

**Gambit White Paper Series**

**# 10404**

**PROFILE – OPTIMISE – COMPLY**

# Synthetic Risk and Reward Indicator (SRRI) and Investor Profiles

## Avoiding pitfalls of forced standardization in the UCITS IV “KID” document

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### Abstract

*With the KID, the new UCITS IV framework brings a useful standardized and simplified scheme to explain the risk of mutual funds to non-professional investors. The Synthetic Risk and Reward Indicator (SRRI) methodology defines how to assess a volatility equivalent for each type of funds, and recognizes the specificities of various types of investment vehicles in the process. But the SRRI methodology does not replace a proper investment profiling system. By forcing any type of risk to be translated into a volatility estimate, the approach overlooks investor's heterogeneity in the definition of risk. The SRRI synthetic approach is powerless to adequately reflect the trade-off between normal and extreme risks the way it is perceived by individual investors. It also misleadingly posits that fund returns are not necessarily related to volatility. We show that the analysis of investor profiles is a necessary complement to the KID in order to provide adequate advice to investors.*

### The UCITS IV context for risk and returns

#### *KID and the SRRI: Synthesizing a complex reality*

With the advent of the “UCITS IV” Directive (2009/65/EC) voted in June 2009, the European landscape of Undertakings for Collective Investments in Transferable Securities (UCITS) has experienced a decisive step towards transnational competitiveness and transparency of the fund industry for non-professional investors.

The Directive mostly addresses two goals: to enable UCITS promoters to rationalize and better organize their offerings, and to improve the level and quality of consumer information and protection, in the spirit of the MiFID Directive that came into force in 2007. Along with the second dimension, the major innovation is undeniably the replacement of the UCITS III “simplified prospectus” by a standardized two-page document called the Key Investor Information Document (KID). The KID is a kind of fact-sheet: it summarizes in a uniform way the essential information regarding the objectives, risks, performance and costs of the fund.

Because of its role, the KID has to provide a single framework for the description of the risk and return profile of the investment vehicle, whatever its purpose and degree of sophistication, provided that the fund falls inside the scope of UCITS IV. This unification constraint is particularly challenging given the diversity of UCITS, and the Committee of European Securities Regulators (CESR) has been appointed to provide the guidelines for the preparation of such a

document. Regarding risk and return, the outcome has resulted in a methodology described in circular document CESR/10-673 issued on July 1st, 2010.<sup>1</sup>

Besides providing sensitive solutions for technical issues such as the definition and periodicity of returns, missing data, and the stability of risk patterns, the circular crystallizes the central notion of risk through the Synthetic Risk and Reward Indicator (SRRI).

The SRRI rests upon two key principles: (i) the level of risk can be adequately translated (after some transformations or not) by the volatility of returns; and (ii) there must be a positive connection between the level of risk borne by the individual investor in a UCITS and the associated reward in terms of returns.

The point of view defended in this paper can be summarized as follows: *the SRRI tends to adequately fill the goal pursued by the KID, given the care of feasibility and pragmatism. Nevertheless, the association of UCITS IV with the MiFID requirements makes the KID an insufficient tool to assess the suitability of an investment advice. In particular, the key principles underlying the SRRI are essentially correct, but the oversimplification of the methodology might lead to their violation in practice.* In the second part of this paper, we illustrate why proper investor profiling should be used in conjunction with the KID, and how adequate advice can be given in the best interest of the individual investor in UCITS.

<sup>1</sup> The technical content of this circular is similar to the document CESR/09-1026, but adds that the importance of the harmonization deserves setting binding technical standards by the newly established European Securities and Markets Authority (ESMA), that replaces the CESR from 2011 on.

### KID and MiFID: An irreducible distance

After the release of the CESR technical document, the EFAMA and PwC have carried out a survey across European asset managers. Quite interestingly, the survey delivered mixed results. On the one hand, the study quotes: “over 70% of respondents believe the KID will help investors to assess, understand and compare products”. This is obviously perceived as a substantial progress over the UCITS III investor information framework. But on the other hand, “there were also a number of concerns over whether the two pages of the KID will be sufficient to give all the information they need to make sound investment decisions: 60% of respondents believe that the KID will not achieve this.” The main concern of respondents is the difficulty to express all relevant information in such a synthetic and simplified document.

In order to protect the non-professional consumer of financial services, the advice given to the investor should be transparent and adequate. In a sense, the demand for transparency is fulfilled by the KID, while the adequacy mostly falls under the scope of the “suitability” dimension, as defined in the Markets in Financial Instruments Directive (MiFID).

Article 35(4) of the MiFID Implementation Directive (2006/73/EC) states: “The information regarding the investment objectives of the client or potential client shall include, where relevant,

1. information on the length of time for which the client wishes to hold the investment,
2. his preferences regarding risk taking,
3. his risk profile,
4. and the purposes of the investment.”

Considering that the second bullet point indicates the investor’s appetite for risk or “risk tolerance”, a strict application of the seven-bucket risk scale provided in the KID provides a perfect mapping to this dimension. But what about the other ones? The horizon and objectives are reflected in bullets 1 and 4, while the third dimension reflects altogether the investor’s knowledge and experience of financial products, but also the way he personally defines the notion of risk.

Indeed, the CESR technical document indirectly reflects the potential sources of heterogeneity between investors, beyond the pure risk tolerance dimension. By defining five categories of funds (market, absolute return, total return, life cycle, and structured), the circular takes into account differences in the way risk should be computed. Especially for the absolute

return and structured funds, the notion of Value-at-Risk (VaR) is explicitly recognized. The VaR measures extreme risks, and its computation is not necessary if returns are normally distributed. In other words, the presence of VaR in the document indicates that the SRRI recognizes the relevance of alternative measures of risk, but forces a mapping of these risk types into a volatility assessment.

The simplification brought by the KID would suffice to inform investors if they were all supposed to comply with a pure mean-variance paradigm. But another facet of the UCITS IV Directive is precisely to encourage the use of MiFID compliant profiling methods, i.e. recognize the protein-like character of risk. Merely relying on the KID to map investment vehicles to risk profiles therefore potentially denies the richness of investor profiles. Simplification should not lead to simplism: this is the challenge of a proper understanding of the true scope of the KID.

### Pitfalls with SRRI

#### Pitfall with the first principle: “One size fits it all” risk measure

Because the KID risk scale maps volatilities into categories, any source of risk present in a fund must correspond to an equivalent volatility level. In a sense, the concept is similar to the “Equivalent Risky Allocation” developed by Plunus et al. (2010).

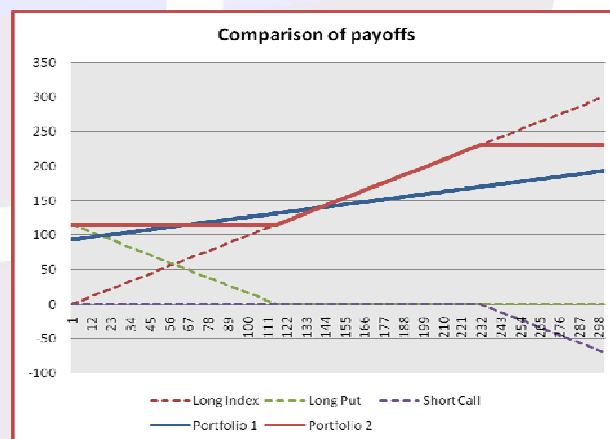


Figure 1

Comparison of payoffs between the market fund (linear mix 33% index – 67% cash) and the structured fund (collar on the index)

Consider a situation confronting a market fund and a very simple structured fund, as defined by the circular. The market fund (Portfolio 1) applies a constant asset allocation 33% equity benchmark – 67% cash. The structured fund (Portfolio 2) proposes a level of capital protection. It is a closed-end guaranteed capital fund on the same benchmark that provides a

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protection of 115% of the invested capital. The cost of this protection (essentially a put option) is offset by the sale of a call option for 230% of the capital, thereby creating a collar, as shown in the above figure.

Using the time series of benchmark returns (including the crisis) and the risk-free rate, the pattern of monthly returns displays very different characteristics for both portfolios. The market fund has low volatility but suffers from the stock market crash as it provides no specific protection. The structured fund features virtually the same volatility as the index, but provides some downside protection thanks to the protective put.

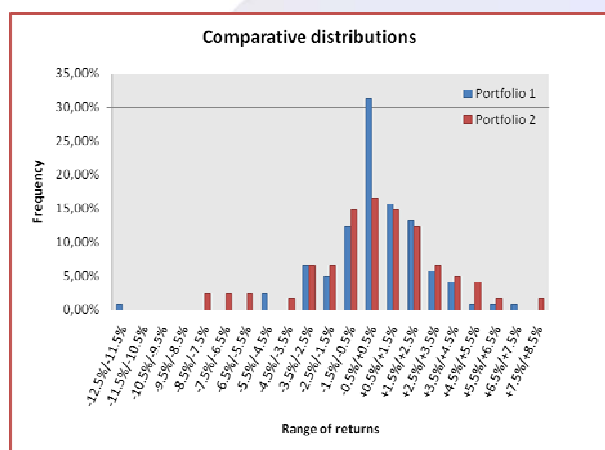


Figure 2

Comparative distributions (histograms) of monthly returns

The basic risk measures of these two portfolios perfectly illustrate their differences (see Table 1). Thanks to its negative leverage, Portfolio 1 has a lower volatility than the index, but shares the same unfavorable negative asymmetry and large fat-tailedness coefficients (resp. skewness and kurtosis). Portfolio 2 is more volatile, but benefits from the truncation of the tails through the options.

	Index	market fund	structured fund
St. Dev.	7.08%	2.34%	3.14%
Skewness	-1.26	-1.24	-0.44
Kurtosis	7.33	7.27	0.92
VaR(Gaussian)	16.47%	5.44%	7.30%
MVaR	26.34%	8.70%	8.06%

Table 1

Basic risk measures for both portfolios (based on monthly data)

What would the application of the SRRI on such funds deliver? For the market fund, the diagnosis is straightforward: the monthly volatility of the fund is 2.34%, corresponding to a yearly “risk” of  $2.34\% \times \sqrt{12} = 8.11\%$ . The fund goes to bucket #4 under the KID risk classification.

For the structured fund, the relevant metric is the Value-at-Risk (at a 99% confidence level). To reflect the fund’s skewness and kurtosis, we simply apply the Modified Value-at-Risk (MVaR), which delivers a reasonable proxy of the actual VaR. Leaving aside the drift adjustment whose impact would be marginal (see document CESR/10-673 for details), the reverse-engineering of the MVaR provides a volatility value of  $8.06\% / 2.33 \times \sqrt{12} = 11.98\%$ . The fund goes to bucket #5, i.e. is riskier than the market fund.

This is not true, because the structured fund is not in general riskier than the market fund! Indeed, the investor who would put emphasis on capital protection is likely to be more sensitive to a measure of extreme risk (like the VaR) than to a measure of volatility! For such a person, the last line of Table 1 indicates that the market fund is *riskier* than the structured fund. As shown in this example, sometimes the perception of risk by the investor puts large emphasis on higher moments of the distribution of returns than the volatility, and this is not captured by the SRRI approach. There is no mistake in this methodology, but the picture it delivers is limited and should be understood as such.

### ***Pitfall with the second principle: reward increases with volatility risk***

The SRRI methodology is in reality only about risk assessment. The assumption underlying the whole document is that the principles of Modern Portfolio Theory apply: there is a positive, monotonic relation between risk, measured by volatility, and returns. In the reverse-engineering approach leading to get volatility from VaR estimates, the SRRI method even assumes a Gaussian (= normal) distribution of fund returns, in a risk-neutral valuation environment.

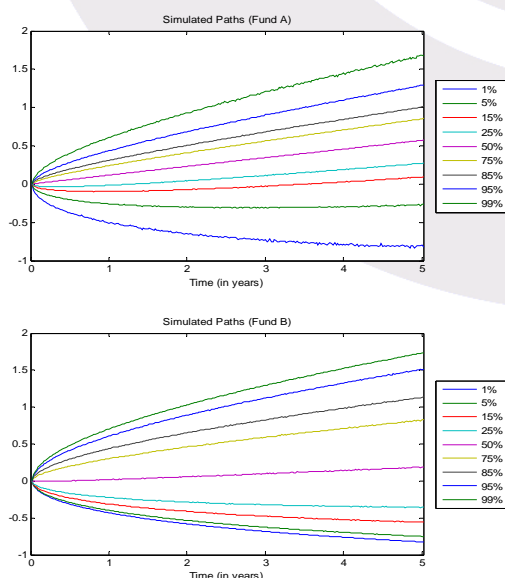
Even though there is no explicit recourse to a linear relation between risk and return, assuming a monotonic relation between risk and return (which is necessary for the interpretation of risk buckets) could be deceptive. There has been substantial and reproduced evidence, since the 70ies already, that skewness and kurtosis risk should be and are actually priced on the market. Investors like positive asymmetry of returns and are ready to give up some returns to benefit from better potential of ups than downs. Investors also dislike, on average, kurtosis risk. They assign a higher risk premium to investments that provide greater probability of extreme losses.

The following example shows the danger of blindly relying on the SRRI for assessing risk and return. Fund A and Fund B, two closed-end structured funds with a maturity of 5 years, have been set up in order to provide different exposures to skewness and kurtosis risk. Fund A displays a controlled level of volatility (22%, corresponding to bucket #6), but its returns are negatively skewed and highly leptokurtic (i.e. much higher kurtosis than the normal distribution). Because its exposure to extreme risks is important, its expected rate of return is quite high, similar to the one of an all-equity portfolio. By contrast, Fund B has appealing properties: with a positive skewness and a low kurtosis. Even though the yearly volatility is very high (32%, corresponding to bucket #7), the higher moments of returns act as a “cushion” and the expected return is closer to a bond portfolio. The statistical characteristics of these funds are summarized in Table 2.

	Fund A	Fund B
Exp. Return (yearly)	10.98%	5.23%
St. Dev. (yearly) (SRRI bucket)	22.00% (# 6)	32.00% (# 7)
Skewness	-0.5	0.3
Kurtosis	6	2

**Table 2**  
Risk and return measures for Fund A and Fund B

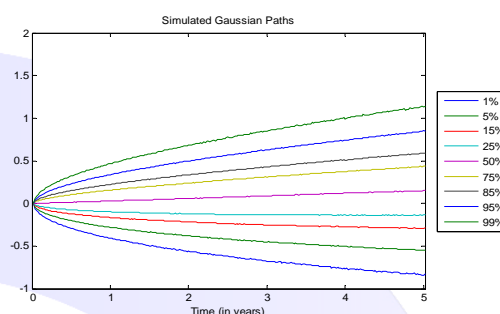
From the first two lines alone, we can immediately see that there is a *negative* relation between volatility and expected returns. But the story is not over yet! Let us apply the SRRI methodology on these two funds. First, we simulate the sample paths of total log returns over a 5-year period.



**Figure 3**

Comparative cumulative distributions (isodensities) for Fund A and Fund B

Figure 3 shows that the  $\text{VaR}_{99\%}$  of these two funds is identical. They should thus belong to the same risk bucket. To determine this common bucket, we reverse-engineer their VaR. The goal is to identify the virtual fund whose volatility would lead to the same VaR level with an expected return equal to the riskless interest rate, set at 3.00% for the example. The graph corresponding to this fund is reproduced in Figure 4.



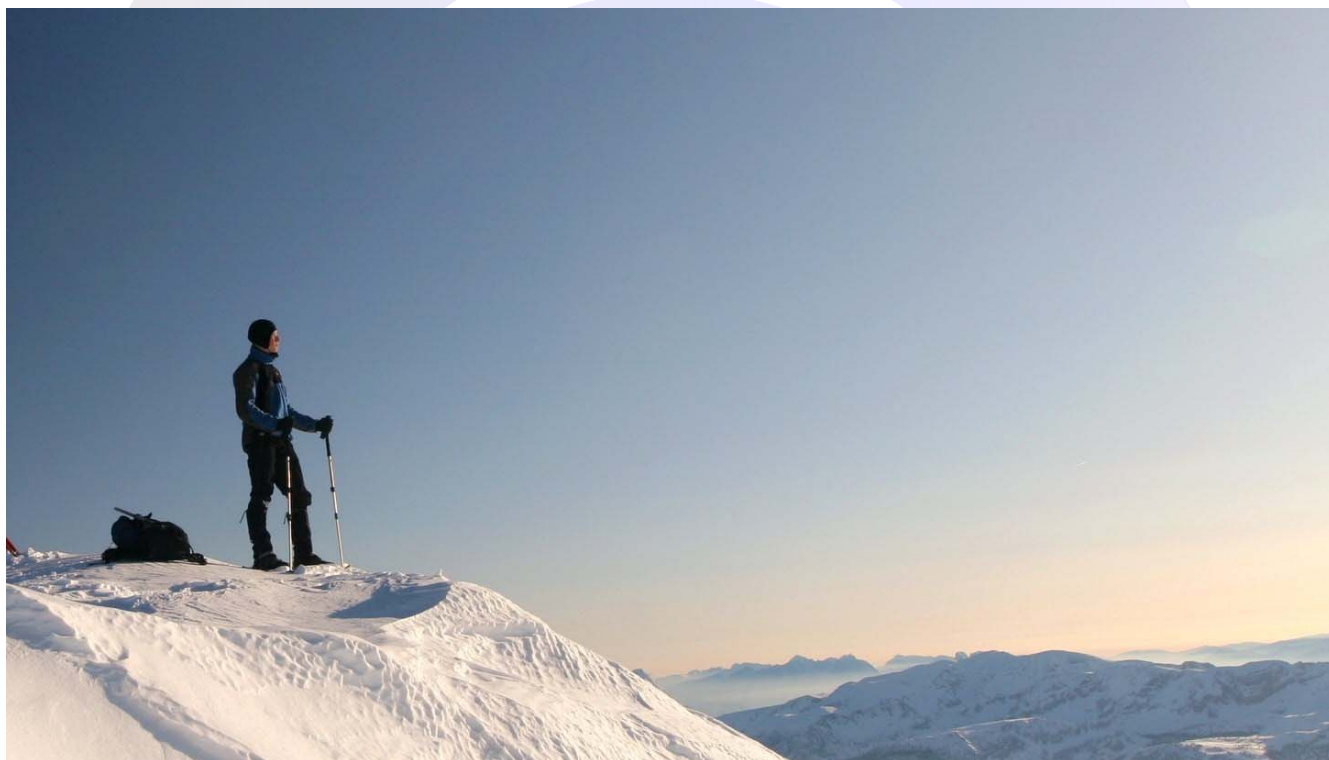
**Figure 4**

Cumulative distributions (isodensities) for the virtual Gaussian fund

What comes as a relative surprise is that this virtual Gaussian fund, despite the drift correction, has a volatility of 19% per annum: it belongs to bucket #6. In other terms, the SRRI method underestimates the risk of both funds, and assigns to them a potential reward which is very different from the one that they are likely to actually achieve.

It would be unfair to imagine that the CESR document, which summarizes the expertise of the whole asset management sector, ignores the difficulty to relate risk and return in a realistic environment. Rather, we should remind what the SRRI is and isn't about. The risk buckets only serve as a common indicator for a risk proxy, and provide a first indication of the type of reward that should be associated to the corresponding fund. Clearly, no investor would satisfy oneself with the same expected rate of return from a fund belonging to bucket #2 (volatility between 0.5 and 2.0%) or to bucket #5 (volatility between 10 to 15%) because their volatility distance is too important. But when it comes to arbitraging funds that are one or two buckets away from each other, a closer examination of their risk and reward properties is (more than) necessary. Regarding risk and return, the KID is thus necessarily a first indicator and does not exempt the advisor from going further in the assessment of the characteristics of the UCITS and its suitability for a non-professional investor whose sophistication is typically not sufficient to grasp the nuances brought in this example.

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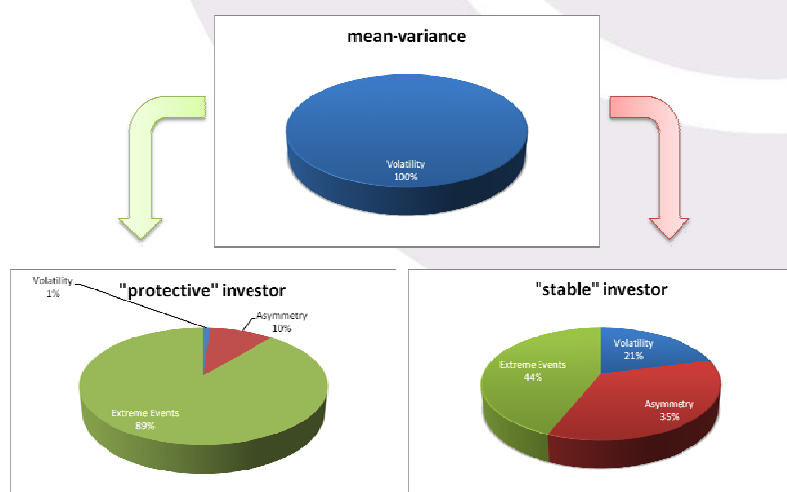
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## Investor profiling as a complement to SRRI

### Understanding what risk is about

Expected utility theory has been continually stretched over the years. Regardless of whether one believe or not in the behavioural finance approaches, the reliance on a structure of investor preferences solely based on the variance of returns as the measure of portfolio risk is outdated. Individual investors do care about what can happen under stressed conditions, and they assign to these events a weight which is proportionally higher than the one of “normal” events. In other, simple terms: the “mean-variance investor” is a myth; in a modern financial environment where UCITS are allowed to invest in different asset classes with some flexibility and derivative products, reflecting investor differences is a necessity.

On the basis of a utility function whose properties are well-understood in the decision sciences literature (see the background articles by Bell, 1988, 1995), it is possible to represent investor profiles regarding their perception of risk. This is translated into a weighted average of three types of risk: volatility, asymmetry of returns, and fat-tailedness of return distributions. The “stable” investor puts relatively more emphasis on volatility risk and the risk of having more often negative than positive returns. The “protective” investor mostly, if not only, cares about extreme events. Such profiles do not differ at all with respect to the investor’s risk appetite. This dimension is different from risk perception.



Source: GAMBIT Financial Solutions S.A.

**Figure 5**

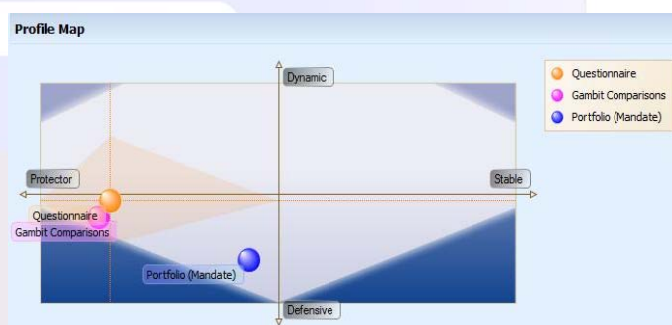
**New definitions of investors on the basis of the weight they put on the higher moments of the distribution of returns.**

For instance, the market fund examined above is likely to be more suitable for the stable investor, as his risk definition is closer to volatility. On the other hand, the structured fund controls the exposure to tail risk, which is a desirable feature for the protective investor whose risk definition would be closer to the MVaR. For this type of investor, the SRRI yields a misleading risk assessment.

### Properly relating risk and reward

The analysis of the pitfalls in SRRI methodology shows that risk seeking is not volatility seeking. Some investors are driven by the desire for capital protection or, more modestly, truncation of extreme losses. These investors could be wrongfully assigned a very low volatility bucket, while they indeed have some tolerance for this kind of risk, provided that the fund provides a safe haven against extreme losses.

A proper profiling system should account for this dimension, and correctly position investors according to their genuine appetite for risk. The challenge of such a system is reflected in the following graph, which represents the Gambit Profile Map™ that mixes the risk aversion and risk perception dimensions into a single framework.



**Figure 6**

**Gambit profile map, illustrating the discrepancy created by a single-dimensional profile.**

In Figure 6, we show the situation of an investor whose coordinates on the SRRI risk scale would lead to a bucket #1 or #2 UCITS (this is the point “Portfolio (Mandate)” corresponding to the reverse-profiling of his portfolio), but indeed this person cares about other sources of risk, and may accept a riskier portfolio provided that it provides sufficient capital or dividend protection.

With a more accurate profile, not only does the investor feel that a better service is rendered, but he also be lead to accept a portfolio that more accurately mixes different kinds of risk. For many people, there is some tolerance but it needs to be captured in a relevant fashion.

## Concluding Remarks

There is a clear challenge for the asset management industry with the advent of the UCITS IV regulation in 2011. The CESR has provided the KID document and SRRI methodology to ensure a decent information to investors and a level-playing field in an industry that has become increasingly heterogeneous over time.

We have already witnessed what typically happens in the aftermath of a crisis with unprecedented amplitude such as in 2008. Investors rush for safety, and put indecent amounts on savings account with almost null remuneration. The KID should provide them with a better feeling towards UCITS vehicles, and is an instrument that aims at restoring trust. But at the same time the SRRI methodology might lead to a tendency to favor a measure of volatility risk that penalizes some instruments over others, typically showing less return potential.

Having the KID at disposal represents a tremendous opportunity to capture interest and to install a new pedagogy towards individual investors in financial products. Financial advisors must seize this as an alleged reason to restrict to this comfortable document and not carry their duties: understanding the products they recommend and check their adequacy with investor profiles. This additional effort is not a sterile burden: in a Darwinian world where everyone acknowledges the importance of mastering the investment fields to protect the individual's patrimony, only those who manage to deliver added value of advice beyond a standardized playing field will eventually increase their share of the wallet.

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## About the Author



Georges Hübner is the Deloitte Professor of Financial Management at HEC-University of Liège. He is also Associate Professor of Finance at Maastricht University, Affiliate Professor at EDHEC (Lille/Nice) and Invited Professor at the University of Brussels. Georges regularly provides preparation seminars for the GARP (Global Association of Risk Professionals) and CAIA (Chartered Alternative Investment Analyst) certifications. He is an associate research fellow of the CREF at HEC Montreal.

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Georges has published numerous books and research articles about credit risk, hedge funds and derivatives. He is the inventor of the Generalized Treynor Ratio, a popular portfolio performance measure.