Contrasting regulatory approaches in risk management:

the Asia-Pacific and European experience

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Risk management is firmly in the spotlight amongst investors, regulators, academics and the media alike. As investors face a wider range of investment choices and investment vehicles, against a backdrop of continuing financial crises and the growing interconnected nature of our globalised economy, the focus on the measurement and monitoring of these investments is of critical importance. Regulators in particular have taken a keen interest in prescriptive advice for investors when considering risk measurement techniques. We take a look at two similar yet divergent approaches – the Synthetic Risk Reward Indicator (SRRI) and the Standard Risk Measure (SRM) – and discuss the pros and cons, and what it means for investors from a practical implementation perspective.

Introduction

Investors the world over face a markedly changed financial landscape, categorised by continuing investment market uncertainty. Against this backdrop, they have a wider range of investment choices in a globally interconnected economy, and can invest through multiple investment vehicles depending on their preference and motivation. While the search for higher returns continues, the focus on risk has been emphasised in the past five years, so much so that investors now consider their risk-reward trade-off rather than just a focus on return. However, that trade-off itself has been anything but simple to capture, measure and manage.

Regulators have played an important role in the risk management space, actively initiating regulation on risk measurement techniques to help investors focus on risk management and place a quantitative value on risk in their understanding of risk-return trade-offs. To that end, we compare and contrast two similar yet highly divergent approaches from two opposite ends of the world – the European Synthetic Risk Reward Indicator (SRRI) and the Australian Standard Risk Measure (SRM), with a view to highlighting the pros and cons of each approach, and what it means for the industry from a practical implementation perspective.

Background

Post the financial tsunami of 2008, regulators around the world tightened their focus on investor risk measurement and management with a view to being able to increase transparency and standardise the ability for investors to compare investment performance in a risk-adjusted manner. In Europe, the work had already begun in April 2007 when the European Commission requested the CESR[1] to provide technical advice in implementing key aspects of the UCITS regulation, focusing on the ability of investors "to understand the nature and the risks of the investment product that is being offered to them, and consequently, to take investment decisions on an informed basis"[2]. The proposal was for the adoption of an SRRI, and the methodology released in December 2009, focusing on **the volatility of the portfolio**.

On the other side of the world in Australia, the APRA[3] issued a letter to superannuation fund trustees in June 2010 warning of proposed guidance to come that would assist in the consistent labelling of investment options offered by the superannuation funds. The approach was to focus on **outcomes, specifically the probability of negative returns in X out of Y years**. Subsequently, a joint working group between the FSC[4], the ASFA[5] and industry participants released the guidance note in July 2011[6], with applicability from June 2012.

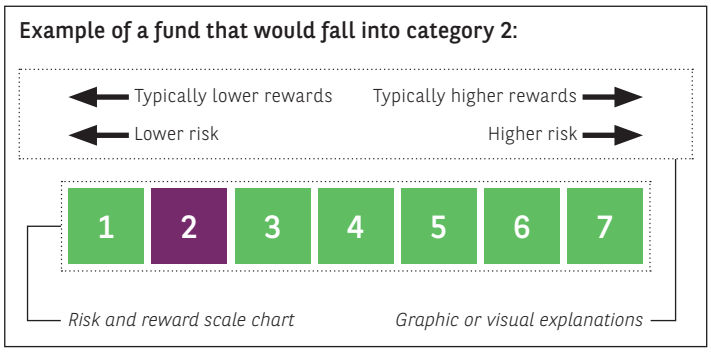
> While the measures share a basis in risk, the approaches are quite divergent – while the SRRI focuses on volatility, the SRM focuses on the propensity for negative returns in a given twenty year period

Similar yet contrasting approaches

We analyse four key aspects of the two measures, including the ranking system, the underlying basis of the calculation, the ex-post versus the ex-ante nature of the measures and the inclusion of fees in the measures.

Ranking system for investors

One interesting common highlight to both approaches however is the illustration of the risk measure in a scale form, from 1 to 7, increasing in the level of risk. The diagrams below show that the intent behind both sets of regulation is to allow investors to rank the investment strategies using a simple consolidated scoring system, depending, of course, on the underlying assumptions in the methodology.



Risk Class	Volatility Intervals	
	equal or above	less than
1	0%	0.5%
2	0.5%	2%
3	2%	5%
4	5%	10%
5	10%	15%
6	15%	25%
7	25%	

Figure 1: Sample of SRRI illustration

In the above table, the volatility is converted into a number that helps rank the portfolio on a sliding risk scale, with 1 being the lowest risk and 7 the highest risk. By comparison in the table below, the propensity of negative annual returns in any 20 year period is the critical factor converted to a number, ranking the portfolio on a similar scale, from 1 through to 7.

Risk Band	Risk Label	Estimated number of negative annual returns over any 20 year period
1	Very low	Less than 0.5
2	Low	0.5 to less than 1
3	Low to medium	1 to less than 2
4	Medium	2 to less than 3
5	Medium to high	3 to less than 4
6	High	4 to less than 6
7	Very high	6 or greater

Figure 2: Sample of the SRM illustration

While the direction of the ranking system is common to both indicators, one key difference is that the SRM places actual labels on the risk bands, from "very low" to "very high", describing the tendency to generate negative returns. The SRRI on the other hand points out that as you go higher up the risk scale there are "typically higher rewards, higher risk". In this sense the SRM is more explicit in its labelling of the risk bands than the SRRI.

The underlying basis

While the measures share a basis in risk, as can be seen, the approaches are quite divergent. The biggest divergence of course begins with the basis of the measures themselves – while the SRRI focuses on volatility, the SRM focuses on the propensity for negative returns in a given twenty year period. Both can of course be seen as valid measures of the inherent riskiness of a portfolio, but the interpretation of risk in the context of the variability of returns (SRRI) versus the propensity of loss (SRM) adds a unique dimension. Further, while the SRRI takes into account five years of historical performance to calculate volatility, the SRM looks forward one year to extrapolate out for the twenty year calculation. The implications for investors' investment time horizons are interesting, from a perspective of long term savings for retirement and the frequency with which investors may choose to rebalance their allocations to risk bands. This, of course, depends on their risk profile and risk appetite which is a function of time and investment objectives.

Ex-post versus ex-ante

Another important aspect of each of the approaches is that while one explicitly focuses on the past, using historical realised returns (the SRRI), the other explicitly states that it is "forward looking" (the SRM). The CESR does note that "since the portfolio allocation of these types of fund may change substantially over time, their historical volatility may not appropriately represent their actual risk and reward profile at the time of the computation". This is tackled by requirements in the calculation to revise the indicator if the portfolio moves outside of its risk category for four months. The SRM also advocates a health check on the indicator, in that trustees "should review the calculation of the Standard Risk Measure at least annually or earlier if and when the trustee believes there has been a material change to the underlying risk and return characteristics of the investment option". What is interesting is that the definition of "whether such a change constitutes a reportable significant event" is up to the trustees' discretion. This is all the more important given that the trustees need to "develop a set of capital market assumptions (return, volatility, correlation)" in order to calculate the SRM, including the "use [of] alpha (active management) assumptions".

Net of fees

Another interesting aspect to consider is that both the SRRI and the SRM are calculations based upon net of fee returns, whereas typically the calculation of risk statistics in the industry is on a gross of fees basis. The rationale provided for a gross of fee calculation is that typically the ex-post or the ex-ante measurement of risk is to assess a portfolio investment strategy rather than a product based on that investment strategy; after all the level of fees paid by an investor is variable and depends on various factors, such as their size, investment vehicle choice and so on. Hence the ethos of risk analysis is the empirical assessment of a strategy or track record. From an investor's perspective, it is of course the whole performance, including the impact of fees that matters the most given that the end result to the investor is always post some level of fees. The ASFA and FSC do note however that "the Standard Risk Measure is not a tool to disclose and compare fees... all other things being equal, higher fees will increase the probability of a negative return".

Points for investors to consider

Risk – through the windscreen or the rear-view mirror

As noted above, one key material difference is the ex-post versus the ex-ante basis for the calculation of the measures. Risk can thus be thought of as being seen through the rear-view mirror (ex-post) or forward looking, through the windscreen (ex-ante). Both approaches have their advantages and drawbacks, as can be seen in the table below:

Characteristic	Ex-Post	Ex-Ante
What question does it address?	"What was the risk observed in my fund?"	"What risk should I take to meet my performance goals?"
What does it help with?	Quantifies the track record of a strategy in risk terms	Provides an indication of the sources of risk in the current portfolio
What is it based upon?	Based on past returns of the portfolio	Based on current portfolio composition
What is it?	Realised return distribution analysis	Expected return based on the ex-post return distribution analysis

Figure 3: Ex-post versus ex-ante risk

Both ex-post risk and ex-ante analysis, of course, are based on the past to some degree but there are significant differences in the way the past is used in the approaches. Ex-post risk simply uses the realised returns of the portfolio to construct the volatility of the portfolio. As such it is highly dependent on the timeframe chosen, even if measured over three to five years. As can be seen in the below example, the volatility of the portfolio over the past three and five years on a rolling basis are quite divergent.

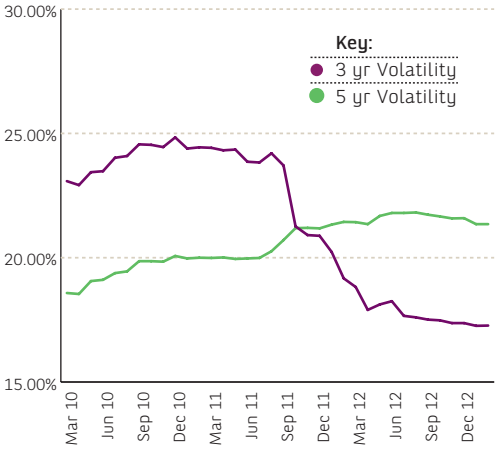


Figure 4: Rolling annualised volatility (MSCI all country world net in USD)

Source: BNP Paribas Securities Services Investment Reporting and Performance

Ex-ante analysis uses historical relationships between asset classes and assets in terms of correlations and volatility to construct a forward looking distribution. Hence while there is reliance upon those historical relationships, they are not the sole basis of the resulting analysis. Ex-ante risk does however rely upon assumptions on the likely path of returns, notably the normal distribution.

An advantage of ex-post analysis of course is the ease of calculation; an array of ex-post statistics can be calculated from a basic time series of returns whereas ex-ante risk typically requires a risk model to produce the volatility distribution. Counterbalancing this of course is that ex-post risk is by definition after the fact – hence with a historical analysis we are simply interpreting what has occurred, rather than being able to change the events in any way. Ex-ante risk on the other hand allows for proactive action, as the analysis can be run on the current day of the portfolio. This allows investors to be able to reposition the portfolio either strategically or tactically in a very adroit manner.

From a holistic risk management perspective neither ex-post nor ex-ante by themselves is sufficient for an investor in this increasingly complex world; a complete risk management framework recognises the use of both to be able to make informed investment decisions. For instance, the ex-post analysis can serve as a real world test of the predictive risk models, thereby improving their calibration and effectiveness. Equally, ex-ante risk output can be used to understand whether the implemented portfolio meets the investment expectations and importantly where it diverges. With regards to the indicators, both can be complemented with the use of other risk measurement techniques, including Value at Risk, Risk Attribution, Stress Testing, Scenario Analysis and Liquidity Risk.

Figure 5: A holistic approach to risk

Good and bad volatility

A critical aspect of the SRRI is that is does not distinguish between the volatility of positive and negative returns, rather, adopting the entire volatility measure as the indication of the overall level of risk of the portfolio. As an investor, you are concerned more about the volatility of the returns on the downside and being able to protect yourself from large drawdowns. However for returns on the upside, increased volatility is actually a positive in that it provides greater opportunity for higher returns. As the below hypothetical example shows, two portfolios with similar overall volatility can produce markedly different return outcomes given the split in upside and downside volatility. While portfolio 1 and 2 both share the same annualised volatility, the semi-standard deviation for portfolio 2 is much lower signifying that the portfolio has lesser variability on the downside (therefore a greater level of predictability, important in

terms of hedging on the downside). We can also see that portfolio 2 has a much higher overall annualised return than portfolio 1, thereby the 'good' volatility is being used to good effect in generating positive returns for the investor.

Statistic	Portfolio 1	Portfolio 2
Annualised return	-0.74%	7.16%
Mean return	-0.06%	0.58%
Volatility (annualised)	3.46%	3.46%
Semi-standard deviation (annualised)	2.96%	1.23%

Figure 6: Example of good and bad volatility

Source: BNP Paribas Securities Services Investment Reporting and Performance

One way investors can add to their informed decision making process is to consider the use of commonly used ex-post risk ratios such as the Sharpe Ratio and the Sortino Ratio, both of which have a focus on converting returns and risk into easily digestible ratios of risk-return trade-off. Additionally, investors can also consider complementary supporting statistics such as Maximum Drawdown, and the performance of the portfolio in bull and bear markets as seen in the sample below.

Bull market

Risk-free rate- Euribor 3M (3,34%)

Alpha	0.03
Beta	0.98
R squared	0.94
Number of months	33

Bear market

Risk-free rate- Euribor 3M (3,34%)

Alpha	-0.12
Beta	1.02
R squared	0.95
Number of months	16

Consistency

% of months with positive performance	72.73
% of outperforming months	47.27
Number of consecutive outperforming months	11
Maximum monthly performance in %	10.02
Gain/loss	1.43

Figure 7: Sample of complementary risk statistics

Balancing the quantitative and the qualitative

One point of note between the two approaches is that while both attempt to distil the complex notions of risk into more easily digestible numbers for investors, both approaches still favour the inclusion of qualitative narratives to explain the indicators, as well as the material risks not covered in the methodologies. CESR notes that "appropriate wording should be used to avoid consumers being misled about the limits of the information shown. The methodology may not capture certain risks. Therefore the indicator should be accompanied by a narrative description of the material risks which are not captured by the methodology". Both the FSC and ASFA point out that "the Standard Risk Measure is not a complete assessment of all forms of investment risk... members should still ensure they are comfortable with the risks and potential losses associated with their chosen investment option/s".

From a holistic risk management perspective this is a sound approach, as there is no one single measure that can aim to be complete in its measurement of risk in all the various forms that can occur – for instance, neither measure says anything about credit or liquidity risk. Investors have to assess the indicators as barometers of risk, plus apply the overlay of their risk profile, risk preferences and of course the suitability of the investments to their investment objectives. In any risk analysis, it is imperative to be able to place the results in the right context, such that informed investment decisions result. A model will always provide accuracy, consistency and repeatability of results, but it needs context to be truly informative. For instance, an SRRI result of 5 places the portfolio in a volatility band of between 10-15% annualised volatility. Whether this is too high or too low or even appropriate depends on the axis of comparison – comparing within an asset class, say international equities, we might find that other funds typically are ranked in the top risk class (SRRI of 7). In this case the portfolio is 'less risky' than its peers, whereas for an investor pursuing a moderate risk strategy could see the portfolio as 'risky'.

Interestingly enough the SRM is explicit in one regard: it notes that "to ensure true to label disclosure, the investment option label "Conservative" should only be utilized where the estimated number of negative annual returns over any 20 year period is less than 2". This thereby places a benchmark for trustees when labelling their investment options for their members, as to what can be considered "less" or "more" risky.

Implementing the measures in practice

The practical implications of implementing these measures in a scalable manner cannot be underestimated, as the scope and reach remain large and complex. First and foremost is the data challenge – ensuring that the capture, maintenance and management of complex datasets required to calculate the underlying risk statistics needed for the indicators is typically a challenge for investors, especially given the plethora of investment options available. It is however the core business of a global asset servicer, with experience in multi-currency portfolio servicing, using a single global platform. This brings consistency and accuracy in terms of portfolio returns and positions, as well as improved operational efficiency through harmonised globally consistent processes.

The second challenge typically is the experience and expertise in the risk field, required to interpret and implement the regulation in a scalable and effective manner. Both indicators while prima facie appear to be simple in construction, contain significant differences as has been discussed above. Global asset servicers play an important role in bringing together a network of connected product and industry specialists, who pool their local expertise to create an enriched global knowledge base. Global asset servicers also provide knowledge shares, workshops and participate in industry forums to better align the various interested stakeholders, including regulators and investors. For example, our experience with the SRRI covers over 5,000 portfolios through weekly computations and a readily available model for the SRM, using a series of transparent capital market assumptions and flexibility of reporting to the investor.

The third challenge is the actual implementation and reporting of these indicators in practice. Even if investors overcome the challenges of data management and product expertise, a key element is the platform through which these indicators are calculated and reported. Investors face challenges in consolidating information across multiple portfolios and strategies, as well as providing succinct analytical information to their key stakeholders both internal and external. A critical requirement is a comprehensive analytical platform that can integrate both ex-post and ex-ante calculations on a single harmonised dataset plus allow reporting through a variety of delivery media. Crucially, given the move to portable devices such as iPAD for convenience and corporate social responsibility reasons, investors are increasingly demanding such information to monitor their risk on iPAD without compromise. Our product development and innovation has provided investors globally industry-leading solutions to meet these challenges. For instance, investors can use our online portal DNA to monitor not only the indicators, but a vast range of complementary risk analytics, covering both the ex-post and ex-ante spectrum. They can also access our analytics through a comprehensive array of customisable dashboards on iPAD, with the unique ability to drill down to the sources of risk, as well across the spectrum of asset classes for a complete picture of their investments.

Summary

Regulation has become far more prevalent in the investment world given the ongoing crises and market shocks, as investors seek clarity and transparency on their investments, plus greater understanding for more informed decision making. The two indicators studied in this paper provide interesting counterpoints to the risk measurement debate, through seemingly diverse approaches to risk. Investors using these indicators need to assess the risks of their portfolios using a comprehensive, integrated and holistic risk management framework, and balance the quantitative with the qualitative. The practical aspects of implementing these measures and indeed a rigorous risk management framework is uniquely supported by strong global asset servicers, who are able to leverage their global product development, the strength of a single global platform and an integrated view of ex-post and ex-ante risk analytics, complemented by local expertise.

1. Committee of European Securities Regulators.
2. CESR, CESR's technical advice to the European Commission on the level 2 measures related to the format and content of Key Information Document disclosures for UCITS, CESR/09-949, October 2009.
3. Australian Prudential Regulatory Authority.
4. Financial Services Council.
5. Association of Superannuation Funds of Australia.
6. ASFA, FSC, Standard Risk Measure Guidance Paper for Trustees, July 2011.

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