Note on CESR's recommendations for the calculation of a synthetic risk reward indicator

- **CESR's recommendations to the European Commission on the methodology to create a synthetic risk reward indicator do not meet its own criteria, namely that the results should avoid excessive bunching and that the rankings should be relatively stable over time.**
- **Using CESR's recommended category boundaries produces excessive bunching, with one-third of asset classes and one half of authorised funds having category 6 as their modal risk category, and no asset class has either category 1 or 7 as its modal rank. This will make it harder for consumers to differentiate between funds in order to make better decisions. It is possible to design an alternative classification system that would make differentiating between funds easier.**
- **Using a longer span of data to calculate the synthetic risk reward indicator significantly helps to increase stability because it captures a wider range of market conditions.**
- **Using 10 years (rather than 5 years) of data to calculate the risk reward indicator would have significantly improved the usefulness of the risk indicator during the current crisis. With the 10-year measure only 30% of asset classes changed their ranking between the end of 2006 and the end of 2009, compared to 70% using the 5-year measure. Individual fund data gave similar results.**
- **Importantly, the 10-year measure in 2006 was also a better indicator of the likely outturns for the 5-year measure in 2009 than the 5-year measure itself. The 5-year measure is more prone to being skewed downwards in abnormally benign market conditions, potentially providing consumers with misleading information on relative risks.**

Introduction

In December 2009, the Committee of European Securities Regulators (CESR) provided its technical advice to the European Commission on a recommended methodology for the calculation of a synthetic risk and reward indicator (SRRI), which will form part of the Key Information Document (KID) for UCITS.[1]

This research brief assesses two main aspects of CESR's recommendations, namely the recommended boundaries between risk categories and the time scale used to calculate the indicator. In each case it shows how CESR's proposals could be further strengthened to provide a better tool for consumers.

ABI research shows that introducing a good pictorial design to explain investment risk to consumers can increase the number of people picking the most appropriate investment fund by over 20%, see Driver et al (2010). However, it is not only the pictorial presentation of risk that is important. For any SRRI to be a helpful decision-making tool for consumers, it needs to have an effective calculation methodology to underpin allocating funds to different risk categories.

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[1]   Committee of European Securities Regulators (2009)

This paper aims to contribute to this debate, by analysing the proposals on risk categories contained in CESR's consultation (CESR, 2009). It complements the joint ABI and IMA research by Clare (2010) that assesses a wider set of methodological issues underpinning CESR's proposals. In order to assess CESR's proposals, this paper uses two sets of data over the period January 1987 to December 2009:

- The monthly returns on the 23 "asset classes" used in Clare (2010). These comprise financial market indices and combinations of those indices, and were chosen to represent the range of funds available to UK investors, ranging from money market funds to emerging market equity funds; and
- Data across the universe of authorised funds, using a monthly returns series. There were 435 funds in total that had full performance histories over this period.

What makes a good risk reward indicator?

In order to assess CESR's proposals it is first important to decide what criteria should be used to judge their relative performance. CESR (2009) suggest two criteria to judge the methodology, namely that it should ensure that:

- The rankings avoid excessive bunching, where most funds are allocated to one or two categories, so undermining consumers' ability to differentiate between funds; and
- The rankings of individual funds are relatively stable over time, so that consumers have a reliable basis to make decisions from.

This paper uses both these criteria as the basis for differentiating between options.

Do the proposed category boundaries avoid bunching?

To assess the effectiveness of the risk category boundaries recommended by CESR, this paper starts by examining the extent to which CESR's (2009) proposals lead to bunching. If the majority of asset classes or funds are concentrated in a small number of risk categories, this will undermine consumers' ability to choose between funds. This assessment is done using a 5-year standard deviation, on a rolling basis from January 1997 to December 2009.[2]
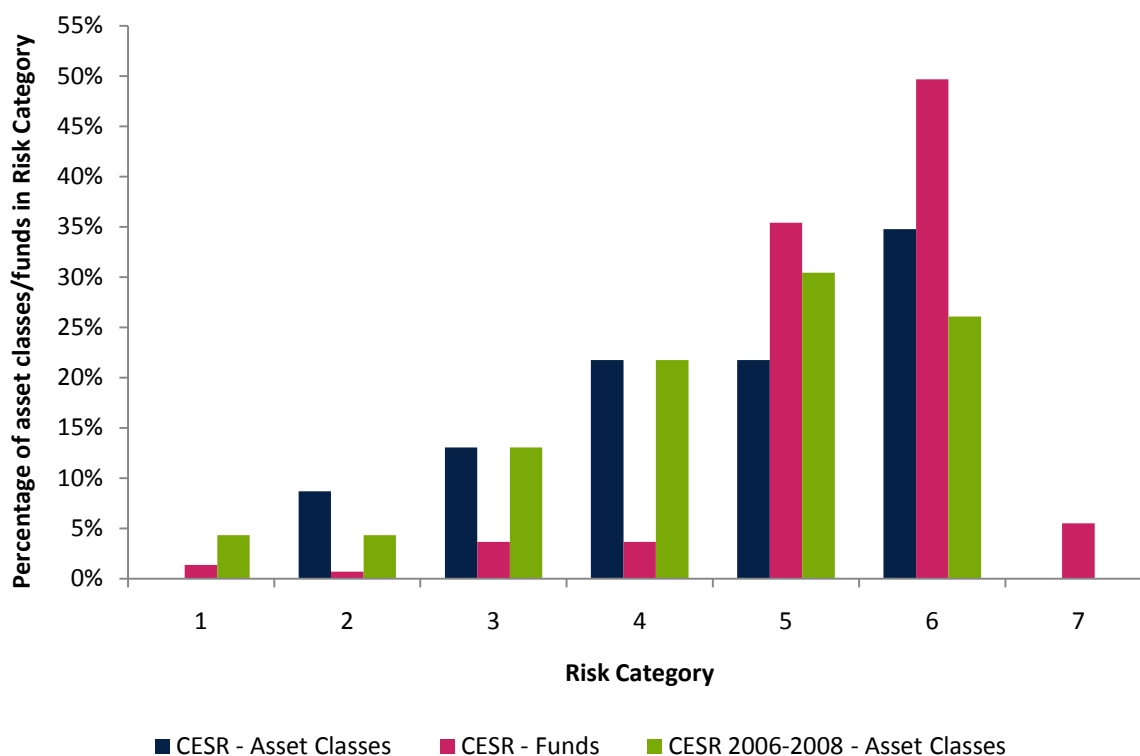
Figure 1 shows how the modal ranks for the 23 asset classes and 435 funds are distributed across risk categories using the risk category boundaries contained in the most recent CESR proposals (CESR, 2009). The asset class data is analysed across two different sample periods. For the full sample (1997-2009), under CESR's proposals none of the 23 asset classes would have either risk category 1 or risk category 7 as their modal category. Also, one-third of the asset classes would have a single risk category (category 6) as their modal category. Similarly, of the 435 funds, 85% would have risk category 5 or 6 as their modal category, with 50% of funds having 6 as their risk category alone. Based on the full sample, a small number of funds would have been allocated to risk categories 1 or 7, but the overall concentration of funds would still make it hard for consumers to understand the relative risks. These results suggest that using the CESR recommended boundaries to calculate the SRRI would result in excessive and avoidable bunching.

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[2] This calculation uses as its basis the formula proposed in CESR (2009), which also adjusts for the number of observations per year, in other words whether the data is monthly (as here) or weekly. It does not include CESR's proposed four-month migration rule (see page 6), which is simply designed to reduce unnecessary volatility and therefore would not materially affect the results.

One of the differences between this work and CESR's is that this uses a much longer time horizon (1997-2009) to assess the impact of the proposals. However, even using the shorter sample period (2006-2008) that CESR used, there is still no asset class that has category 7 as its modal category. In addition, it is well-known that risk was significantly distorted over the period 2006 to 2008, meaning that basing analysis of the best option solely on that period is likely to result in misleading signals in more normal periods.

Figure 1   Evidence of bunching using CESR's risk category boundaries

In order to try and find a set of risk categories that would result in a more even spread of both asset classes and funds across categories, two alternative sets of boundaries have been considered:

- Option 1 uses a completely linear scale, which divides the risk categories into six evenly-spaced segments (to create 7 categories). It calculates the boundaries by taking the minimum and maximum volatilities observed for the set of 23 asset classes in each period and uses these two series as a reference to define the range. To be as conservative as possible (so that funds will sit in the maximum risk category applicable) the range is calculated by taking the minimum of the minimum observations of volatility and minimum of the maximum observations. This range is then divided into 6 equally spaced reference points.
- Option 2 is based on similar principles, but the boundary between category 1 and category 2 is adjusted downwards, to ensure that UK direct property is in category 2, rather than category 1. The remaining part of the range is then evenly divided as before. Table 1 shows the different risk boundaries.

Table 1   Minimum boundary for different risk categories

	1	2	3	4	5	6	7
CESR	0.001%	0.5%	2.0%	5.0%	10.0%	15.0%	25.0%
Option 1	0.001%	3.5%	7.0%	10.5%	14.0%	17.5%	21.0%
Option 2	0.001%	1.0%	5.0%	9.0%	13.0%	17.0%	21.0%

Source   ABI and IMA Research

Figure 2 shows the impact of using these two alternative risk category boundaries for both the asset classes and funds. Both the alternative options produce a more even spread of asset classes and funds across the risk categories. However, Option 2 might be preferable because UK direct property (which has a low standard deviation, in part because of measurement difficulties), does not appear in category 1.[3]

Figure 2   Evidence of bunching using alternative risk category boundaries
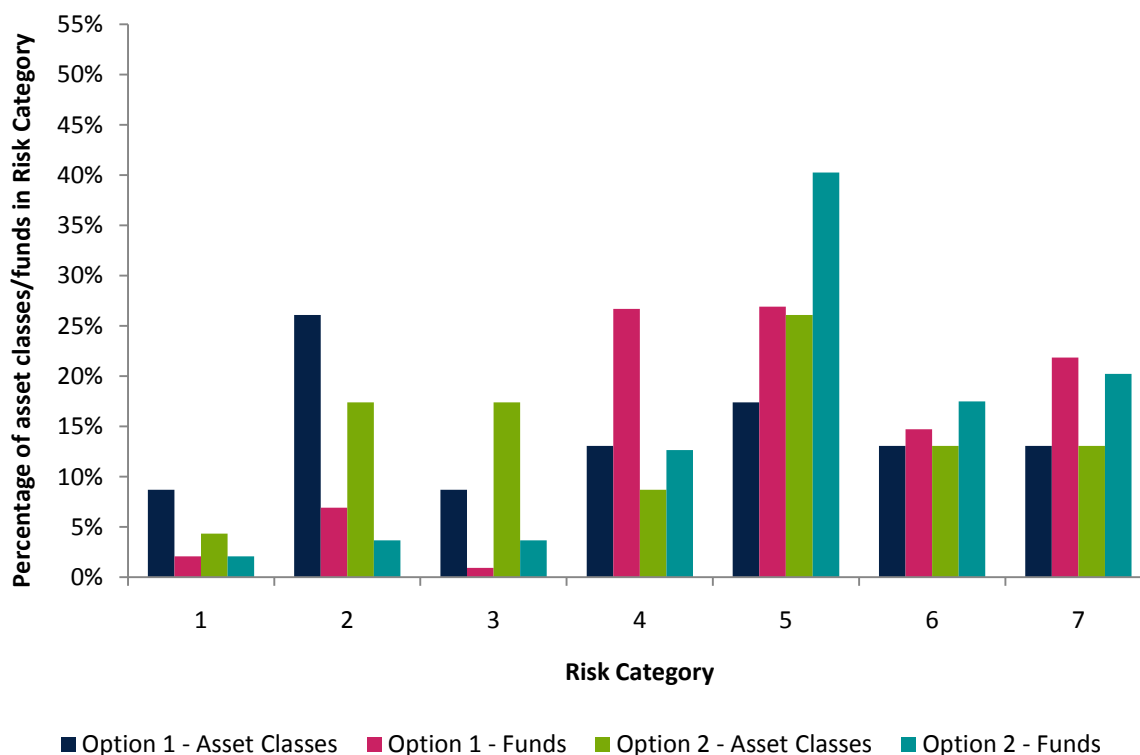
Source   ABI and IMA Research

Notes   Percentage of 23 asset classes with different risk categories as their modal risk category using CESR proposal, both for full sample and the sample used by CESR to calculate their proposals (2006-2008), together with percentage of funds with different risk categories using only the full sample. Results calculated using a rolling 5-year standard deviation over the period 1997-2009.

Table 2 shows which asset classes have the different risk categories as their modal category under the three boundary options. As can be seen, the results, particularly for Option 2, are intuitive; similar types of asset are grouped together in the same risk category. For example, money market funds would be in category 1 and funds based on Asia-Pacific (excluding Japan), emerging markets or commodities and energy based assets would generally be found in category 7.

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[3]   Although investment in property is not allowed under UCITS, it is possible under other investment vehicles. As the intention is eventually to use the UCITS framework to risk rate other types of investment (for example packaged retail investment products, or PRIPs), it is important to include this asset class in any assessment of where the boundaries should be.

Table 2   Allocation of asset classes to different risk categories under different boundary options

Risk category	CESR proposal	Option 1	Option 2
1	-	Money market UK direct property	Money market
2	Money market UK direct property	UK gilts Defensive Global high yield Sterling fixed interest Global fixed interest Cautious	UK direct property UK gilts Defensive Global high yield
3	UK gilts Defensive Global high yield	Balanced Sterling long bond	Cautious Balanced Sterling fixed interest Global fixed interest
4	Cautious Balanced Sterling fixed interest Sterling long bond Global fixed interest	Flexible UK all companies Private equity	Sterling long bond Flexible
5	Flexible UK all companies UK equity income Global equity Private equity	UK equity income Global equity North America Property securities	UK all companies UK equity income Global equity Private equity UK small companies North America
6	UK small companies Europe excluding UK North America Japan Property securities Asia-Pacific (excl Japan) Emerging market Commodities/Energy	UK small companies Europe excluding UK Japan	Europe excluding UK Japan Property securities
7	-	Asia-Pacific (excl Japan) Emerging market Commodities/Energy	Asia-Pacific (excl Japan) Emerging market Commodities/Energy

Source   ABI and IMA Research

Note   The asset classes comprise financial market indices and combinations of those indices, and were chosen to represent the range of funds available to UK investors

Does the proposed methodology produce reasonably stable results?

As well as the extent of any bunching within risk categories, the other key criterion for assessing the chosen methodology for the SRRI is the stability of the resulting risk assessments. Stability is important, because it gives consumers clear signals that they can use to make decisions. It also reduces the costs for the industry, and therefore for consumers, that would arise from the need to make frequent changes to fund literature and to distribute it to clients and advisers.

The work of Clare (2010) clearly shows that using a 10-year calculation, rather than a 5-year calculation, will increase the stability of the calculated synthetic risk reward indicator. This is mirrored in the analysis here. Using CESR's boundary definitions,

moving from a 5-year to a 10-year calculation method increases the average amount of time that each asset class spends in its modal category over the period 1997-2009 from 71% to 82%, and for funds it increases the average amount of time from 70% to 86%.

However, some have expressed concerns that moving to a longer time period would reduce the responsiveness of the SRRI to changes in market conditions, and that this lack of responsiveness would reduce its usefulness to consumers. Therefore CESR, in its recommendations, has concentrated on providing a smoothing mechanism (given by its four-month migration rule[4]) as a way of increasing the stability of its calculated measure, rather than on increasing the data period used to calculate the SRRI.

Unfortunately this misses the point. Both the 5-year and 10-year measures, by their nature, will be based on backward-looking data, but one of the benefits of the 10-year measure is that it will encompass a fuller mix of possible market events and, hence, will be more robust as an indicator.

In order to show this, we have undertaken a simple exercise to show how the SRRI would have fared over the recent financial crisis. It is well-known that risk had been mispriced, so that in 2006 the price of risk was too low.[5] What would have been useful for consumers buying UCITS in 2006 would have been an SRRI calculation that was relatively robust in the event of market turbulence (as happened in practice). The exercise therefore looks at how robust was the calculated SRRI for each of the asset classes and funds at the end of 2006, when compared to the calculated SRRI at the end of 2007, 2008 and 2009 based on CESR's boundary recommendations. Table 3 shows the results of this analysis for asset classes.

Table 3   Percentage of asset classes switching risk categories compared to end 2006 using different measures and boundary options

	CESR boundaries	Option 1	Option 2
Percentage risk category changes using a 5-year calculation			
End 2007	43%	52%	17%
End 2008	39%	57%	57%
End 2009	70%	70%	83%
Percentage risk category changes using a 10-year calculation			
End 2007	4%	9%	9%
End 2008	22%	39%	17%
End 2009	30%	52%	52%

Source   ABI and IMA Research

For the 5-year calculation, 43% of the asset classes had switched their risk category by the end of 2007, rising to 70% by the end of 2009. In contrast, only 4% of the asset classes had switched risk categories by the end of 2007 using a 10-year calculation method. This rises to 30% at the end of 2009, but this is still less than the amount of switching that had gone on at the end of the first year using the 5-year calculation method.

The individual fund data give a similar picture, see Table 4. The percentage values differ from the results for asset classes shown in Table 3 because funds are concentrated in a small number of asset classes.

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[4]   The SRRI is revised only if for each reference point over the preceding four months it falls outside the currently assigned risk category
[5]   See for example the Bank of England (2006) Financial Stability Report.

Table 4   Percentage of funds switching risk categories compared to end 2006 using different measures and boundary options

	CESR boundaries	Option 1	Option 2
Percentage risk category changes using a 5-year calculation			
End 2007	45%	70%	53%
End 2008	24%	40%	32%
End 2009	47%	72%	70%
Percentage risk category changes using a 10-year calculation			
End 2007	3%	11%	7%
End 2008	9%	15%	12%
End 2009	30%	37%	33%

Source   ABI and IMA Research

These results demonstrate that the length of the calculation horizon matters. Even more tellingly, the end-2006 10-year calculation of risk categories is a better indicator of the outturns for the 5-year calculation at the end of 2009 than is the end-2006 5-year calculation itself, regardless of whether you are looking at asset classes or investment funds (see Table 5).

Table 5   Percentage of asset classes and funds switching risk categories when comparing five-year rankings to a ten-year ranking at end 2006

	CESR boundaries	Option 1	Option 2
Percentage of asset classes switching risk category			
End 2007	57%	61%	61%
End 2008	35%	52%	39%
End 2009	48%	52%	57%
Percentage of funds switching risk category			
End 2007	67%	88%	85%
End 2008	41%	59%	61%
End 2009	35%	51%	49%

Source   ABI and IMA Research

For example, using CESR's boundaries and the 5-year calculation to allocate asset classes to risk categories, 52% of asset classes (ie 100% - 48%) would have been allocated to the same risk category at the end of 2009 that the 10-year calculation in 2006 indicated. In contrast only 30% (ie 100% - 70%, see Table 3) were in the same risk category that the 5-year calculation in 2006 would have indicated. The fund data give similar results. This shows the value of the additional information contained in the 10-year calculation.

Moreover, the results are essentially the same regardless of which risk boundary options are used, see Table 5. A 10-year calculation delivers greater stability and is better able to indicate outturns than the 5-year measure, even for the 5-year measure itself. In other words, a 10-year measure delivers greater stability and produces more reliable guidance than the 5-year measure would.

The bunching-switching trade-off

It can be seen from Tables 3 and 4 that the results for Option 1 and Option 2 are somewhat less stable than the results using the CESR boundaries. Does this mean that the CESR boundaries are preferable? In this case we would argue not, because the results simply reflect the fact that the CESR boundaries result in excessive bunching.

Effectively there is a trade-off between bunching and stability. In the extreme case, where the risk category boundaries were drawn so that all funds fell into a single category then the result would be a very stable measure, but one that was not particularly informative for consumers.

These findings illustrate why one of the recommendations in Clare (2010) is that there needs to be some form of governance structure, both for implementation of the SRRI and going forward, that sets and reviews the boundaries used for the risk categories over time.

Conclusion

The methodology proposed by CESR for calculating a synthetic risk reward indicator could be significantly improved in two ways. First the calculation horizon should be extended to 10 years and second the boundaries should be revised to avoid bunching.

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