Strategic Asset Allocation as a Compliance and Risk Management tool

Retirement funds exist to provide an income to sustain an individual during retirement or distribute benefits to dependents in the event of the death of a member. Employers set up retirement funds with the sole goal of providing their employees with an income during retirement. Ideally, the post retirement income should be a close as possible to the employee's salary at retirement. Whilst ideal, history has proven this not to be the case for most retirement funds.

The process of setting up a retirement fund includes profiling all employees that are part of the retirement fund. Following that, an actuary determines the profile of the retirement fund using investment, economic, and demographic assumptions to determine its profile. The key responsibility of an actuary is to independently assess the financial soundness of the Retirement Fund, particularly its funding level. Asset consultants are also key in the management of Retirement funds – they are primarily responsible for advising retirement funds on the most optimal investment strategy. The investment strategy informs retirement funds' target asset classes and the respective exposure levels. Furthermore, they advise retirement funds with the identification of and appointment of investment managers, whose core responsibility is to execute the investment strategy, in line with the stipulated investment parameters. The retirement fund, following the advice of asset consultants, agree on the investment objectives and parameters with the investment manager.

To reach long-term goals, investment managers are guided by Retirement funds' strategic asset allocation ("SAA") to help them determine how to split investments among different asset classes. Asset allocation, in simple terms, is a process that aims to balance risk and reward by apportioning an investment portfolio across different assets according to an client's goals, risk tolerance and investment horizon.. In a Strategic Asset Allocation, the target allocation depends on several factors: the investor's risk tolerance, time horizon, investment objectives, the required rate of return, acceptable risk levels, legal and liquidity requirements, taxes and unique investor circumstances.

Botswana Insurance Fund Management Limited ("Bifm"), as one of the investment managers managing retirement fund assets, plays a critical role in executing various Retirement funds' investment strategiesy through management of retirement fund assets. When appointed to manage retirement fund assets, an investment manager signs a Portfolio Management Agreement ("PMA") that contains investment parameters and long-term objectives of the retirement fund.

PMAs stipulate the SAA within limits of the investment restrictions. These mandate limits are determined by a combination of factors, including the risk appetite of the fund, target growth objectives and limits set out by legislation. Retirement fund assets are to be managed within limits set out in NBFIRA's Pension Fund Investment Rules – PFR2s. The PFR2s dictate:

i. The geographic allocations (local holdings vs offshore holdings)
ii. Asset class limits [such as minimum and maximum limits allowable for the funds to invest]
iii. Exposure limits for each asset class
iv. Exposure limits per issuer

It is not uncommon for PMAs to include tactical asset allocation (TAA) ranges, which are meant to provide leeway for investment managers to slightly deviate from the SAA in a risk-controlled manner.

Bifm's Risk and Compliance tracks compliance to limits set out in the PMAs, with corrective action taken in cases of deviation. The SAA works as a compliance tool as the target allocation is always based on complying with the agreed and signed off PMA and legislative requirements set out by the PFR2.

A strategic asset allocation is based on the modern portfolio theory pioneered by Harry Markowitz. The basis of the theory argues that in order to maximise overall returns of a portfolio, an investor must choose an optimal, diversified mix of investments based on their risk tolerance. Key components to the theory are diversification of investment holdings, as well as maximisation of return per level of risk. The theory provides statistical evidence that a single investment's performance is less important than how it impacts the entire portfolio[1]. Generally, investing in asset classes that perform similarly to market movements does not bode well for diversification. Consider the correlation matrix shown in Table 1 which forecasts how asset class returns correlate. For example, per the below forecast, UK Large Cap Equities and US Large Cap Equities exhibit a positive correlation 0.74. This implies that these equity markets are expected move in tandem with each other when markets either go down or up. A portfolio containing a mix of asset classes with little or negative correlation bodes well for diversification as market movement adversely affecting a specific asset class will be compensated by positive or opposite performance affecting another asset class. Based on the matrix, a higher degree of diversification in a long-term period would be, for example, achieved by holding a combination of US Large Cap Equities and Gold with a low and negative correlation of -0.16. Investing in a combination of asset classes that demonstrate little or no correlation to one another enhances diversification and reduces portfolio volatility. While diversification can neither ensure a return nor eliminate the risk of experiencing investment loss, the ideal scenario is to have a mixture of non-correlated asset classes in an attempt to reduce overall portfolio volatility and generate more consistent returns over the long-term. The diversification achieved by having a mix of asset classes with low correlations to each other manages investment risk in the long term.

Correlation Matrix	UK InvGrade Bonds	US High Yield Bonds	UK Large Cap Equities	US Large Cap Equities	Emerging Markets Equities	Private Equity	Global REITs	Commodities	Gold
UK InvGrade Bonds	1.00								
US High Yield Bonds	0.56	1.00							
UK Large Cap Equities	0.40	0.61	1.00						
US Large Cap Equities	0.43	0.55	0.74	1.00					
Emerging Markets Equities	0.41	0.64	0.73	0.65	1.00				
Private Equity	0.32	0.49	0.68	0.71	0.65	1.00			
Global REITs	0.55	0.61	0.72	0.80	0.68	0.53	1.00		
Commodities	-0.04	0.20	0.43	0.18	0.37	0.44	0.27	1.00	

[1] Harry Markowitz. "Portfolio Selection." The Journal of Finance, Volume 7, No. 1, 1952, Pages 77-91.

Gold	0.09	-0.10	-0.07	-0.16	0.08	-0.05	0.04	0.29	1.00

Table 1 Correlation Matrix of Asset Class Returns (2023 forecast). Source - J.P. Morgan Asset Management

A portfolio adopting a strategic asset allocation strategy is rebalanced when the original allocations deviate significantly from the target allocation. The deviation could be as a result of a number of reasons, typically market movements and/or portfolio flows. Consider a retirement fund that has a target allocation of 20% to Offshore equity, 20% to Local equity, 40% to Local fixed income and 20% to cash. If the fund holdings are P10 million, the target allocations would be P2 million offshore equity, P2 million local equity, P4 million local fixed income and P2 million cash. Suppose then that offshore equity has a return of 25% and cash of 2% in one year's time. Due to the return on investment of offshore equities and cash, the allocations of asset classes will be outside of the target allocations as shown Table 2 as at t_1. In order to rebalance the portfolio in line with the target SAA, P390,000 worth of holdings in Offshore equity would have to be sold and allocated to other asset classes. The portfolio rebalancing in line with SAA is done to bring the portfolio to comply with the PMA limits and legislative requirements.

Asset class	**Holdings (P'millions) (t_0)**	**Target SAA**	**Year 1 return**	**Holdings (P'millions) (t_1)**	**Allocation at t_1**	**Target (P'millions) Amount**	**Rebalance adjustment (P'millions)**
Offshore Equity	2.00	20%	25%	2.50	24%	2.11	(0.39)
Local Equity	2.00	20%		2.00	19%	2.11	0.11
Fixed Income	4.00	40%		4.00	38%	4.22	0.22
Cash	2.00	20%	2%	2.04	19%	2.11	0.07

Table 2 - Portfolio rebalancing example

At Bifm, a Strategic Asset Allocation strategy is effectively used to manage and implement compliance and risk management tools. Compliance management is done through managing client funds within investment limits as set out by both Portfolio Management Agreements and restrictions set out by legislation, including Pension Fund Rules (PFR-2). Investment risk is managed by diversifying asset class holdings considering correlation among asset classes and restrictions set out by both the fund and legislation. In conclusion, SAA are set within investment mandate limits, guided by compliance with legislation, considering fund investment objectives and risk appetite with a view of managing investment risk by diversifying across asset classes.

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