only very wealthy people were able to invest in financial markets.

The dominant practice till today remains largely based on this MPT. We will therefore refer to this approach where all investors have one risk profile and optimize one portfolio as “the traditional process for investment advice and decisions”, as proposed by Markowitz (1952), consists of the following steps:

1. All possible investments are characterized by their expected return, the level of uncertainty about this expected return (=risk) and the expected correlation with each of the other possible investments.
2. Given these characteristics, it is possible to calculate optimal portfolios which are composed of investments so that they combine the highest achievable expected return for a given level of risk and that are at the same time typically well-diversified.
3. Investors are risk averse, but the degree of risk aversion differs among investors. The most risk averse investors will prefer a portfolio with low risk, and accept a lower expected return. Other investors are willing to take more risks, which leads to more uncertainty combined with a higher –but less certain– expected return.
4. Last but not least, investors can only do this with considering ALL their investments in one portfolio and optimizing this global portfolio.

Despite overwhelming evidence that this approach is not in line with what comes natural for humans (see eg. Shefrin (2000); Kahneman (2011); Thaler (2015, 2016).) This approach of investing is still dominating the asset management and investment advice practice. Market specialists are constructing optimal portfolios with different degrees of risk, and advisers help to select the portfolio which offers the optimal combination of risk and return for a specific

⁶MCDA stands for “Multi Criteria Decision Analysis”, and it refers to the science (or should we call it “art”?) of deciding when there is not one but many functions to be optimized. In this paper, we encounter the following methods:

- dominance: the idea is to eliminate all alternatives that are clearly worse on all criteria (that is the Mean-Variance criterion or the MPT),
- WSM (weighted sum method): this is the investment questionnaire where each criterion is stripped of its unit, multiplied with a factor and added.

investor profile. This thinking seems to be at the origin of important building blocks of financial regulation, such as MIFID, are inspired by this approach.

We will further refer to this approach to investment advice as the “traditional approach”.

2.2 The Building Blocks of the Traditional Approach

The traditional approach will typically try to match an investor to one “risk profile”, typically this investment profile is supposed to be one (R, σ) tuple on the efficient frontier⁷, in that case it would be one market portfolio that is accompanied with more or less cash (as the capital asset pricing model (henceforth CAPM) predicts). However in most cases (and actually in all cases as far as the authors could check) the financial institution will choose not to follow CAPM, but rather rely on some rules of thumb and optimize fee income. Doing so they will sell sub-optimal portfolios (in a MPT sense) that basically manage the risk profile with their equity content.⁸

The least risky and the most risky portfolio is another arbitrary parameter in this approach and each institution will have its own choice. However, the largest problem in this approach is to determine the “risk profile of the investor”, arguably because it is something that does not exist. An investor has necessarily different risk profiles for different project (retirement would be very risk averse, education of kids would be rather risk averse and projects like a world travel or donations would be thought of as something that would be satisfying with different budgets, and if there are some assets left then one could expect even risk seeking behaviour for these assets) — see De Brouwer (2012); Shefrin and Statman (2000)

The main driver of the risk profile is probably linked to the importance, urgency and time horizon of the different investment projects that a person might have. However, they cannot be taken into account because the intention is to present just one risk profile. Instead the financial institution can rely on some rules of thumb, such as age: indeed a young person who still has a lot of possibility to “work his/her way out of financial misfortune” can objectively bear more risk. Though that will not necessarily be a good idea.

Also it can try to minimize its risk that the customer will misunderstand the investments, by taking education in the equation: someone with a higher education is supposed to understand the disclaimer and hence can be sold more risky assets.

The second large problem is to match the non-existent risk profile with the range of available risk profiles. This can be thought of as a multi criteria decision problem and one uses rules of thumb based on age, education, knowledge,

⁷ R stands for return and σ is the standard deviation of volatility of that return; and “efficient frontier” is the set of (R, σ) tuples that are not dominated by any other tuple.

⁸The CAPM prescribes that each optimal portfolio is a linear combination of cash (typically referred to as the “risk-free asset”) and one market portfolio. In reality advisers generally do not rely on the safest asset to create different mixes but on the most risky one, equities. This paradox is known as the “asset allocation paradox” — see Canner et al. (1997); Brennan and Xia (2002).

attitude towards risk, ambition, etc. Of course these criteria do not work in the same direction and one will have to select one risk profile based on many functions that have to be satisfied.⁹ Typically, one will choose the worst of all MCDA methods to tackle this problem: the weighted sum method, also referred to as “the questionnaire”.

Typically the well educated, young person who is knowledgeable about financial investments will be allocated a “high risk” risk profile. However our experience is that typically such people have many short term projects such as a down payment for real estate, marriage, start a family, etc. The person who is retired or close to retirement will typically get a very conservative portfolio, regardless the surplus or lack thereof.

2.3 Weaknesses of the traditional approach

The traditional approach of investing remains appealing because of its simple and straightforward design and the fact that it underlines the importance of diversification. However it is based on a number of important assumptions, which do not necessarily correspond with real needs and behaviour of investors. Using the traditional approach can lead to a dangerous gap between the investor’s expectations and what the industry is able to deliver.

The traditional approach can only consider one investment horizon. In reality, investors can have a multitude of investment horizons, depending on the projects they intend to finance with the result of their investments. Putting all in one portfolio almost eliminates the possibility to assess what is really happening and leads to panic when markets decrease.

The traditional approach assumes risk of investments to be stable. In reality, the risk of many investments is time dependent: a simple 10 year government bond carries a high interest rate risk for a short term investor, but is low risk for the long term investor (but interest rate risk is replaced by sovereign risk).

In the traditional approach, the investor gets *one* risk profile (ranging from conservative or low risk to dynamic or high risk). In reality, the same investor can be very risk averse for part of his/her investments, but a risk taker for another part of his assets. Behavioural finance has pointed to many of these behavioural characteristics, which are considered as “anomalies” by the traditional theory, and which are not taken into account in the traditional practice.

This results in a very non-transparent investment strategy. When for example the markets drop down, the investor knows that he/she lost a certain amount or percentage of the whole portfolio. However he/she cannot see which projects are endangered and which not. This will then lead to panic sales when markets are low and further enhances investment mistakes known as “myopic loss aversion” (Benartzi and Thaler (1995)) and “disposition effect” (Shefrin and Statman (1985)), that are proven to deteriorate private investor’s profit (see e.g. Barber and Odean (2001) and Odean (1999)).

⁹The science of selecting one solution when many criteria plays a role is called “Multi Criteria Decision Analysis” (henceforth MCDA)”

3 Maslowian Portfolio Theory

3.1 The concept of multiple goal investing

The approach of multiple goal investing is inspired by the work of the famous psychologist Maslow, who described a pyramid or hierarchy of needs, starting with basic needs like food, to more advanced needs like creativity. Needs of a higher order only comes on the forefront once the lower needs are more or less fulfilled.

Multiple goal investing starts with the recognition that people invest in order to be able to realize projects. Some of these projects have a short term horizon, others, like for example financing retirement have a very long term horizon. So, an optimization of the whole portfolio on one investment horizon does make little sense.

It was recognized by the school of behavioural finance that investors use “mental accounts” per projects (see Shefrin and Statman (2000)) and proposed as a normative theory by De Brouwer (see De Brouwer (2009)).

Maslowian Portfolio Theory theorizes that if investments are meant to cover human needs, then they should be build up along those needs: one sub-portfolio per important need. This not only justifies the use of multi-goal investments, but by using the hierarchy of human needs, one gets automatically a “hierarchy of investment goals”. It is this hierarchy of investments goals that can be used by the advisor as a rough guideline in order to make sure that no goals are forgotten and that goals are treated in a logical matter.

Roughly one can translate Maslow’s need levels as follows:

1. physiological need level: cash to buy lunch
2. safety need level: the “rainy day savings” as our own insurance for any disaster or explicit insurances (such as life insurance, unemployment insurance, fire insurance, etc.)
3. love and belonging needs: savings for offspring (college money, savings to get them started in life, etc.), partner, etc.
4. esteem needs: the nice car, the expensive travel, the second home, etc.
5. self actualization needs: priceless things to do, create and experience (also they might require money)

As there are in general more projects than available funds, the investor has to make a hierarchy of projects, –maybe– comparable to the hierarchy of Maslow. Only when the projects with basic priority are secured, will projects with less priority be considered. Each project gets its specific funding and an adapted investment strategy also taking into account the time horizon.

Investors also have to take a decision about financial risk taking, but in this approach, the chosen risk level is linked to the likeliness that certain projects will or will not be achievable. Taking more risk increases the average expected

return, and in that way makes money available to finance more projects, but also increases the risk that some of the planned projects will have to be abandoned if the expected returns are not realized. The advantage of the approach is that investment decisions are no longer linked to abstract concepts like “risk aversion”, but to real live choices and preferences, understandable for the average investor. Risk aversion comes back in a natural and intuitive way per investment goal or project.

3.2 Building blocks of multiple goal investing

The multiple goal investment packages will consist of several building blocks, that should be brought together by software and/or personal advice.

1. An **inventory of all assets and liabilities** is the starting point for the multiple goal investing process. Many software packages are already available to help investors to quantify their complete financial balance sheet, but it could be necessary to adapt them to the specific needs of this project. Some clear choices have to be made, for example in how far reserves in social security or pension funds are considered to be part of actual the portfolio of the individual investor.
2. Analysing the financial life cycle and the economic capital of an individual investor requires also **estimating the expected savings capacity for the future**. These future savings are depending on the future career prospects, the evolution of household spending and the retirement age. This part of the analysis confronts the investor with what can be called the “natural” evolution of his/her wealth. It can point to bottle necks such as insufficient savings or the need for protection against illness or death (given that these events can fundamentally change the financial balance).
3. Then **investment projects have to be defined**. Depending on the preference of the investor, it could well be that there is only one project such as financing retirement age. But the investor could also have several goals, including financing travel plans, succession targets, important investment projects in the medium term, etc.
4. Next one should **prioritize the projects**. The priority class should make clear the utility for the individual for the project:
 - Project that should be realized at any price as it is considered essential
 - Project that is very important, but life can be adapted if not realized
 - Project that is still important but will not have a fundamental influence on life if not realized
 - Project that is “nice to have”.

If needed, sub-categories can be made for each type of preference.

5. Finally one need to **determine an optimization method and parameters**, for which inspiration can be found in De Brouwer (2012). This solution will have to be discussed with the investor and eventually iterated till it is satisfying for each investment goal and coherent as a whole.

Once a first financial plan is made it has to be followed up, not only because market conditions might change but also because life goals can change. This means that it is essential to check periodically if the investment goals are not in danger (was the investor able to save what he/she planned, did he/she need to withdraw money for something that we did not foresee), are the market evolutions in line with our expectations. Also one should check if the investment goals stated are still relevant, if new goals appeared and if the ranking is still correct.

3.2.1 Weaknesses of Maslowian Portfolio Theory

Till now multi-goal investing is a heuristic that can work for the knowledgeable investor who has his/her priorities well understood and managed. However, in reality the goal-based approach has one crucial weakness: what if the investor forgets an important goal? This could potentially be dramatic as it would not be unusual that the other goals consume all the available investment means.

Another equally worrying question would be “While investors indeed to have behavioural portfolios (sub-portfolio per investment goal), we cannot deny that Markowitz got the Nobel price in 1991 for his Mean Variance Criterion. Should we not rather push investors to consider all assets into one portfolio?”.

Any serious institution that wants to base investment advice on a goal-based approach should be worried about these two questions. It is here that the De Brouwer’s 2009 theory, Maslowian Portfolio Theory, comes to the rescue. Maslowian portfolio theory starts from the idea that investments are supposed to support other life goals or “needs”. Human needs are well understood and elaborately studies in psychology¹⁰ and the essence of Maslow’s 1943 theory¹¹ still stands: humans have different needs and address them at different moments and if one need is not fulfilled the human feels bad.¹²

Another important aspect is that the “Goal-Oriented” approach is more time consuming and requires different skills of the sales staff. This means that there are not only costs involved in trainings staff but also some income streams will

¹⁰For an overview of relevant literature, including the latest development in evolutionary psychology: see De Brouwer (2012) — chapter 4, page 155.

¹¹ See Maslow (1943).

¹²This is the essence of Mental Accounting –the phenomenon that people have indeed separate “pockets” in their minds for separate goal, which is the foundation for Behavioural Portfolio Theory (the theory that describes that people build portfolios as separate layers (each layer finances a different goal) and do not –as Markowitz had suggested– consider all assets in one portfolio.

Also noteworthy in this context is that generally one refers to Thaler (1985) as the first description of mental accounting, however we would argue that the first description of mental accounting is Maslow (1943). Also note that mental accounting is the basis for another important mental bias “framing” — see Tversky and Kahneman (1981)

be less accessible. For example it will be more difficult to turn around assets and earn trading fees. The business model will have to shift to one where the goals of the investors and advisor are aligned.

Finally, we believe that it is challenging the strike the right balance between detail and robustness. It is clear that a perfect forecast and a plan that is so detailed that it takes into account the price of the daily sandwich does not make any sense (as each parameter is stochastic: not only the price of the sandwich, but also how much we will eat, which shop we choose, etc.) . . . nor would it be desirable to have a perfectly laid out plan for every minute, would it?

So, assumptions and simplifications have to be made. The art of striking the right balance is crucial. The author argues that it should be possible the kill two birds with one stone:

1. have detailed savings plan for each goal for the next year (based on the benchmark for each goal), and
2. have a rough plan for the next live stage or even better have an outline of how it could look like till the end.

3.3 A Few General Remarks and Implications

3.3.1 Legal Remarks: MiFID and FINRA

As well in the USA as in the EU there are legislations that instruct advisers on what is to be considered as good investment advice. In the USA, the FINRA regulations are quite general and in Europe the MIFID regulations are quite detailed. Their impact and the potential for goal based investment advice to fit within these regulations was already discussed in De Brouwer (2012); we repeat here the main lines.¹³

The philosophy behind the suitability requirements in the USA and the EU seems to be convergent. Both somehow allow the assumption that an investor has a unique risk profile composed of multiple variables—such as financial capacity, plans, and psychological factors—and both seem to assume that these multiple variables can be magically combined to give a one-dimensional variable—“risk tolerance”—which governs the boundary conditions for all mental accounts. Even if the wording of both regulations is actually a little wider,¹⁴ and allows

¹³More information can of course be found in the above mentioned book in chapter 9 on page 301 and following.

¹⁴MiFID and FINRA indeed allow for mental accounting and having different sub-portfolios, however by enumerating the information that must be requested about the investor and including, for example, his or her “knowledge and experience in the investment field relevant to the specific type of product or service” (in MiFID) or customer’s investment profile, age, investment experience, and risk tolerance (in FINRA rule 2111) one gives the false impression that this is a stance in favour of the one-risk-profile-per-investor paradigm. Indeed under a goal based investment approach, information—such as product knowledge, investment profile, age, investment experience, or risk tolerance—is irrelevant (or implicitly—not explicitly—taken into account). It is also relevant to note that in our approach, investors are treated equally, and are not discriminated against on the basis of their knowledge or age, but are advised those products that they need.

for some different interpretations, this is how the whole industry understands it. The result is that the regulations –unintentionally– steer the whole industry towards the use of risk questionnaires in order to determine the risk tolerance, and to apply this risk tolerance to all investment projects (mental and real accounts).

However, neither the EU commission nor FINRA provide a way to translate this know-your-customer principle in investment advice. This would indeed have been difficult, because there is no dominating line of thinking amongst scholars about how to perform this mapping. Here we have the interesting situation that law-makers are enforcing to map a set of characteristics on investment portfolios (or products), but that there is no conclusive scientific information on how to do this, nor is there evidence to conclude that this is überhaupt possible.¹⁵ One might argue here that it might have been prudent to verify the existence of a converging scientific literature on the subject, before issuing the regulation.

Furthermore, the EU Commission has clearly moved from a principle-based system of regulation to rule-based regulation. The dominating tendency is to avoid this principle-based system and impose a significant burden of rules and filing requirements for compliance-checking, as opposed to requiring a responsible attitude.

Both regulations have the best intentions, but –at least MiFID– has had a very adverse and regrettable effect. The result is that the investor is (a) in a weaker legal position because he/she has signed a disclaimer and (b) has the false impression that he/she is heard while in reality the investment advice is close to random, way to general to serve any purpose and in most cases plainly wrong — see eg. Marinelli and Mazzoli (2010); De Brouwer (2012).

Both regulations allow for the goal-based Maslowian approach, but are unintentionally misleading a whole industry where the victim is exactly the person that was supposed to get more protection.

3.3.2 About the Psychology of the Investor

Suppose an investor who has ample sources and long term goals ...but does not want to take any “risk”, meaning that he/she is myopic loss averse¹⁶ and

¹⁵This situation is similar to require car makers to install a device that reads the driver’s mind and shut the car down when the person is too aggressive. There is no scientific evidence to suggest that a person’s mind can be read, and car-makers are encouraged to read facial expressions and temperature patterns on which to base their decision. Also here there is no real scientific information about how to map those patterns to the elusive characteristic “aggressive” nor is there information to suggest that being “aggressive” is a dangerous state (because it is ill defined (is it a state or a character?), and not stable (it can change very fast)). Furthermore, if the car would stop working, the driver would get angry and law-makers could use this to argue that their point is proven.

¹⁶Myopic loss aversion refers to the fact that people typically attach too much importance on short term loss aversion. For example on a 50 years investment horizon a cash portfolio is much more risky than an equity portfolio –regardless the (coherent) risk measure uses. Of course it is possible to find ridiculous measures that are no risk measure at all –such as standard deviation or variance– but it should be clear that on such investment horizon a cash like portfolio is bound to lose on purchase power where an equity portfolio even in the worst

	FINRA	MiFID
in banking applicable to:	bank subsidiaries and affiliates registered as securities broker-dealers	all
in insurance applicable to:	annuity and life products	none
in securities sector applicable to:	securities brokers	all
field of application:	investment recommendations	advice services (discretionary portfolio management and investment advice)
for professional clients: information required from customers:	not applicable implicitly understood: investment objectives, financial capacity, experience and knowledge, liquidity needs, and risk tolerance	less strict rules explicitly required: investment objectives, financial capacity, and experience and knowledge

Table 1: The different requirements of MiFID art. 19 and FINRA rule 2111. Two important differences are that MiFID leaves the unit-linked insurance business untouched—an important loophole—and that on the other hand, institutional clients are also assumed to be in the need of “protection”.

prefers not to see any losses on short term—even if in long term this translates to more potential upside and similar downside risks.

Or assume the investor who does not like hedge funds and prefers not to have exposure to anything that is labelled “hedge fund”. Of course one can argue that this is a result from the psychological bias “labelling” and that this choice only reduces diversification and deteriorates the risk/return profile of the portfolio.

But, does this mean that we should “overrule” the preferences of this investor? This question is of course up to the advisor and the investor and it is difficult to take a general stand.

We see two possible stances.

1. Leave the choice up to the investor by showing the impact of his/her decisions
2. Allow for the investor’s psychology to influence the potential content of portfolios (of course this has two dimensions: one might avoid portfolios that are –as a total– too risky or portfolios that contain certain asset (classes))

In the traditional paradigm, the investor’s psychology will have a overwhelming important impact in the portfolio selection (although mostly in adverse and perverse ways¹⁷). We argue that this is wrong and propose that the investor’s psychology should be introduced so that it plays a moderate to limited role besides the real, tangible and rational possibilities to select a goal-based investment portfolio.

We suggest to use the opportunity of a financial plan rather as an effort to educate the investor and strive for financial well being, rather than to replicate his limitations and mistakes.

3.3.3 Product Development

If the Maslowian investment approach is implemented, other investment products might become important. For example, it might be attractive for the investor to have a “lifestyle investment fund”¹⁸ available that targets a certain date in the future. For example the fund would invest 20 years before that date all its assets in equities and will gradually opt for less volatile assets to end up at the end date 100% in cash. While this seems attractive and better suited to a goal-based advice it is only desirable to have in an environment where real investment advice cannot be given (or is not asked for).

scenarios observed yield a very attractive profit.

¹⁷For example the suggestion in MiFID that the advisor should inquiry about the investor’s education level is typically implemented so that people with only lower education cannot get the portfolios with the highest potential. While in general the less educated person will have relatively less resources to invest and hence should take less risk, this can and will limit those people especially for their long term goals. This implies that this rule will keep poor people poor as their retirement portfolio will not use the potential that comes with a long term goal.

¹⁸Also know as “target date investment funds”.

In all other cases, an investment that all by itself will change its risk profile is confusing and most probably will lead to miss-alignments of the desired portfolio and the actual portfolio. So, if one can reasonably assume that investors get a good advice every year or so, then the traditional product offer is well suited.

Indeed, the traditional product offer of investment funds –that are all well-diversified– and offer different risk-return profiles seems to offer all we need for goal based investing.

As we are mainly interested in long-term planning, it is not necessary to choose expensive investment funds that trade a lot. A fund with a rather passive approach, low entrance fees and low management fee is the preferred solution.¹⁹

3.4 Special Investments — e.g hedge funds and capital protected funds

For an advisor it is an ambitious task to include hedge funds (or any other exotic asset) in a portfolio. The advisor who optimizes portfolios using a mean-variance approach will be fooled by the fact that those asset have a distribution that is not-standard²⁰

Below we cite an example from the book “Maslowian Investment Theory: a Coherent Approach to Strategic Asset Allocation” (see De Brouwer (2012), section 8.3.4, pp. 284–287, and more information is in appendix C.2 on page 411). The asset classes considered are:

- cash: very safe but the variance is not zero as we deduct inflation
- bonds: more volatile than case, but less volatile than
- equities: the most volatile
- a “structured investment”: that is constructed so that it delivers a protection on initial capital (when the equity markets decrease), but when the markets increase, it will deliver 20% of that return
- a “hedge fund”: the problem here is that we only have the extremely good return versus volatility ratio that is based on the past performance. We have added artificially an additional downside risk.²¹

Considering for our example two risk measures: variance and expected short-fall (henceforth ES), the results can be found in Figure 1 on page 16. One notices that indeed the “least risky portfolio” according to variance is very well diversified: it contains all assets. However when we look at what is considered as the least risky portfolio by ES–right plot– we see that it proposes only one investment: the capital protected structure.

¹⁹While this might seem as a plea for passive asset management, this is not necessarily so. Simply stated, if everyone would follow a passive strategy, than this would make markets so inefficient that much money can be made wit a smart approach.

²⁰With this we means that the distribution is not even close to a Gaussian distribution.

²¹This is done by adding a second normal distribution (with a weight of 5%), centred around 50% loss and with a 5% standard deviation on top of the distribution based on historic returns.

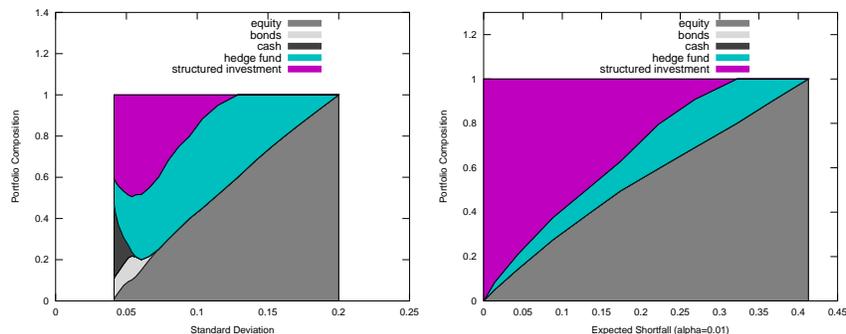


Figure 1: The portfolio optimizations with an incoherent risk measure—left— and a coherent risk measure—right.

Indeed, that is less diversified, but isn't this more intuitive? What would you consider as least risky: a portfolio that has a 17% probability²² to lose money (as proposed by variance) or one that has a 0% probability to lose money (as proposed by ES)?

The fact that variance provides not a very logical result is due to the fact that it is not a risk measure at all: it is not even linked to the losses, it is linked to profits as much as to losses! ES is a risk measure and will look at what losses one can have.

Another interesting observation is that the hedge fund very soon gets 40% of the weight when standard deviation is used. No reasonable person will for the conservative and average portfolios propose 40% in hedge funds. ES on the contrary proposes to put ca. 10% in hedge funds. Again we see that using a coherent risk measure provides the logical answer.

4 Conclusions

While the Maslowian investment approach, “Goal Based Investing” or even simply investing with multiple goals in mind seems to be in its infancy, the approach is natural and has been used successfully to run armies, countries, companies etc.

The author believes that the traditional approach (one risk profile based on a questionnaire) is not an answer to provide suitable portfolios, and creates a serious risk for those that more and more will have to be self reliant when retired.

Compared to actual practice, it would be easy to improve and allow simply an investment portfolio per investment goal. However practical considerations (such as being more time intensive, more clearly measurable, etc.) require more and more skilled staff unless one would be able to tap into the digital revolution.

²²See De Brouwer (2012) for details on the calculations.

This goal based Maslowian approach is

1. truly customer centric as it aligns itself with the investor's life and life goals;
2. safer (in case of adverse market situations, it is less likely not to attain certain goals);
3. avoids panic sales, as it provides a framework and insight;
4. helpful to have a fulfilled life, as it encourages to think about one's life and priorities.

The author hopes that with this paper –and the sources it cites– enough information is available to put Maslowian Investment Theory in practice.

Nomenclature

σ standard deviation, page 6

R return, page 6

CAPM Capital Asset Pricing Model, page 6

ES Expected Shortfall, page 15

MaPT Maslowian Portfolio Theory, page 3

MCDA Multi Criteria Decision Analysis, page 5

MIFID Markets in Financial Instruments Directive 2004/39/EC, page 2

MPT Modern Portfolio Theory, page 5

WSM Weighted Sum Method, page 5

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