think tank

September 2008

Contents

RisCura

risk and investment consulting

Liability driven investing – the way forward.

By Prasheen Singh, Head of Consulting

RisCura has set itself up as an expert in identifying and protecting investment portfolios from risk, particularly in the pension fund industry. It goes beyond the traditional asset-based investment techniques because pension funds do not only have to optimise performance, they also have to meet liabilities as they fall due.

It's this focus that has allowed RisCura to win business away from its main competitors, Alexander Forbes and Fifth Quadrant.

Financial Mail, June 2004

LDI for retirement funds

Liability-driven investing recognises that the real purpose of a retirement fund is not to match or beat some peer or market related benchmark, but to meet the liabilities of the Fund over time. The most effective measure of success in retirement fund investing is a Fund's ability to meet its future cash payments over time.

RisCura adopted a liability-driven approach in 2000 and most of our clients' investment strategies have been structured in line with this approach, with considerable success.

What is a liability?

A liability is a debt or obligation that has arisen from past transactions or events. For example, in retirement fund investing, active fund members contribute money to a Fund now, so as to receive a pension benefit at a later stage.

From a trustee's point of view, liabilities are simply members' expectations of their Fund. Members have contributed to the Fund over a period of time, and they (or their dependants) expect to be paid some level of benefit on withdrawal/death, or in retirement.

Many institutional investors have liabilities they must pay in the future. Retirement funds, for example, pay out pension benefits and medical aids make health care payments. To meet these future obligations, the institution invests a pool of assets (which includes members' contributions) with the aim of matching its liabilities from the resultant growth in assets. If the assets are not sufficient to pay the liabilities, the institution may have to pay in the difference.

Liabilities can be in the form of well-defined commitments (Defined Benefit Funds, for example, have a set of rules that govern payments) or simply take the form of members' expectations.

Defined Contribution (DC) Fund members expect a certain pension benefit even though the Fund has no statutory liability beyond the members' credit. Despite the fact that DC Fund members only receive their accrued benefit, it's still the Fund's responsibility to, as far as possible, treat members' expectations of their final benefit as the Fund's effective liability.

All retirement members hope for some level of pension related to their final salary on retirement (for example, 80% of their final salary on retirement). Pensioners in retirement on the other hand, know what they are being paid in any year, and have expectations regarding the inflationary growth on those payments.

The goal of any institution with a portfolio of assets and a liability profile is to meet its cash flow requirements through time without having to pay additional contribu-

tions into the asset base. Risk in this context is defined as the "risk of not meeting the set liabilities".

"You need to link your retirement funding to your future income needs, which is about structuring it to accommodate adverse interest rate movements and inflation increases. This is a lot more effective than simply structuring a pot of money in line with which assets you think will do better or some vague risk profile label",

Jarred Glansbeek, press release, 2001

The role of interest rates

An important characteristic of liability profiles is that they are affected by changes in interest rates. Falling interest rates cause liabilities to increase, while rising interest rates cause liabilities to decline.

Valuing a stream of liabilities or even target expectations is similar to the way you value a bond or fixed interest investment. The price of a bond is inversely related to its yield (or interest rate). If interest rates go down, the price of the bond increases and visa versa. Interest rates also have an inverse relationship to liability streams. The lower the rate used, the higher the value of a retirement fund's liabilities or objectives.

What is interesting is that falling interest rates mostly result in increases to asset prices. Liability-driven investing is about making sure that a Fund's assets increase more than the increase in liabilities in times of interest rate declines.

Similar to a long-term bond, or even inflation-linked bond, liability profiles generally extend over a long period of time (although a Fund will also typically have short term cashflow requirements that must also be managed) and the longer the profile term, the more sensitive the value of the liabilities will be to changes in interest rates.

The role of inflation

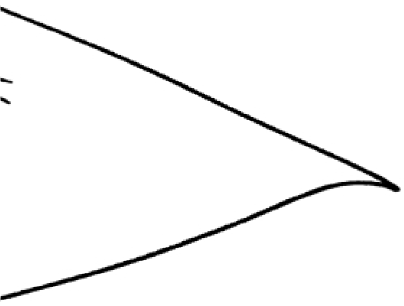
Although the value of a liability profile is affected by interest rates, inflation is also an important consideration when discussing a pension fund's liabilities. One of the most important objectives of any pension payout is that it results in an income stream for a member that grows in line with some pre-defined inflation rate. This will ensure that members retain some consistency in their standard of living through retirement. If the rate of inflation goes up without a similar increase in pension payments, then a Fund's pensioners will not be able to maintain their standard of living through retirement.

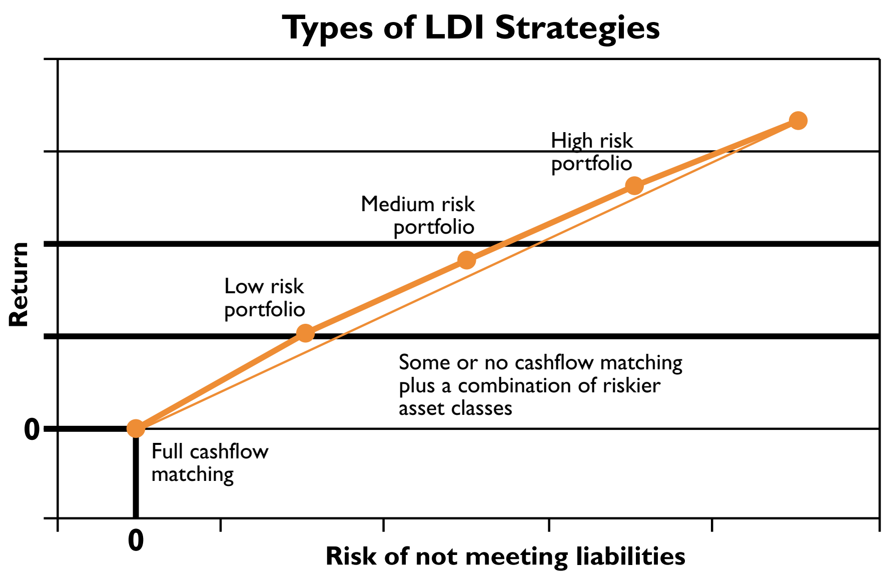
Liability-driven investment strategies involve designing a portfolio structure which produces sufficient funds to meet commitments and expectations whether or not interest and inflation rates change.

Why the move to LDI?

The traditional approach to a retirement fund or institution's investment strategy was to set a target return and then structure the asset class weightings in an effort to get there. In this approach, the importance of risk is played down, and the success of the investment strategy is measured according to whether the portfolio outperformed the target return, generally a market benchmark.

Between 2000 and 2002, global markets took a huge knock and combined with falling interest rates, this had a detrimental impact on the funding status of pension funds globally. Markets performed poorly, interest rates dropped and as a result, liability values rose substantially.





Unfortunately bonds were not widely held, especially in US and UK pension fund portfolios. Liabilities rose far more than the assets backing the schemes, resulting in widespread deficits. This was also the case in South Arica.

By the end of 2002, the average S&P 500 company's funding ratio had fallen to 80%. Market benchmarks became irrelevant as many pension funds faced a good chance that they would not be able to meet their future cash payments.

This pension collapse resulted in changes to international accounting standards for Fund sponsor companies, such as valuing pension funds on closer to a market related basis, and putting the funded status of the company's pension fund on balance sheet where previously it had been off balance sheet. It was also a key catalyst for the move towards liability-driven investing.

At a basic level, LDI moves the focus of a pension fund's investment strategy away from maximising asset returns towards maximising the Fund's surplus.

The LDI approach

No two Funds have the same liabilities, which means LDI strategies must be very flexible and highly customisable to a Fund's specific risk appetite. The first step in creating a liability-driven portfolio is to understand the characteristics of a Fund's liabilities. Once these have been modelled, and the Fund's risk appetite determined, the liability-driven investment portfolio can be constructed.

Portfolio options

The above diagram shows LDI strategies that might be adopted by a Fund depending on its risk tolerance and return requirements.

1. Full cash flow matching

A cashflow matching strategy greatly reduces the risk that a Fund will not be able to meet its cashflow requirements or liabilities over time.

A fully matched approach exactly matches a Fund's portfolio against its expected cash flows. To do this, a Fund would typically get a service provider such as a bank, insurer or specialist asset manager to structure a product that would pay their modelled cashflows as required. There would be no opportunity for alpha generation in this strategy.

Most Funds avoid full cashflow matching because it's expensive and exactly predicting a Fund's cash flows through time is impossible, given that this is based on variable assumptions such as mortality, inflation and interest rates. Even a matched strategy may have some risk, but will certainly minimise a sponsor company's exposure to the pension fund on the balance sheet.

An effectively structured matching strategy may also allow members to receive full CPI or inflationary increases, and possibly even bonuses.

2. Combining cashflow matching with a blend of other assets

A combination of (adjusted) cashflow matching and more traditional asset class management strategies can also be used.

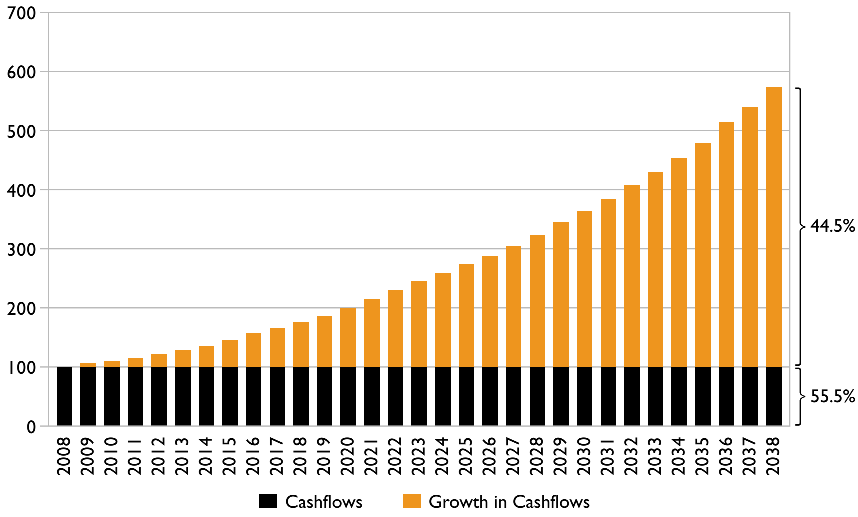
A Fund invests part of its assets in a matching strategy but then also introduces some risk by investing in a well structured combination of other asset classes. The decision as to how much of the portfolio will be allocated to which strategy is based on the Fund's matching target rate, as well as its risk return goals.

The RisCura approach

A stable investment is attractive if you have stable commitments but not if you are funding a pension fund. "If you don't quantify your goal, you can have all the capital protection in the world but you can still lose your pants", says Glansbeek.

Financial Mail June 2002

A Fund's estimated cashflows with growth



RisCura's LDI approach differs markedly from other market participants in that it's founded on the belief that in retirement fund investing, it's more important to protect an income stream than to protect capital. If we look at lower risk portfolio options offered by other asset and multi-managers, it is clear that increasing a Fund's cash exposure is a common approach to lowering risk. We believe however that cash is low risk when a Fund is looking for capital guarantees, but not when it has made long term regular income commitments to its members.

The primary objective of any retirement fund is to meet the expected income requirements of a member over time thereby allowing the member to match his/her current standards of living as closely as possible. Pension income is related to inflation because salaries grow at inflation, and retirement income (which should effectively "replace" a percentage of salary income) should therefore grow in line with inflation.

RisCura believes that pension income is therefore dependent on what happens to inflation as well as to interest rates. Inflation-linked bonds, which we believe is the lowest risk option for a Fund after cashflow matching, bring both inflation and interest rates into play while cash only focuses on interest rates.

LDI for Defined Contribution Funds

Most LDI focuses only on Defined Benefit (DB) Funds, as these Funds have an effective liability. However, we believe an LDI approach is as important for Defined Contribution Funds. Although with a Defined Contribution Fund, there is no statutory liability (the Fund only pays out the Fund credit), we regard the Fund's liability here as a member's expectation of his/her pension income.

Simply put, the Fund's investment strategy must ensure that the lump sum paid to members is enough to purchase an annuity that provides an income in line with their expectations when they retire.

The role of trustees in LDI

Liability-driven investment strategies are customised and unique to each Fund and no two strategies will be the same.

Compared to the traditional focus on active management and asset mixes, this approach can be more demanding on trustees. Trustees are now required to have a detailed understanding of the Fund's liabilities and how their values change in response to varying market conditions.

For some DB funds, Trustees may focus the Fund's investment strategy on higher risk solutions, given that the employer is backing the scheme. We depict a Fund scenario in the diagram above. For DB Funds, the employer ONLY guarantees the current pensions into the future (i.e. the orange lines).

In our example the value of the black lines accounts for 55% of the scheme's total value (calculated by discounting the cashflows back into today's value). The employer's interests are therefore only at stake if the value of the Fund's assets drop by 45%, a highly unlikely scenario.

This means employer protection should not be a significant comfort for DB pension schemes unless the employer aims for very low levels of pension growth. The orange lines will depend on the Fund's investment strategy, which is put in place by the Trustees. These allow for effective inflation increases and income protection for pensioners through time and should therefore be the focus of the Trustees.

In the case of a DC scheme, the individual member takes on ALL the risk of providing for their retirement (i.e. black and orange cashflows). It is therefore even more important that Trustees tailor a Fund's strategy in line with its liabilities as well as generate appropriate performance. LDI strategies are therefore also crucial for DC Funds.

Liability-driven investing helps DB and DC Funds make the right growth decisions, ultimately leading to better cashflow and inflationary growth for members and pensioners in retirement.

Trustees adopting a liability-driven investment strategy must ensure their Fund is being monitored according to the right objectives and benchmarks. Employing the services of an experienced investment consultant that follows a liability-driven investment approach will, however, go a long way to ensuring that the Fund has a better understanding of risk, more effective portfolio choices and higher risk-adjusted returns.

1 minute with Prasheen

Every day I: face with anticipation.
I love: rainy days when I can stay at home and watch movies under the duvet.
Tea or coffee: tea with biscuits.
Joburg is: my second home.
My weakness is: childlike pursuits.

Food and fuel – understanding rising prices

By Fezekile Jebese, Head of Reporting

South Africans are having a tough time. Political uncertainty, an increase in violent crime, Zimbabwe's election issues, volatile stock markets, rising food and fuel prices as well as high interest rates have severely tested our mood and stress levels.

Huge increases in food and fuel prices have had a big impact on the majority of South Africans, particularly pensioners and low income earners. In mid July, 3000 workers in South Africa took to the streets protesting to Government against the high costs of electricity, food and fuel, and demanding that a basic income grant be put in place to help people living on the bread line cope with rising prices.

Below we outline some of the reasons why food and fuel specifically has become so expensive. Firstly, let's focus on food.

Why are food prices so high?

An interesting fact: *From 1974 to 2005 real food prices (adjusted for inflation) dropped by 75% (3/4 drop so 1/4th the price). With this history, recent rapid food price increases are extraordinary.*

A few main reasons:

Prices are driven by supply and demand. The theory of supply-and-demand suggests that markets/prices tend towards a natural balance. Basically if the price of a good falls below this balance, consumers demand more of the good than producers are prepared to supply.

This leads to a shortage of the good. A shortage leads to producers increasing the price of the good until balance is reached. If the price of a good is above balance, people stop buying it and a surplus is created. Producers are then motivated to eliminate the surplus by lowering the price of the good, until the balance is reached.

1. Higher demand for food from developing nations

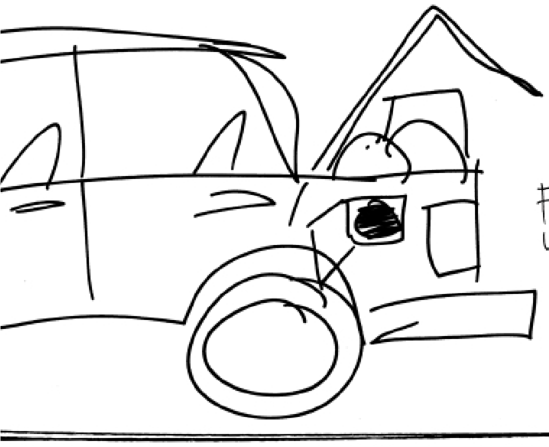
Demand for food has been very strong, driven by huge growth in demand from the East, mostly China. As nations develop and become wealthier, their protein consumption increases. So as the Chinese economy grows, its demand for meat (much of which is imported from other countries) increases.

Meat supply is very dependent on the price and availability of maize. It takes 2 kg of maize to make 1 kg chicken, 4kg maize to make 1kg pork, and 8kg maize to make 1 kg beef. So protein demand from China has put massive strain on maize demand.

2. Demand for maize from bio-fuels

Biofuels are gaining popularity as a petrol replacement mostly because they are regarded as more environmentally friendly than crude oil. Biofuels can broadly be defined as fuels derived from recently dead biological material, most commonly plants (such as sugar and maize). Fossil fuel is derived from long dead biological material.

The effect of diverting farmland or crops for biofuel production has affected food supply on a global scale. According to an April 2008 World Bank report, biofuels have caused world food prices to increase by 75%.



Food and fuel – understanding rising prices

1 minute with Fez

Winter in Cape Town makes me miss my dusty home town.
If I won R5 million I would release a single, invest some and travel!
South Africa is made interesting by the different cultures.
Whisky or wine: Got to be whisky
The highlight of my day is a kiss from my daughter with whom I share a birthday.

3. Supply has been erratic

Weather conditions globally have also contributed to a lower supply of maize. Recently, floods in USA have impacted maize crops, and Australian crops have also been very poor due to prolonged drought. In the mid July newspapers, it was reported that effects of global warming could cut South Africa's maize crop by 20% within 15-20 years.

4. High oil prices

High petrol prices also have a big impact on food inflation. Transporting food from farmers to retailers has become more expensive, as has importing of food from overseas markets (In 2007, 20% of all chicken consumed in SA was imported - about 80% of that came from Brazil!).

Higher electricity costs also contribute to price increases across the board (food is more expensive to refrigerate, cook and package etc).

Why are oil prices so high?

Those of you who drive cars have noticed that it's costing almost 50% more to fill your petrol tank this year compared to the same time last year, and those who don't, have seen big increases in bus and taxi fares.

Throughout the first half of 2008, oil regularly reached record high prices. Again this is a supply demand issue.

1. Limited supply

Crude oil has very limited new supply, while demand for oil has been very high given that the world economy has been strong in the past 3 years, again led by China.

Some commentators believe that lower oil supply is the long-term fundamental cause of rising prices. This is because there is a limited amount of fossil fuel, and the remaining supply is used more rapidly each year. Increasingly, remaining oil reserves become more technically difficult to extract and therefore more expensive.

Oil reserves are only feasible to extract if the company extracting the oil can make money from this process. Therefore the more it costs to extract the oil, the higher the price to the consumer.

2. Turbulence in supply areas

Turbulence in the Middle East, the world's largest oil-producing region, has led to decreased exports, especially civil unrest in Iraq after the 2003 U.S. invasion. Outside the Middle East, Venezuela has experienced strikes and political turbulence, and there is growing instability in West Africa.

3. Urbanisation in developing countries

As countries develop, rapid urbanisation and higher living standards drive up energy use, most often of oil. Thriving economies such as China and India are quickly becoming large oil consumers. China has seen oil consumption grow by 8% annually since 2002.

4. Growth in transportation

A sector that generally sees the highest annual growth in petrol demand is transportation. Cars and trucks will cause almost 75% of the increase in oil consumption by India and China between 2001 and 2025. As more countries develop, more people want their own cars, and the demand for oil increases further.

5. Growth in population

Another large factor on petroleum demand has been human population growth. The world's population in 2030 is expected to be double that of 1980, putting further stress on oil reserves.

So it looks like high food and fuel prices for now are here to stay, until alternative sources of energy and food production are discovered. A positive for Africa is that we have an estimated 137.3 hectares of potential arable land which could accommodate crop production for both fuel and food.

On the bright side – 2 things tend to happen when prices rise too fast – demand drops quickly (people spend less money on food and travel due to the high costs) and supply increases over time (alternative sources of supply become economically feasible) so that prices once again over time are bought into balance.

It's unlikely that the oil (or food) prices will continue to rise at rate that it has. For inflation to continue at its current level, oil would need to double in price to $300, which is improbable. The same can be said for food prices. So, inflation should over the next year taper off.

One thing is certain, things move in cycles, and this cycle of high prices, high interest rates and rocky stock markets should change over time. It is often said that the darkest time of night is just before dawn.

Sam Matthew

Client Manager

BCom (Hons)

As a new client manager: I am learning every day. Currently I make sure that our clients receive the correct reports on time.

My role involves: project managing client requests and helping maintain our high service levels.

My work means: being focused on putting the client first.

The people I admire most are: my parents. They have shown me that hard-work, integrity and being true to yourself is the key to a happy and fulfilling life.

I think I am really good: at making people feel comfortable and helping bring out the best in them.

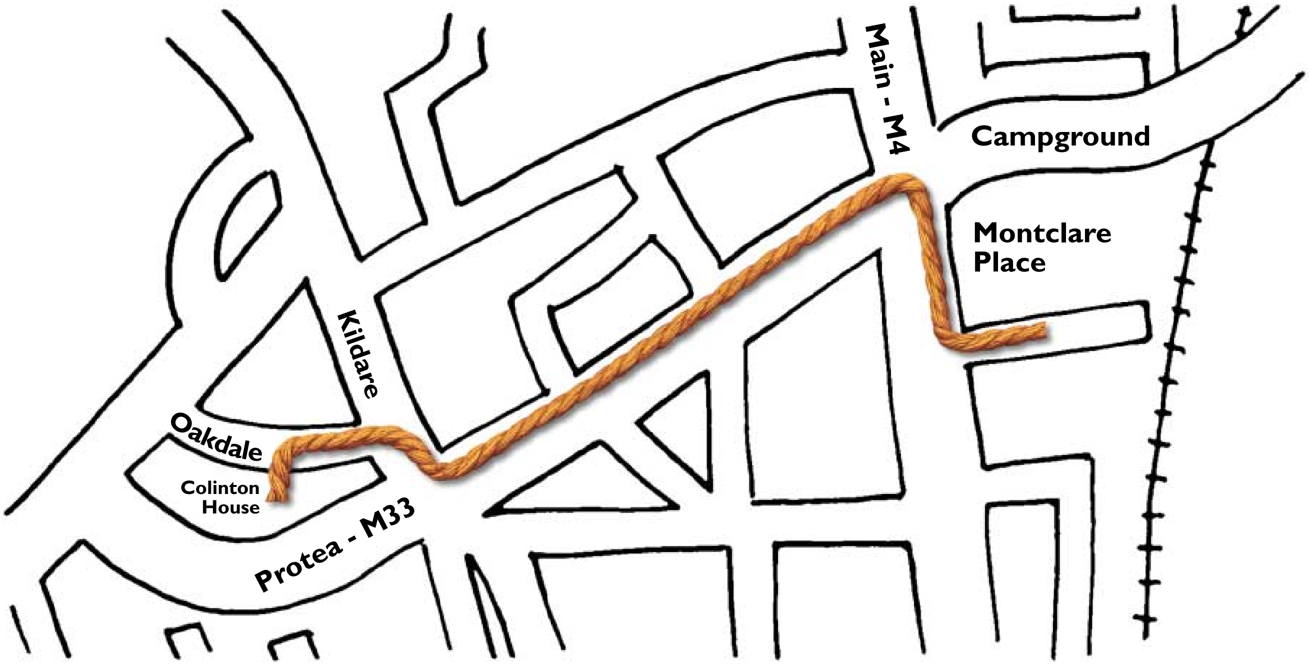
The culture at RisCura: is young, dynamic, hardworking and inspiring.

I spend my holidays: relaxing with family and friends.

I am passionate about: creative writing.

I am best when I am: with the people I love and trust.

RisCura Cape Town Office move



RisCura's Cape Town office is moving down the road!

From the end of September, we will be operating out of:

5th Floor, Montclare place, Corners of Campground and Main Road, Claremont.

We will advise you of our new phone and fax numbers shortly.

Everything else stays the same!

Access our website on www.riscura.com to download new directions to our office from Cape Town international airport.

RisCura

risk and investment
consulting

Current contact details

Cape Town Tel: +27 21 683 7111 Fax: +27 21 683 8277; Ground Floor, Colinton House, The Oval, 1 Oakdale Road, Newlands, 7700;
PO Box 23983, Claremont, 7735, Cape Town
Johannesburg Tel: +27 11 214 9800 Fax: +27 11 214 9801; Ground Floor, 23 Melrose Boulevard, Melrose Arch, 2076;
Postnet Suite 116, Private Bag X1, Melrose Arch, 2076, Johannesburg

www.riscura.com