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## Redefining and refining portfolio risk

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The aftermath of the 2008 financial crisis led to the realisation that inadequate regulatory oversight of the hedge fund industry presented a systemic risk and entailed insufficient protection for investors. On 1 April 2015, South African-domiciled hedge funds were declared as collective investment schemes (CIS) in accordance with the Collective Investment Schemes Control Act (CISCA) 45/2002 – in doing so, moving funds into a regulated environment with the objective to enhance investor protection, promote transparency, add to market integrity, and most importantly, reduce systemic risk.

Since the declaration of hedge funds as CIS in terms of Section 63 of CISCA (45/2002), two issues remain unresolved for the hedge fund industry. The first relates to the valuation and assessment of risk for hedge funds and the various underlying asset classes they deal in. The second issue relates to Information Circular No. 25, which states that hedge funds – despite being declared as a CIS – are not classified as a security. This has resulted in the inability of CIS funds to invest in CIS hedge funds. In other words, Information Circular No. 25 has prevented investment professionals from using their expertise and judgement to tap into opportunities provided by other CIS's.

These issues will be addressed in two articles. This article will highlight the issues concerning risk measurement and assessment in a hedge fund, focusing on the fixed income asset class. A follow-up article will dissect Information Circular No. 25, particularly addressing misconceptions regarding hedge funds and highlighting the benefits of hedge funds as an investment opportunity.

CISCA Board Notice 52 (BN52) (45/2002) regulatory guidelines define two approaches to valuing market risk of a portfolio:

- **Commitment approach:** which restricts a fund's exposure to the market to not more than two times its net asset value (NAV).
- **Value-at-risk (VaR) approach:** a statistical measure that allows participants to express their risk in terms of probability. It is a simple way a fund manager can determine, with a certain level of confidence, the potential loss a portfolio can experience over a specified period. The regulation restricts a portfolio's VaR to no more than 20% of its NAV.

The decision regarding which definition to adopt lies with the hedge fund manager and their management companies. However, the pertinent question is centered around which definition is suitable for fixed income hedge funds.

### Commitment approach

Fixed income generally relates to instruments which have a capital portion and an interest portion accruing to the holder. Applying pure macro-economic thesis, if the market has confidence in its policymakers, the interest portion is affected by decisions around interest rates which are affected by the repo rate and subsequently JIBAR rates (the funding rate set by banks and for corporate floating-rate debt). This means that many fixed income instruments will be correlated, where the correlation coefficient lies between -1 (purely uncorrelated) and 1 (purely correlated). This is illustrated in Table 1 (correlation of a sample of fixed income instruments based on weekly data spanning 10 years).

**Table 1: Correlation coefficients of sample of fixed income Instruments**

Security	SASW2	21X24	R186	SASW5	R2032	SASW10	R2044	SASW20
1) SASW2	1.000	0.946	-0.651	0.846	-0.474	0.669	-0.394	0.635
2) 21X24	0.946	1.000	-0.730	0.909	-0.590	0.775	-0.511	0.745
3) R186	-0.651	-0.730	1.000	-0.854	0.949	-0.898	0.890	-0.893
4) SASW5	0.846	0.909	-0.854	1.000	-0.775	0.941	-0.707	0.919
5) R2032	-0.474	-0.590	0.949	-0.775	1.000	-0.879	0.971	-0.880
6) SASW10	0.669	0.775	-0.898	0.941	-0.879	1.000	-0.828	0.989
7) R2044	-0.394	-0.511	0.890	-0.707	0.971	-0.828	1.000	-0.834
8) SASW20	0.635	0.745	-0.893	0.919	-0.880	0.989	-0.834	1.000

Source: Bloomberg

For fixed income hedge fund managers, the skill lies in evaluating these correlated instruments to identify opportunities. Should a mispricing be identified, in the application of the commitment approach, exposures should ideally be allowed to offset each other when determining the total fund exposure.

As an example, let us compare the R186, a nominal government bond (with a maturity of 21 December 2026) with a positive correlation of 0.89 to the R2044 (a fellow nominal government bond with a maturity of 31 January 2044). The top panel of Figure 1 below illustrates the asset swap spread between the R2044 note and its swap

counterpart, assuming the swap was priced at the inception of the R2044 bond and has the equivalent maturity date. The bottom panel depicts the difference in yields of the above-mentioned bonds, over a ten-year horizon.

Despite simplifying the nuances of the fixed income environment and its various instruments to two graphs, Figure 1 aims to illustrate the possible opportunities that lie between the various fixed income assets. Through understanding various market environments, investigation and analysis, a skilled manager can identify dislocations between various correlated instruments to identify opportunities. As a result, the volatility of relative value trades will be lower and thus provide the manager with an opportunity to potentially provide its clients with enhanced returns while being able to offset the risk. This will correctly reflect the lower risk of the portfolio.

**Figure 1: (Top) Spread between R2044 government bond and swap with the same economics. (Bottom) Spread between the R186 and R2044 government bonds**



Source: Bloomberg

BN52 (45/2002) does not provide prescriptive directives to calculate the risk of the portfolio. For guidance on best practice from international policy, we look at the Alternative Investment Fund Managers Directive (AIFMD) (Directive 2011/61/EU), in particular Article 8. AIFMD stipulates that managers are allowed to apply netting and hedging methodologies that are in accordance with its guidelines. In determining a fund's exposure, the guidelines provide clarification with regards to securities (including derivatives) exposed to the same underlying asset, irrespective of the maturity date. For the purpose of hedging, these instruments do not necessarily have to refer to the same underlying asset. However, the intention behind the implementation of investment strategy must be to offset the risk (Article 8(3)).

Despite being a bit more prescriptive than BN52, AIFMD allows the manager to use their skill and expertise by allowing correlated interest rate instruments within maturity buckets to be netted against each other (Article 8(9)). Thus, the result is that the risk of the relative trades within the portfolio will be lower than for directional trades given the ability to offset exposures.

## VaR approach

VaR is a statistical measure used to calculate the risk of the portfolio by looking at the portfolio value over a certain number of days and ranking the outcomes to determine, with a certain level of confidence, the potential loss. It is a popular and simple way a fund manager can determine the potential loss a portfolio can experience over a specified period. One of the criticisms of the VaR approach is that if one were to look at the previous (here we arbitrarily choose) 500 days, the possibility of an event on a moot day in July 2021 would have the same weighting as that of the market's reaction to the declaration of the health crisis in March 2020. On the other end of the stick, the VaR of a fixed income portfolio would spike should a risk event occur after a lengthy non-volatile period. This was the case for various fixed income managers during March 2020. The various possible methodologies to determining VaR is beyond the scope of this article.

## Conclusion

It should be noted, South African fixed income hedge fund managers chose the VaR option in 2015. However, irrespective of which methodology managers chose to apply, regulators need to be less prescriptive and look to adopt international best practice as valuation of risk is subjective and uncertain. This makes it rather difficult to monitor. By adopting applicable practices from international policy, a manager can be rewarded for their skill and expertise should they identify opportunities, while better reflecting the risk of their fund.

BN52 (45/2002) has been a step forward for the hedge fund industry by ensuring that there is oversight and transparency. The next step requires the industry to recognise that despite taking a few steps forward, there is further progress needed. This requires the industry to openly engage each other to provide appropriate, relevant, and robust regulation. Furthermore, the industry needs to be proactive regarding education about hedge funds, emphasising the benefits thereof, addressing misconceptions surrounding hedge funds and marketing them appropriately. This will be covered in a follow-up article.

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