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Equity investments in funds under FRTB SA

Approaches, challenges and an alternative proposal

June 2024

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Equity investments in funds under FRTB SA a persistent challenge

While Canada and Japan are leading the way & gone live with FRTB with none of the participants applying for IMA. With the deadline to comply with FRTB is just around the corner in other major jurisdictions, we observe similar trends where banks typically prefer to adopt SA first, become compliant with the regulatory requirement and simultaneously explore IMA viability.

Though the SA infrastructure has been in place for quite some time, banks need to now optimise and build governance and controls around SA numbers as industry is moving from mere reporting to putting aside capital.

To be sure, FRTB SA implementation faces several challenges due to operational complexity and conservative capital requirements.

This paper focuses only on the challenge of treatment of equity investment in funds (EIIFs).

The use of funds either directly or via derivative contracts allows investors, asset managers and bank trading desks to obtain (or hedge) diverse exposures in ways that are operationally efficient and cost effective.

FRTB has proposed methodologies for handling EIIFs under SA as well as IMA. Under SA, four different methodologies can be used: the look-through approach (LTA), index-based approach, mandate-based approach and fallback approach. Each approach faces its own set of challenges such as data sourcing, operational and computational infrastructure, which will result in different capital requirements.

But under IMA, only LTA can be used.

Also, all methods, except the fallback approach, for EIIFs under SA are complex and require large amount of data frequently, based on the funds mandate and constituents with weightage. It also demands substantial improvement in infrastructure to consume and generate risk.

In contrast, the fallback method is punitive. The disproportionate capital requirements for funds under this method will force banks to trim down positions, sucking out liquidity from the market.

Let us look at the alternate viable options the banking industry is proposing to counter this.

Equity investment in funds: Approaches under SA

- **LTA:** Of the four methodologies offered, LTA is the least penalising but also most operationally challenging. Under LTA, banks should treat each underlying position within the fund as an individual risk factor. Once decomposed, each underlying is assigned to a bucket and its respective risk weights as prescribed by regulatory text for a standalone underlier. LTA offers dual benefits: 1) the netting benefit of decomposed component with the standalone positions and 2) risk weights are comparatively less for individual components compared with treating the whole index as one underlier
- **Index-based approach:** If the fund is tracked using an index benchmark, then each fund can be considered as an individual position and the sensitivity to the index shall be mapped to index buckets. However, this approach cannot be used for all equity funds as all funds are not passive and banks may need to adopt other approaches
- **Mandate-based approach:** This approach requires firms to construct a hypothetical portfolio based on the most conservative composition using the funds mandate. This approach can be used only if the funds disclose all the relevant information in their prospectus to construct the hypothetical portfolio
- **Fallback approach:** This approach can be used when neither the index-based nor mandate-based approach can be adopted. It is the most conservative and punitive method. For instance, a mutual fund investing in equity would be assigned to the 'other sector' bucket prescribed by the regulatory text, which has the same risk weights as of an individual small cap emerging market economy stocks

To reiterate, the fallback approach is the most punitive and conservative way of calculating capital requirements, followed by the mandate-based, index-based and LTA.

The proposed methods of calculating capital for funds under SA lead to a drastic increase in capital and in most cases are not correlated to the risk posed.

Here is a summary of the capital charge of a real-life portfolio under different methods[1].

	Basel 2.5	Revised framework - FRTB		
		SA-LT	SA-mandate	SA-fall back
RWA	100	234	2700	4100

Challenges

Though the best option is to go with LTA for both risk management practice and capital benefit, challenges do exist:

- **Data-related:** Banks require enormous amount of data, which necessitates infrastructural changes to collect and maintain a huge repository. The availability of information from fund houses will also be important as some funds could delay providing the information. Similarly, data provided from each fund house may not be in a structured and unified form, which could pose additional infrastructural challenges in pulling the required data. Further, banks need to regularly update the fund allocation and mapping process, which should be a part of their internal policies and procedures
- **Computational expense:** The development of algorithms to manage the increased computational requirements of the LTA will be expensive for banks to implement
- **Different approaches, different checks:** Some approaches cannot be widely used for all funds traded within the bank. For instance, the index-based benchmark approach can only be applied on exchange-traded funds (ETFs) and not on mutual funds as most of these would be passive funds. The mandate-based approach of constructing a hypothetical portfolio cannot replicate the same risk as of the funds and cannot take full diversification effect into account, resulting in higher capital requirements. The fallback approach is operationally the least burdensome but the most punitive in terms of capital requirement
- **Third party vendor solutions:** Banks would have to engage with third parties for solutions for massive data handing and data management, which could result in additional cost and operational risk for banks

The current state

Based on CRISIL's first-hand experience of executing projects at various banks, we observe there is a divide in the approaches taken by large banks vs mid-size/small banks.

Given the complexity and costs involved in implementing the LTA, mid-size/small banks prefer the fallback approach. On the other hand, large banks are exploring, making investments, and trying to go for LTA.

Still, the industry (especially large banks) has raised concerns that the approaches described in the regulatory text are either not implementable or extremely punitive, resulting in disproportionate capital for the inherent risk of fund positions.[2]

[1] From ISDA publication Capitalization-of-Equity-Investments-in-Funds-Under-the-FRTB.pdf (isda.org)
[2] SIFMA and ISDA Provide Additional Comments to the Federal Reserve System, FDIC, and the OCC on the Regulatory Capital Rule: Amendments Applicable to Large Banking Organizations and to Banking Organizations with Significant Trading Activity

Recommendations and the road ahead

To address these issues, industry bodies – the International Swaps and Derivatives Association (ISDA) and Securities Industry and Financial Markets Association (SIFMA)– have proposed to enhance the currently defined index buckets in the FRTB SA framework to include EIIFs as well for funds similar to Standard Initial Margin Model (SIMM) methodology, which already incorporates the use of index buckets for funds for IM calculations. This new methodology does not have the requirement to look through the funds, instead it proposes to put the fund into specific buckets based on the fund's main investment strategy and availability of information on the actual holding.

Proposed dimensions for new fund-specific buckets should be based on asset class, broad fund type and credit quality.

Asset class	Fund bucket	Duration			
		≤ 1 year	1 year to 5 years	5-10 years	> 10 years
Fixed income	IG sovereign funds	1%	4%	8%	16%
	Speculative & sub-speculative sovereign funds	3%	10%	20%	40%
	IG non-sovereign funds	2.50%	10%	20%	45%
	Speculative and sub-speculative non-sovereign funds	5%	20%	35%	70%
Equity	Large cap and liquid economy funds	15%			
	Other equity funds	25%			

For this proposal, calibration of risk weights for fixed-income funds is done with a one-time look-through performed on the four, representative fixed-income funds: non-sovereign and sovereign across speculative and sub-speculative and investment grade (IG) credit quality.

For the proposal, the selected representative fund tickers are LQD , HYG, SHY, EMB & MUB[3], which are highly liquid funds.

After performing LTA on the constituents, a total capital figure is calculated and used to derive the risk weights.

$$Risk\ weight = \frac{CSR\ NS\ Delta\ Capital + GIRR\ Delata\ Capital}{Eq\ Delta\ (Fund's\ Market\ Value)}$$

Where, CSR NS is credit spread non-securitisation for non-sovereigns

GIRR is general interest rate risk for sovereigns

For equity, LTA based on the S&P 500 yields similar results to the existing large capitalisation and developed market equity risk weights (a 15% risk weight). And, leveraging the existing small cap or emerging market risk weight of 25% is appropriate and conservative.

The associations proposed the below risk weights for equity.

Asset class	Fund type bucket	Risk weight
Equity	Large cap and liquid economy funds	15%
	Other equity funds	25%

[3] LQD is the iShares iBoxx $ IG Corporate Bond ETF, HYG is the iShares iBoxx $ High Yield Corporate Bond ETF, SHY is the iShares 1-3-year Bond ETF, EMB is the iShares J.P. Morgan USD Emerging Markets Bond ETF, MUB is the iShares National Muni Bond ETF

Under LTA, there would be no recognition of the diversification benefit and capital requirements for equity funds; these would be calculated separately.

A key element of this proposal is that there would be no requirement to decompose an investment fund. The fund allocation and mapping to the proposed fund buckets would be part of the bank’s internal policies and procedures and based on the fund’s mandate/prospectus or holdings. This mapping process would be performed periodically.

This will at least reduce the existing data challenges, operational burden and infrastructure changes for the banks to a certain extent as banks can leverage the existing index buckets used in the SIMM methodology.

Understanding the characteristics of a fund at the investment vehicle level and then at the deeper level of underlying holdings is not only intuitive but also sensible from a risk management perspective. Hence, from a longer-term perspective, banks should start building the necessary infrastructure and conduct discussions with fund houses to get a detailed report on a timely manner in order to adopt the LTA approach for the part of the portfolio wherever possible.

The proposal of incorporating index buckets, if adopted into regulatory text would certainly be beneficial for large banks given substantial funds portfolio and should only be used where LTA is not feasible.

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