The

TAMRIS CONSULTANCY

Fundamentals

"In the problem lies the solution. But to see the obvious and to state the obvious is not enough. You need to prove it and gain its acceptance. "

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WHAT IS TAMRIS?

TAMRIS is dedicated to the development of "Total Asset, Life Cycle, Wealth Management systems, services and business processes.

Total Asset Life Cycle Wealth Management is the management of total financial needs and total financial assets over a client's lifetime.

Asset liability modelling assesses the ability of assets to meet needs over a client's lifetime and optimises the allocation to low risk assets to protect financial needs against significant stock market and economic risk and, equities to provide long term return.

Portfolios are constructed in accordance with the interaction of client liability and risk profiles and a firm's investment strategy and, exactly reflect client needs, preferences and expectations.

The amount allocated to low risk assets, to cash, to fixed interest and specific maturities, to equities, to each global market, to each specific market allocation (market cap, style, yield) is unique to each client.

Total risk assessment ensures that all factors affecting portfolio structure, performance and management are dealt with at outset.

This document details the rationale for the development of TAMRIS while the ten technical documents detail and support the systems and business process methodology; (1)TAMRIS; (2)Total Asset, Life Cycle Wealth Management; (3)Asset Liability Modelling & Management; (4)Investment Planning; (5)Risk Profiling; (6)Valuation Allocation & Management; (7)Investment Discipline and Allocation Vehicles; (8)Against Mean Variance Optimisation; (9)Personalised Model Portfolio; (10)Weaknesses of Retail Risk Assessment.

Total Asset Life Cycle Wealth Management cannot be provided by conventional asset management techniques, in particular mean variance optimisation. These derive allocation from a risk/return profile, whereas Total Asset Life Cycle Wealth Management depends on the derivation of allocation by liability profile first and risk/return second.

TAMRIS CORE BELIEFS

The TAMRIS consultancy holds the following core beliefs.

- That the management of an investor's financial security is a great responsibility.
- That the management of assets needs to be personalised to the individual liability profile and this requires the integration of asset management and financial planning into one business process.
- That the management of assets requires expertise in areas of valuation, allocation, security selection, portfolio construction, risk and return management and economic analysis. Asset management research is not a secondary function.
- That there should be a direct relationship and accountability between the asset management decisions, the systems that deliver them and the planning process in which they are implemented.
- That the provision of total asset, life cycle wealth management requires independent advice and freedom from the conflicts of interest that transaction based remuneration confers.
- That the provision of asset management requires an independent view and analysis of markets, economies and securities and that advice so given is independent of any direct or indirect conflict of interest.

TAMRIS believes in the creation of a new financial medium which will link the asset management expertise of the investment industry to the financial needs of the client. This medium will be independent of transaction returns and conflicts of interests with systems and business processes capable of delivering portfolio personalisation and superior management of risk and return.

This requires the integration of independent asset management and independent financial planning expertise creating direct and accountable relationships.

WHY TAMRIS?

The origin of TAMRIS's systems, services and business process originated in response to problems experienced during the period 1987 to 1990.

Bear markets and stock market crashes

The stock market crash of 1987 significantly affected many an investor's financial security, yet stock market crashes are a natural risk of investment.

How did you ensure that investors' income and capital security was not only protected against but was unaffected by such events?

The problem was a function of portfolio structure in the face of liabilities and the projections on which financial security were being made.

Portfolio yield requirement

When constructing personal portfolios to meet clients' financial needs, the issue of matching the interest and dividend yield to the actual income requirement was of concern.

For one, a high yield requirement meant high allocations to cash, fixed interest and high yielding shares. What was the long term impact on the ability of such a portfolio to meet future financial needs?

> Over time a high yield requirement would limit capital growth, expose the portfolio to inflation and real capital depletion and ultimately result in the portfolio producing a declining income stream and hence declining future financial security?

The conventional approach was to start off with a lower yield produced by the portfolio in the anticipation that dividend growth over time would raise the overall level of portfolio distributions.

> However, there does not seem to be much point in accumulating capital during your life only to be able to spend the interest in retirement. After all, the most established total return vehicle, the retirement annuity, disburses both income and capital over an investor's lifetime.

Once you started to consider the impact on the future portfolio and future needs you realised you needed to consider portfolio structure over time and not just the current year or couple of years.

The question was therefore, what was the most efficient short and long term portfolio structure? That is one which could balance income provision, financial security and long term capital growth.

Once you started to assess the ability of a portfolio to meet needs, you found that you needed to know not only client's long term financial plans and needs but also the disposition of all assets. Once you needed to know all assets, you effectively needed to manage all assets including cash.

Shocks to portfolio

When managing portfolios, unplanned or unanticipated capital demands were shocks to the portfolio structure. Portfolios should really be structured to deal with future income and capital liabilities, which means the maturity and disposition of assets needs to be personal to the client's liability profile. This required investment planning disciplines to relate liability management to the management of assets.

Asset allocation

Prior to the use of modern portfolio theory for portfolio construction, standard rules of thumb were used to determine portfolio structure. For example in the UK, 10% in cash, 20% in fixed interest and 70% in equities was a typical allocation. This allocation varied depending on the organisation or a country's investment culture.

With the application of modern portfolio theory to portfolio structure, a risk return rationale was added to portfolio structure. However the resulting static portfolio allocations to cash, fixed and equities was little different from that obtained under the old rules of thumb.

Both these structures have little or no relationship to the underlying rationale for allocation, an investor's long term income and capital needs. This means that the structure of their portfolios do not relate to the size and timing of an investors income and capital liabilities, crucial to risk management and investment planning.

TAMRIS believes that the pivotal determinant of portfolio structure should be a client's short and long term liability profile. It is this allocation

structure which is then be adjusted for client risk(s)[i] aversion and an organisation's valuation and allocation framework.

While modern portfolio theory correctly states that return should be relative to risk and that allocation can reduce risk by combining assets with different relative price characteristics, it has serious weaknesses as a manager of assets and liabilities.

These weaknesses are discussed in TAMRIS Valuation, Allocation & Management, TAMRIS Risk Profiling and TAMRIS Asset Liability Modelling & Management.

Once you have considered the interaction of the management of assets and liabilities over time you should not be able to construct portfolios in any other way.

Investment discipline, valuation, allocation and management

The financial press, mutual fund companies, financial advisors and the financial services industry in general have historically had a bias towards selling, recommending and purchasing those investments with the best recent track record and selling and castigating those with the worst.

This tendency to favour buying high and selling low has continued to the present day.

- A key reason has been that fund selection has been effected outside of a disciplined valuation and allocation framework and without the expertise needed to construct and manage one[ii] – See TAMRIS Valuation, Allocation & Management.

- A second reason has been the failure to understand the influence of human investment preferences on the movement and valuation of markets, leading to short term investment, performance chasing or "market timing"[iii] – see TAMRIS Investment Disciplines for further information.

- These weaknesses have been reinforced by the dominance of a sales driven financial services market place. Most institutions are there to sell, not to offer objective advice about valuation.

Without a Valuation, Allocation and Management framework the ability to manage the universe of liquidity requirements and risk/return objectives, let alone personalise the management of the asset liability relationships is impossible.

TAMRIS SOLUTIONS

The solution to the above problems created a rationale for the construction, planning and management of portfolios over time and a crucial lynchpin to the necessary automation of the process of personalising portfolios to client liability and risk profiles.

PORTFOLIO OPTIMISATION

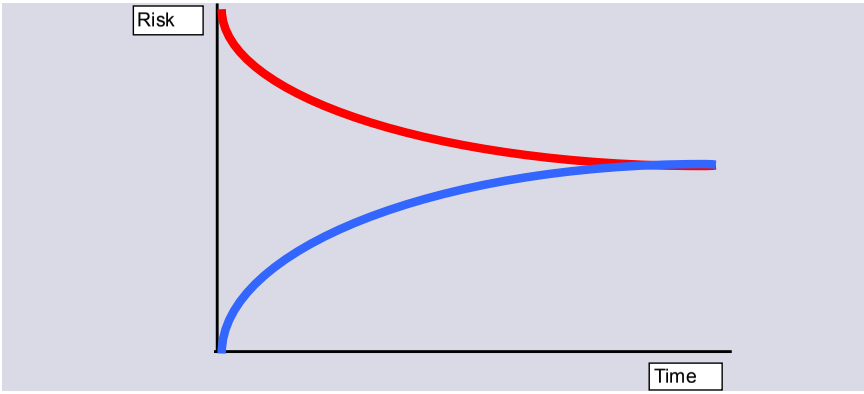
TAMRIS solves the portfolio optimization problem by structuring portfolios around short and long term income and capital liabilities and short and long term financial assets.

Equities as long term investments

Over the long term, the returns on cash and fixed interest investments are determined by the return on capital and are exposed to the same economic risks as the return on equities – see TAMRIS **Investment Discipline** for further information.

Long term holdings of low risk assets do not diversify the risks of capitalism. See the graph noted below which shows the risks to both equities (red) and low risk assets (blue) in the absence inflation.

Figure 1 Economic risk in the absence of inflation



Over the long run, equities, purchased at fair valuations, represent an effective method of generating long term returns needed to support future financial needs and, as indirect investments in real assets protect capital against the risks of inflation.

Equities as short term investments

Over the short term equities are volatile and exposed to stock market and economic risk. Otherwise, you would invest 100% in equities, irrespective of liabilities.

Rationale for low risk assets

Outside of risk aversion[iv], the reason for holding low risk investments as a constant is to provide security of income and capital to meet income and capital needs.

Structuring portfolios to meet income and capital needs from interest and yield alone will end up with excessive and, longer term allocations to low risk assets with limited ability to generate long term income and capital growth and as nominal assets exposed to inflation risk. This can impact on the ability of assets to meet future financial needs.

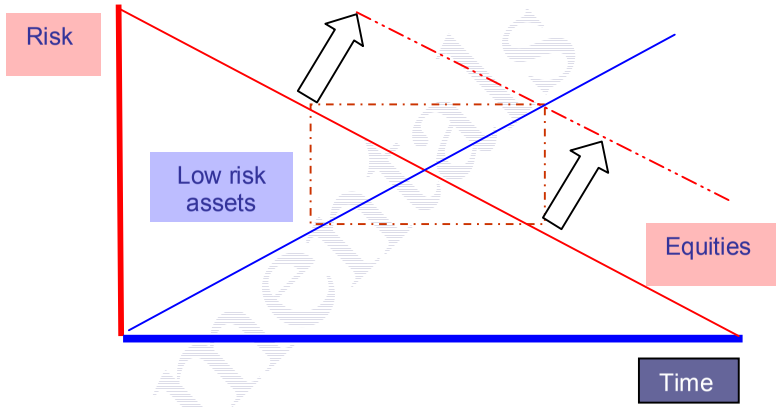
The alternatives are to either reduce income and capital needs now or to optimize asset allocation to obtain the maximum benefit from both asset classes.

Optimisation

If we are to optimise allocation, bearing in mind the short and long term risk and return profiles of both asset classes, we need to determine the time frame over which low risk assets become higher risk assets than equities.

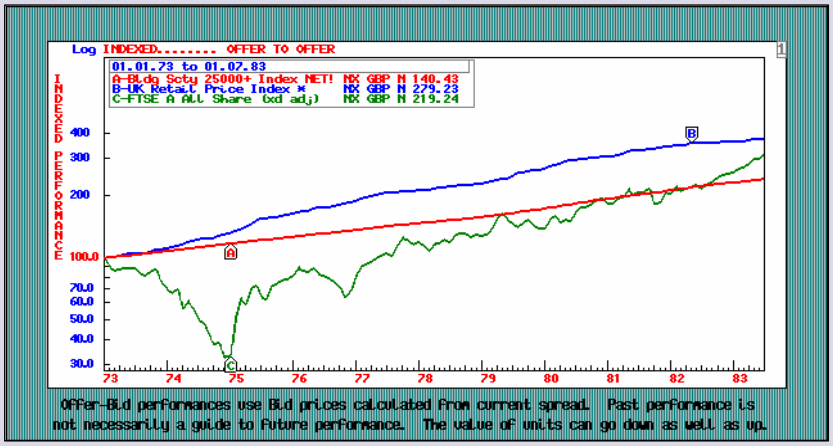
This means we need to assess both the long term inflationary risk of lower risk assets and the short term stock market and economic risk of equities.

If we use periods of significant stock market and economic risk as a benchmark for short term equity risk, and analyse the time in which it took for the total return on equities to match the return on lower risk investments, we can come to an approximation of the minimum time frame over which it is necessary to hold low risk assets to cover significant risk.



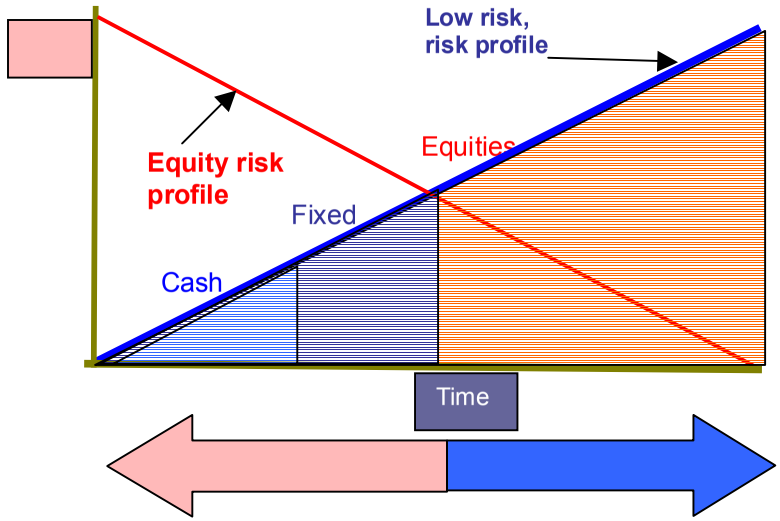
The red line (above graph) shows the risk on equities falling over time, the solid blue, cash and fixed interest, shows the effect of cumulative inflationary risk over time. The dashed red line shows the effects of excessive market valuation on short term investment risk and expanded time frames needed to cover this risk.

For example, following the stock market peak in 1973 in the UK market, it took some eight years for the return on equities to match the return on lower risk assets. Beyond this eight year time frame, lower risk assets became higher risk/lower return investments.



This analysis provides us with the basis for allocating to low risk assets to meet short term income and capital liabilities and equities to meet long

term assets. The graph noted below illustrates the optimal allocation structure for low risk assets and equities in the presence of inflation.



In the event of significant stock market and economic risk the lower risk portfolio is capable of supporting financial needs for a significant period of time without having to touch equities. At extreme valuations, cover will need to be higher.

This allocation structure is much more efficient at balancing short and long terms needs and in optimizing the allocation to short and long run assets within portfolios than meeting income needs from yield and interest alone. It is also a natural physical framework which can be automated, allowing for more effective portfolio personalisation.

The way in which this is managed within a dynamic environment is touched on in **TAMRIS Investment Planning**.

Total return

Individual portfolios are run as total return portfolios constrained by a finite set of assets, the management of which needs to be optimized.

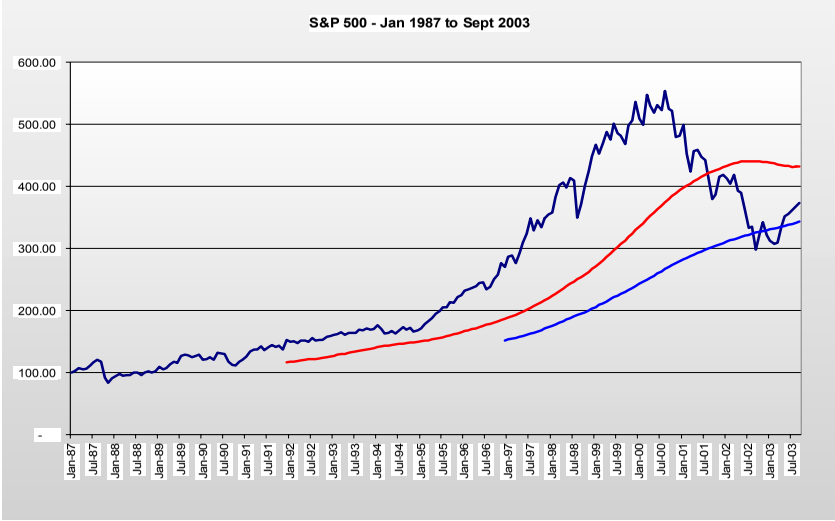
This approach essentially means that at fair market value, with no short term liabilities, investors with a realistic attitude to stock market risk should be invested 100% in stock market investments.

If your liabilities are some ten years away, the benefit of holding significant low risk assets as a constant is minimal, the only benefit being the reduction in the day to day volatility of equities.

2% annual inflation will lead to a loss of 22% of capital invested in low risk capital over the same ten years, the same as the one day fall in the US market in the crash of 1987. In fact, the longer the time frame for holding equities, the actual risk of significant price movements on the capital invested reduces.

This is a key weakness amongst modern portfolio theory portfolios. Risk is the normal monthly volatility. If we look at longer term risk/return profiles, which is the correct approach, modern portfolio theory actually ends up recommending inefficient portfolio constructs, valid only for short term risk/return horizons. If MVO constructs are incapable of managing short term liability imperatives and long term return relationships, what is their rationale?

Being able to take at least a five year view to equity investment reduces the effective risk from the often wild up and down movements to the smooth red line as the following chart shows. Taking a 10 year view reduces the risk to the blue line. Most investor capital is invested for considerably longer.



Therefore, at fair market values, where low risk allocation is recommended by an asset manager as a constant, in the absence of liabilities, it can only be held for one of the following reasonsv.

- The portfolio manager is risk averse.
- The portfolio manager wants to insure the portfolio against the effects of stock market risk on the ability of the investor to accept risk. That is, the investor's reaction to risk is uncertain and since the probability of risk is uncertain a low risk allocation hedges the risk.
- Equity strategy is insufficiently diversified (specific stock or economic risk) warranting fixed interest content as de facto "equity" diversification as opposed to risk (volatility) reduction.

In fact, TAMRIS research suggests that within a well diversified equity portfolio it is the client's liabilities (**first**), the client's risk aversion (**second**) and current valuations (**third**) that determine basic portfolio structure.

Without the management of total financial assets and total financial needs we cannot optimise the structure and management of assets or liabilities over time. Total Asset, Life Cycle Wealth Management is therefore a necessity.

SHORT TERM ASSET/LIABILITY MANAGEMENT

The optimisation of portfolio structure via short term asset liability modelling solves a key problem; how to personalise portfolio structure to liabilities?

> It also provides a framework to automate the personalisation of portfolio structure to liabilities as opposed to having to separately develop an investment strategy for each client?

TAMRIS's short term asset/liability modelling automates optimisation of portfolio allocation to low risk assets and equities and constructs the low risk portfolio by matching (iterating) the client's net real liability requirement against the organisation's central low risk investment strategy and security selection[vi]. The amount held in cash, the size and timing of the fixed interest allocation are all personal to the client.

It also provides a framework in which all assets and all financial needs cam be managed within one allocation and management framework.

> Without a framework which can incorporate all financial assets and all financial liabilities, the pursuit of total personalisation could never have been an objective.

Again conventional portfolio construction methodologies cannot incorporate the management of all financial assets and all financial needs through the lack of a specific liability determinant.

> Indeed, one of the reasons most for the provision of separate portfolios for school fees planning and retirement planning etc is the inability of portfolio construction to relate to actual liabilities. The only way to dedicate assets to an objective in this case is to have separate portfolios.

Modern portfolio theory constructs portfolios in accordance with long term return assumptions. They are incapable of dealing with the short term variance in income and capital needs that drives the short term structure of portfolios structured from a liability perspective. While MVO constructs are exposed to the variation in the short term liability profile, portfolios with short term liability management are not. In fact, the longer end of the portfolio is allowed to be managed under much more stable liability profiles.

Asset/liability modelling is not a new science. TAMRIS's application of asset/liability modelling is, however, unique in that it provides a natural framework for the optimisation, construction and management of portfolios personalised to income and capital needs.

TAMRIS Investment Planning describes in greater detail the importance of this framework for the construction, planning and management of portfolios[vii] and TAMRIS Asset Liability Modelling the short term liability management framework.

LONG TERM ASSET/LIABILITY MODELLING

The modelling of assets and liabilities over time is not a new science. Likewise, the determination of return assumptions is hardly new ground. TAMRIS's approach is nevertheless unique and detailed information can be found in TAMRIS Asset Liability Modelling & Management.

TAMRIS's approach to asset/liability modelling is not to project the likely return nor to determine the optimum allocation, but to assess ability of assets to meet needs in the face of significant natural financial and economic risk.

> Long term asset/liability modelling is often used to determine an optimum allocation and a required rate of return for assets to meet financial objectives. The selection of a recommended portfolio based on the required rate of return is contrary to TAMRIS's philosophy. For one, investors should not unwittingly be forced up the risk/return spectrum and secondly required rates of return are inefficient in structuring portfolios to meet liabilities. .

The portfolio allocation between low risk and equities within TAMRIS modelling is actually determined by the short term liability profile and, the equity portfolio by the client's net yield requirement.

Return assumptions within the TAMRIS system are derived from models assessing the long term economic and stock market risks to return and return profile based on current valuation and economic risks.

Historical returns are often unrelated to current valuations, market and economic cycles, while analysts' forecasts can be overly optimistic at critical points. Projecting at a given rate for a 25 year horizon may be fine for academic analysis, but most investors live in the short term and short term returns impact on the ability of assets to meet needs.

> Forecast returns are critical to investors who are relying on their assets to meet financial needs and should be determined independently by those with responsibility for those needs. Institutions that have no liability imperative should not be the source of these return assumptions.

PERSONALISATION

The solution to the optimisation of the management of short and long term assets and financial needs resulted in a natural framework for the provision of portfolio personalisation. This framework led to the development of TAMRIS's advanced investment planning techniques.

It also led to the development of a more objective risk assessment and education process. See TAMRIS Risk Profiling for further information.

VALUATION, ALLOCATION & MANAGEMENT

There are, no doubt, many problems in the financial services industry. A little publicised, but significant problem is the absence of a direct relationship between asset management expertise and the delivery of that expertise.

A whole industry has grown up providing the tools, systems and research to facilitate the distribution of financial service products to those without the expertise to effect these functions themselves. There are companies that provide sophisticated portfolio construction tools, there are companies that provide fund research and there are companies that provide packaged portfolio management solutions.

> Who in fact is responsible for the portfolio, the investment selection, the planning and the management of portfolios?

Critically, these systems and services separate accountability and responsibility from the construction and the management of portfolios.

> Recommended portfolios (although related to financial needs) are generally not structured for the management of liabilities, while many constructs have little relevance to current valuation relationships.

Additionally, because of the expertise needed to select and manage both securities and funds, simple arguments have been taken *out of context* and used to justify the simplification of the asset management process. For instance, arguments over "investment timing" and "asset allocation" ignore the most important decision of all, the risk of the initial investment decision.

The financial services industry has been allowed to develop within this simplified framework. One could say it is effectively running on "auto pilot", a reason why there is so much personal financial turmoil during stock market crashes.

Simple "allocation arguments" and MVO constructs, though not without considerable merit in the right context, have provided a "carte blanche" to the financial services industry and, a framework in which products and investments can continue to be sold "***in absentia***".

THE SERVICES DILEMMA

There are a number of reasons why asset and liability management has not been integrated into a single business process.

- A major reason is that without the necessary systems and disciplines to personalise portfolios, asset management expertise has been better employed managing institutional mandates, mutual funds and mega net worth investors. The introduction of a liability rationale for the determination of portfolio structure changes this.

- Without this integration, the focus had been on delivering asset management expertise via products, the distribution of which required incentives to sell. As the returns from product distribution and transactions became more important to the financial services industry, this focused software, service and product development on product distribution. In fact most institutions act as if their clients are units of production and control of their clients and their assets as key to product distribution and profitability.

- Mean variance optimisation, which afforded a rationale and simple structure for the distribution and management of investment products. Apparently, asset management could be divorced from the management of assets and liabilities and, portfolios could be managed efficiently without the need for investment expertise and the costs needed to fund such. Unfortunately, MVO constructs do not operate in liability space and valuation, allocation and the expertise needed to perform it are critical components of portfolio management.

- Asset management expertise requires a sizeable fixed cost, a cost which can be obviated by subscribing to lower cost service and software providers or by aligning oneself with institutions.

The new breed of asset manager will be charged with the responsibility to meet clients' financial needs and will be independent of the interests of the providers of financial services products.

THE TAMRIS SOLUTION

The TAMRIS Consultancy has been developing the theory, the process, the practise and the systems for the management of total assets and total financial needs within a framework that structures, plans and manages the interaction of assets and liabilities and integrates and delivers the asset management and investment planning expertise needed to manage portfolios over lifetime.

It is looking to develop the new independent financial medium for the management of private client financial security and wealth, and a new service, Total Asset, Life Cycle, Wealth Management.

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[i] See TAMRIS Risk Profiling.

[ii] The existence of mean variance optimisers has compounded this problem by providing a rationale for the provision of asset management without a valuation framework.

[iii] Itself compounded by the separation of valuation and allocation expertise from the allocation and management decision.

[iv] Long term allocation structures should not start from a position of risk aversion. Risk aversion should only be used to tilt the allocation to one in keeping with an organisation's or investor's risk preferences. As such long term investment, assuming investment at fair market values, should be 100% in equities, since there is no risk/return benefit for holding low risk assets as long term investments.

[v] North American portfolios tend to have lower global allocation and higher cash and fixed interest content. Indeed, this is effectively de facto diversification of the risk of single market investment, a different rationale than the reduction of risk per se.

[vi] See TAMRIS Asset Liability Modelling for further information..

[vii] There is as yet no specific investment planning discipline, exams or institute. Most asset management qualifications only touch on the investment planning functions.