thinktank

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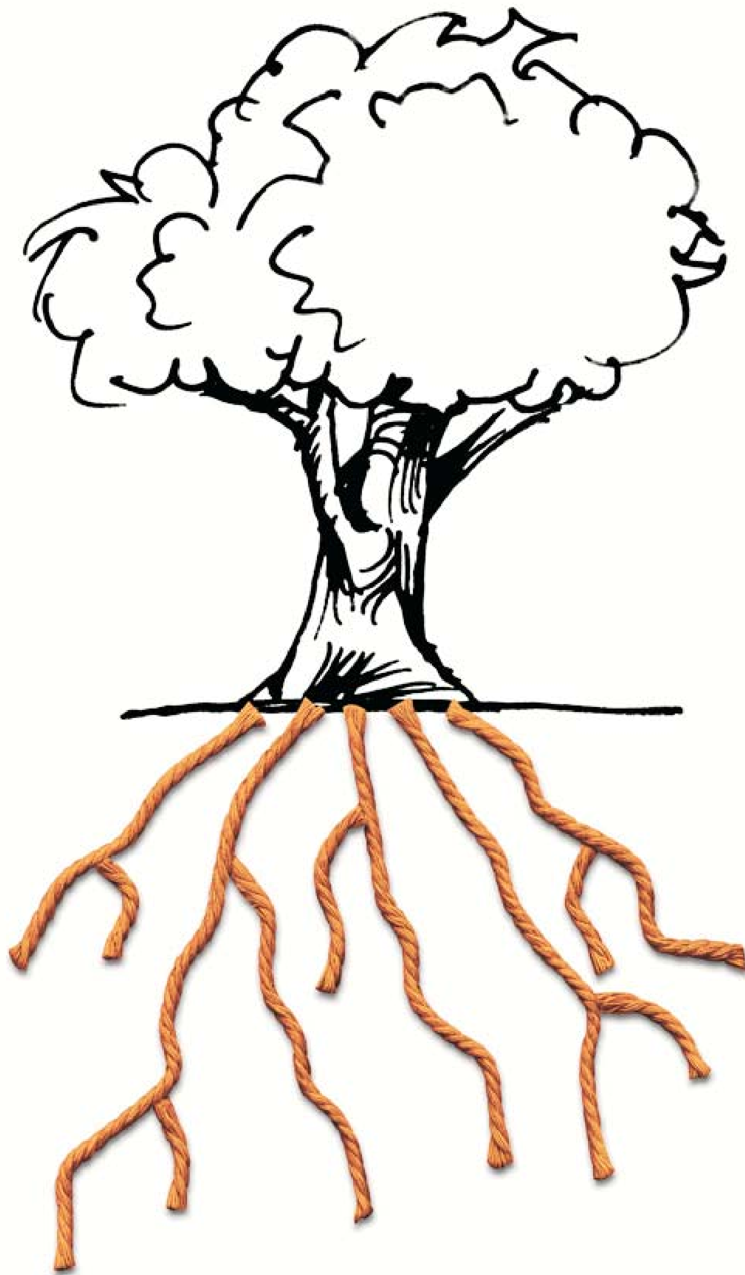

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The deeper you dig, the more you see.
We dig deep.

RisCura
risk and investment consulting

Andrew van Biljon and Petri Greeff, Research team

Replacement ratios: How useful are they?

RisCura's core business involves providing consulting services to retirement fund clients, but RisCura staff are also members of a retirement fund in their own personal capacity. Recently staff received their quarterly benefit statements, together with a personalised analysis of their projected retirement benefits based on their current fund credit and contribution rates. This was communicated through the use of a replacement ratio, which made us wonder - how useful are these ratios?

What is a replacement ratio?

Replacement ratios are closely linked to the question many people close to retirement ask themselves: Do I have enough money to retire? This is a difficult question to answer because the definition of "enough" will be different for each person. For some, "enough" means being able to maintain their same standard of living while for others it's about being able to travel around the world. To help people understand how much they will get relative to their current income when they retire, we make use of a replacement ratio, which is calculated using a person's gross income after retirement (your pension amount), divided by their gross income prior to retirement (your final salary). For example, take a person who earns R100,000 per year just prior to retirement. If they receive a pension of R75,000 per year once they retire, their replacement ratio would be 75% (R75,000 / R100,000).

Calculating your replacement ratio

If you want to calculate your replacement ratio today, you would need to know your projected final salary (based on your current salary plus expected inflation) as well as your projected pension amount on retirement. For members of defined benefit (DB) funds, your pension amount is mostly predetermined by the fund rules. Many DB funds determine members' annual pension amounts by taking 1/55th of their final projected salary times the number of years they were employed. If Mr X started working at Company A when he was 18 and retires at 65, his pension payment will be approximately 85% of his final salary - in other words his replacement ratio will be 85%. For defined contribution (DC) funds, your pension payment is a bit more difficult to determine, but assuming that the member buys an annuity on retirement, the annuity or pension amount at its most basic level would be based on the member's fund credit, retirement age and gender.

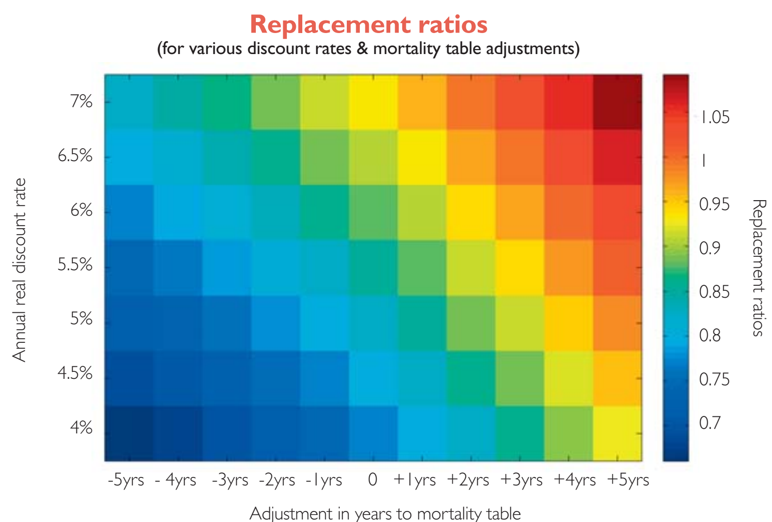
Variables used in the calculation

The calculation for DC funds is unfortunately more subjective than the pension payment calculation for defined benefit funds. Two important variables used for the annuity calculation are the mortality and discount rates. The mortality rates are contained in a "mortality table" of which numerous types and variations exist. If the fund supplies the pension, the choice of appropriate mortality table lies with the fund's actuary but if a pension annuity is purchased, the life company's actuary chooses the appropriate table. The choice of table is usually based on the historical mortality experiences of the fund or the life company.

The discount rate is also determined by the actuary and is loosely based on prevailing market rates at that time. However, this discount rate is usually only taken as a single, flat rate over the entire period and ignores the term structure that all yield curves and discount rates have.

The sensitivity of these ratios

To illustrate how sensitive the replacement ratio is to these two variables (mortality rates and discount rates) that members have no control over, look at the following example of a male aged 65 with a fund credit of R830,000 and a final annual salary of R100,000. Combining variations in real discount and mortality rates gives us the colour coded image shown below, representing variations in replacement ratios. While the midpoint of the image represents a replacement ratio of 85% based on an unadjusted mortality table and real discount rate of 5.5%, the spread of replacement ratios using a range of discount and mortality rates, vary from a minimum of 66% (blue cells) to a maximum of 109% (red cells). This shows just how varied replacement ratios can be, even though changes in the discount and mortality rates are small.



How useful are they?

The usefulness of a replacement ratio therefore depends on the type of fund you are a member of. As we saw in defined benefit plans, your pension amount is more or less prescribed in the fund rules and so your replacement ratio would be a good reflection of your likely financial position on retirement. On the other hand, calculating pension amounts in defined contribution plans is not simple and depends on subjective inputs that can significantly affect the pension amount and replacement ratio. This adds an element of fuzziness when it comes to using the replacement ratio as an indicator of your projected financial position at retirement. Also, as these ratios cannot predict, but merely project forward based on your current situation, they also exclude any promotions you might be awarded, salary increases in excess of what was assumed for the calculation, etc. For defined contribution members, this is an important point to keep in mind.

What should you aim for?

Now that you know how much value you should put on your replacement ratio, we return to the "what is enough?" question. As you saw in defined benefit plans, the replacement ratio in the absence of any bonus service years etc. rarely reaches 100%. In defined contribution plans, replacement ratios can exceed 100%, but as we pointed out, they vary significantly depending on what inputs you used to calculate them.

Lower income needs on retirement

The idea of retiring on 75% of your final salary might seem worryingly low for some people who would expect to have at least the same income level they had before retirement. However, we tend to forget that when we retire, our financial needs and requirements change. In general, a person needs less income after retirement due to a decrease in age and work-related expenses such as housing and transport costs. Most people have paid off housing loans by the time they retire and no longer need to commute to work. Income tax also goes down for people over the age of 65 due to extra deductions and a decrease in taxable income. Health costs on the other hand tend to increase, as you get older, although this increase tends to be lower than the total gain in disposable income received on retirement. Therefore, to maintain the same standard of living after retirement, it's not necessary to have the same income as you had before retirement.

How to boost your retirement income

What happens if your replacement ratio is dangerously low? The simple answer is to either postpone your retirement or contribute more. Unfortunately, most companies only allow you to postpone retirement by 5 years past the statutory age of 65, and this will also depend on your health. The latter option depends on your type of retirement plan: ad-hoc contributions or increases to your contribution rates are allowed in defined contribution funds but generally not in defined benefit type plans.

Another option is to use ad-hoc savings and investment plans. Saving more of your disposable income before retirement has two advantages. Firstly, it creates an extra funding source to supplement your pension and secondly, the reduction in disposable income due to your saving, means you become used to a certain standard of living, which is valuable when you retire.

When it comes to supplementing your retirement savings, there are several options available. You can invest in retirement annuities or endowment policies, which are offered by life companies and some asset managers, or you can invest directly in unit trusts or shares. It is advisable to consult a registered financial advisor before investing so that they can assess your needs and determine the most appropriate solution suited to your individual circumstances.

Jarred Glansbeek, CEO

A bubbling hedge fund industry

Everywhere you look, they are being talked, written and philosophised about. Newspapers are littered with articles entitled: "Hedge fund managers rake in the bucks", "Hedge funds double up in market boom", "How a trillion dollar industry was invented." There is no question that locally and internationally, hedge funds are the flavour of the time and are getting their 15 minutes in the sun in terms of media attention. How real is this growth given that there are so few accurate statistics out there, and what are the potential risks to this growth and the long-term sustainability of the hedge fund industry?

Asset growth in the industry

Over the last 2 years, the local hedge fund industry has been said to mushroom in terms of assets under management. The actual size of the local industry however is not clear and estimations vary from R15 billion to R20 billion, which compared to an estimated size of R6 billion 3 years ago, is significant growth. However, growth is coming off a very small base and relative to the rest of the savings industry, the percentage of overall assets invested in hedge funds is still small. According to the International Hedge Fund Association, the global hedge fund industry currently stands at $1.1 trillion (compared to $150 billion 10 years ago), with approximately 9000 active hedge funds. This is relative to a global unit trust industry of around $7.6 trillion. Locally, expectations are

that current assets under management will more than double in the next 3 years while the International Hedge Fund Association claims that growth in this industry internationally will be around 20% per annum.

Product and manager growth

In line with this growth, the number of talented managers moving from long-only asset management to this more sophisticated arena has led to a spike in the number of boutique managers now offering alternative investment services. Providing the actual number of managers currently operating in this arena is again problematic and estimates range from 50 to 80, with the number of funds ranging from 90 to 120. This is compared to an estimate of 50 managers and 60 funds, 3 years ago. A lot of mainstream managers are now offering hedge fund products, which has also fuelled growth. Despite this increase in suppliers and products, local industry participants believe that potential demand still way exceeds available capacity.

Drivers of growth

The growth in the industry has in part been spurred by the trend of pension funds to increase their allocation to hedge funds. For years, pension funds, both locally and internationally, have steered away from these investments, believing them too risky, or lacking in the transparency necessary for effective portfolio integration. This is changing, and market acceptance of the benefits of investing a component of a pension portfolio in hedge funds has increased. Hedge funds have also been encouraged to become more transparent in terms of their performance, assets under management and even strategies. South African institutions now have full transparency into the risk of hedge funds' underlying positions via risk management services provided to the industry.

In the US, pension funds are allowed to allocate around 7% of their assets to hedge funds while in Japan the allocation is 8% and in Europe, 4%, although the latter is growing rapidly. In South Africa, the legal structure of hedge funds places them in a category, which limits investment to 2.5% of the retirement fund's total assets (although innovative structures can increase this exposure to 20%). Market conditions are also likely to affect the growth in hedge funds. The South African market, after a number of years of lower volatility, now seems to have returned to its former high levels of volatility, motivating more investors to seek out the stable return/capital protection promise of hedge funds. This coupled with the rise in interest rates, which usually leads to a fall in asset values, makes hedge funds an attractive alternative despite their higher costs.

Lack of regulation is a risk

Given the industry growth, and the benefits that many hedge funds are offering investors such as improved portfolio diversification, capital protection and lower volatility of returns, this industry is here to stay. One of the risks to this sustainability however is the formalisation of regulations, which have been under discussion for a number of years. Although the current lack of regulation does not seem to be deterring investors, clear regulations are critical to the long-term protection of investors as well as the reputation of hedge funds. The Financial Services Board (FSB) has stipulated that the first step in the regulation process is to introduce a collective investment scheme product that can invest short and be leveraged, but will comply with all the other requirements of unit trusts and other collective investment schemes. The FSB have also said that they are not trying to regulate the whole industry and that an unregulated market would continue for managers who want to operate unregulated funds.

It is also becoming important to regulate the hedge fund managers themselves so as to prevent the entry of unqualified managers. An addition to the Financial Advisor and Intermediary Services Act (FAIS) laying out the "fit and proper requirements" for hedge fund managers has been drafted.

Will hedge funds live up to their performance promise?

Another key factor that will influence the growth and sustainability of the hedge fund industry is whether these funds live up to investor expectations and their performance promise, given their fairly high costs. The overall performance of the industry is very difficult to assess for a number of reasons. Firstly, the term "hedge fund" encompasses a wide range of investment vehicles with an equally wide range of risk profiles so a general performance evaluation can be misleading. Secondly, hedge fund indices both locally and internationally represent those funds that voluntarily choose to submit their data. It's likely that those funds performing well will be more willing to submit data than the poor performing funds, which may lead to overly positive performance statistics on hedge funds.

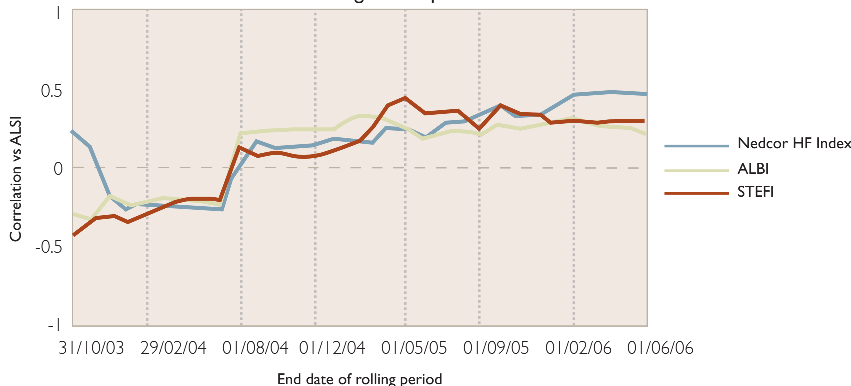
Given the above, at this point it's up to investors to assess the performance of their specific funds relative to their risk return promises. The overriding reason for most investors to invest in hedge funds is that they can deliver positive returns whether the market goes up and down, the volatility of their return series is lower and they represent a valuable tool for diversifying

assets. Assessing the correlation of the Nedgroup Hedge Fund Index (which again is subject to the same problems of indices as mentioned on page 3) relative to ALSI in the below graph seems to indicate that the hedge funds included in this Index do represent a valuable diversification tool for investors.

The graph below shows the Nedgroup SA HF Index displaying a 24-month rolling correlation of around 0.5 to the ALSI as at the end of June 2006. (Remember, 0 indicates no correlation at all and 1 means it is fully correlated. A negative correlation means that when the market goes up, the Index goes down [i.e. does the opposite], and a positive correlation means that when the market goes up, the index goes up [i.e follows the index]). In the past, the Index has shown a correlation of -0.4 to the ALSI, which indicates how important it is to look at correlation over time. Over time, hedge funds are not correlated to the ALSI or ALBI, but this correlation may change over shorter periods as hedge funds try to take advantage of market conditions.

some hedge funds are starting to "follow the herd", a long-standing criticism of long-only funds. This is a particular concern in South Africa where hedge fund strategies are limited by market characteristics. A recent article published by Business Report (27/6/06) suggests that the "fabulous wealth" of international hedge fund managers is starting to "crowd out common sense". The article says that international hedge funds have now started buying into sports teams, which it claims is a sure sign that "more money has poured into the industry than anyone knows how to spend", and that some international hedge funds "are now too rich to think straight". This indicates that international hedge funds are also struggling to find unique investment opportunities, and may start taking undue risks in an effort to chase down performance. This may have a big impact on these funds' ability to protect investor capital over time.

Despite enormous growth, the hedge fund industry still faces some big challenges if it is to



Given the lack of available industry performance data, investors need to fully understand the risk return profile of a hedge fund, and ensure it meets the above criteria. Managing investor expectations in terms of performance is key, as is ongoing investor education.

Another risk to the industry is that new and unique investment opportunities for hedge fund managers are becoming limited given the huge flow of money into this industry. As a result,

survive long term. Regulation, particularly in South Africa, needs to be formalised, ongoing investor education must take place to manage investor expectations in terms of performance, and hedge funds must ensure that they have clearly defined their risk return promise, and are able to deliver on this through all market conditions.

A HISTORY OF HEDGE FUNDS

1949 - Alfred Winslow Jones launches the first hedge fund.

1952 - Jones alters the structure of his funds from a general limited partnership and introduces performance fees.

1966 - Fortune magazine highlights his obscure new investment vehicle and the industry is born.

1968 - 140 hedge funds in operation.

1969-1970 - The hedge fund industry experiences its first heavy losses.

1973-1974 - A number of hedge funds disappear during the bear market and the industry again slips into obscurity.

1986 - An article in the Institutional Investor touting the double-digit performance of Julian Robertson's Tiger Fund reawakens the industry.

1990's - High profile money managers desert traditional long-only money management in droves, seeking fame and fortune as hedge fund managers.

1998-2000 - History repeats itself as a number of high profile hedge funds including Robertson's Tiger Fund and Long Term Capital Management fall in spectacular fashion.

2003 - Hedge fund assets reach a total of more than $600 billion worldwide compared to $311 billion in 1998.

2006 - 9000 hedge funds globally, $1.1 trillion assets under management and the industry moves towards increased regulation.

(table sourced from Business Times - 16 July 2006)

Quintin Jardim, Head of Unitisation Services

About RisCura's unitisation services

An increasing number of retirement funds are using unitisation to achieve a more accurate distribution of returns and to enhance the flexibility of their administration processes. Unitisation entails converting the value of an investment into a unit price. The value of a member's investment is calculated by multiplying the number of units a member owns by the unit price. A key driver of the unitisation trend is the retirement fund industry's move towards member investment choice. Under a unitised system, members' contributions are used to purchase units in their chosen investment option. The unit price, calculated daily, weekly or monthly, will vary depending on the returns of the investment option.

Some companies with a number of retirement funds have used unitisation to set up their own pooled fund and, as a result, have secured lower custodian fees, better diversification opportunities and more appropriate investments.

Advantages

- Provides a basis for transacting in portfolios and funds;
- Serves as an independent compliance/ audit check on the asset consultant's performance report;
- Facilitates easier switching between investment options;
- Allows regular updates of members' account balances;
- Provides up-to-date information;
- Enables speedy output of member statements.

Key considerations

- Cost-benefit trade-off;
- Frequency of calculating unit prices;
- Method of calculation, for example, whether there should be a buy/sell spread.

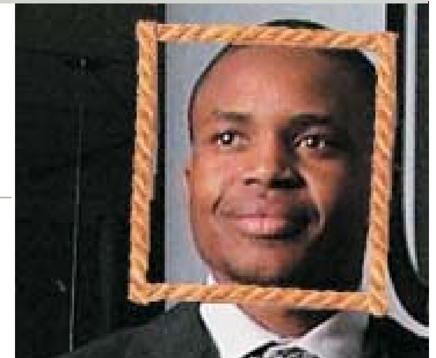
RisCura has run a unitisation service for retirement fund clients for over 4 years, resulting in a robust process and technology support system that have been thoroughly tested.

We offer the following advantages:

- Existing client base using a tried and tested process that has been run for over 3 years;
- Use leading edge proprietary technology - RisCUnit;
- Daily performance measurement at various levels of the fund/product structure;
- Detailed reporting - Retirement Fund Tax (RFT) report and Management Fee report;
- Customised service;
- Experienced team;
- Thorough processes with checks and balances.

Mehluli Ncube, Consultant

Profile



Qualifications and experience: I studied a BCom (Hons) in Finance and also qualified as a Licensed International Financial Analyst (LIFA). I have more than 5 years experience in financial markets and before joining RisCura in 2005, worked as an investment analyst/fund manager for Umbono Fund Managers.

Day to day my job involves: being flexible as no day is the same. I focus mostly on research - investment, asset manager and general pension fund issues. I am also involved in doing report backs to clients and meeting with asset managers.

Working at RisCura means I get to: engage with great minds. I see RisCura as a "meeting of minds" tank.

The person I most admire is: I cannot single out one but admire qualities in a range of people from the ordinary (my father) to contemporary icons like Mandela, Warren Buffet and George Soros. I also admire sports heroes like Jesse Owens and Tiger Woods as well as historical figures like Mziligazi and Shaka.

What I love about life is: the challenge to fulfil my destiny. I believe God has a purpose for everyone and I am excited about unlocking my purpose.

On weekends I love to: be myself, a lokishini (township) boy. I go to elokishini to braai meat and engage in the rich experiences of everyday township life.

My friends know me to be: an ambitious dreamer, a speculator and risk taker, an all rounder, and sometimes a mystery.

The happiest time of my life: I have had many happy times but think mine will probably be the day I get married.

When I get old I want to: be a real entrepreneur rather than a BEE deal broker. I see the older me becoming the black Bill Gates or George Soros of South Africa!

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