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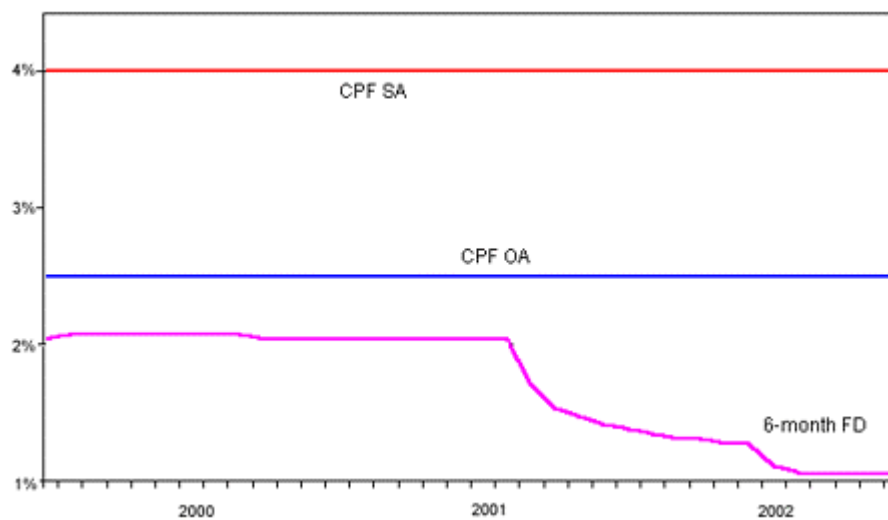
How (Not) to Invest Your CPF Savings

Investing your CPF savings is never a decision to be taken lightly. But now that bank deposit rates are so pitiful, something remarkable has made the decision-making even more complex. Or if you're a nervous investor, it's made life very simple – you won't invest at all.

What so unusual is that the gaps among cash and CPF savings rates have widened to the point where Singaporeans have three distinct tiers of risk-free alternatives. The table and chart below show this. A savvy investor will look at investments in three different ways – depending on which money they are using to invest.

In many ways CPF savings accounts are the investment bargains of the year. Where else can you get a riskless return of 2.5% and 4%, the current rates for CPF Ordinary Account (OA) and Special Account (SA), respectively. Although CPF interests are reviewed quarterly, the CPF Act guarantees members a minimum interest rate of 2.5% per annum, and savings in the SA earn interest at 1.5% higher than the OA rate.

Not surprisingly, since July 1999 these rates haven't moved, and with interest rates touching historic lows there's a good chance they won't move at all over the next few years either. So investors can use the CPF savings rates as proxies for risk-free rates (conceivably, CPF savings rates could become more flexible in future).



Interest rates (%) of bank deposits and CPF accounts

2000 to 2002 Source: mas.gov.sg, cpf.gov.sg

Why do investors need to look at their investments in three different ways? To explain this, let me introduce some basic investment theory. Most money managers consider an investment by looking at its expected *excess return*, that is, the return it can deliver above and beyond the risk-free rate. So if you can get 2.5% for sure, an investment that promises 3% is really only

delivering 0.5% of excess return. And of course, if you have to take a lot of risk just to get that extra 0.5% it's probably not worth it.

Ideally then, investors should be thinking about the trade-off between excess return and risk of a proposed investment. It turns out there's a convenient way to assess this trade-off, called the Sharpe ratio. This was developed by William F. Sharpe, Professor of Finance, Emeritus at Stanford University and one of the originators of the Capital Asset Pricing Model.

Generally, the higher the Sharpe ratio, the better an investment's historical risk-adjusted performance. Over the last decade, this measure has emerged as a widely accepted and useful statistic in investment analysis. Firms like Chicago-based Morningstar calculate the Sharpe ratio for US mutual funds. Similar data is available from dollarDEX, for all Singapore registered funds. Like any historical measure it can't predict the future, but it does throw up some interesting insights.

Here's an example for an imaginary investor, Madam Tay, who having the benefit of foresight on Jan 1st 2002, looked at selection of bond funds. Madam Tay wanted the best fund, *based on excess returns for the risk she assumed*. She had cash, CPF OA and CPF SA ready to invest. The tables show how she would have made her decisions: to choose the fund with the highest Sharpe ratio (and remember, Madam Tay has the advantage of prescience).

<i>Fund name</i>	<i>Returns (%)</i>	<i>Monthly Volatility (%)</i>	<i>*Sharpe ratio</i>
<i>Citigroup AM Citibond Singapore A</i>	6.3	0.358	1.166
<i>UOBAM United International Bond</i>	8.4	0.511	1.137
<i>Deutsche Lion Bond</i>	5.0	0.287	1.102
<i>Commerzbank S\$ Bond</i>	7.2	0.479	1.025
<i>INVESCO GT Bond</i>	10.8	1.267	0.606

Risk adjusted performance ranking for 2002, using cash.

Source: dollarDEX. *Risk free rate equal to bank deposit.

<i>Fund name</i>	<i>Returns (%)</i>	<i>Monthly Volatility (%)</i>	<i>*Sharpe ratio</i>
<i>UOBAM United International Bond</i>	8.4	0.511	0.913
<i>Citigroup AM Citibond Singapore A</i>	6.3	0.358	0.845
<i>Commerzbank S\$ Bond</i>	7.2	0.479	0.786
<i>Deutsche Lion Bond</i>	5.0	0.287	0.702
<i>INVESCO GT Bond</i>	10.8	1.267	0.516

Risk adjusted performance ranking for 2002, using CPFOA.

Source: dollarDEX. *Risk free rate equal to CPF OA interest rate.

<i>Fund name</i>	<i>Returns (%)</i>	<i>Monthly Volatility (%)</i>	<i>*Sharpe ratio</i>
<i>UOBAM United International Bond</i>	8.4	0.511	0.675
<i>Commerzbank S\$ Bond</i>	7.2	0.479	0.533
<i>Citigroup AM Citibond Singapore A</i>	6.3	0.358	0.506
<i>INVESCO GT Bond</i>	10.8	1.267	0.420
<i>Deutsche Lion Bond</i>	5.0	0.287	0.279

Risk adjusted performance ranking for 2002, using CPF SA.

Source: dollarDEX. *Risk free rate equal to CPF SA interest rate.

You'll notice that the rankings change completely, depending on the risk-free rate. With her cash, the best investment for Madam Tay would have been Citibond Singapore Fund. With her CPF savings, United International Bond, for both OA and SA. Unfortunately for her, the UOBAM fund is not under the CPF Investment Scheme, so she would have had to choose Commerzbank S\$ Bond for her Special Account, and stick to the Citigroup fund for her CPF OA.

Alternatively, if she had gone for the best performer in absolute returns she'd have simply picked INVESCO GT Bond, and for the most stable performance she'd have plumped for Deutsche Lion Bond. In all of her choices she would have handsomely beaten the riskless rate, and with little volatility to worry her.

Is this example a little far-fetched? Perhaps, but only because we assume that Madam Tay has perfect predictive powers. Her way of assessing the best investment for her three different types of monies is entirely valid. Of course, if she had picked another period the results could have looked quite different. For example, using the same methodology over a 2-year period gives quite different rankings, with INVESCO GT Bond taking the prize for risk-adjusted returns.

<i>Fund name</i>	<i>Returns (%)</i>	<i>Monthly volatility (%)</i>	<i>*Sharpe ratio</i>
<i>INVESCO GT Bond</i>	20.4	1.437	0.312
<i>UOBAM United International Bond</i>	10.5	0.478	0.185
<i>Deutsche Lion Bond</i>	9.0	0.445	0.076
<i>Citigroup AM Citibond Singapore A</i>	9.3	0.658	0.065

Risk adjusted performance ranking over 2 years, using CPF SA.

Source: dollarDEX, to 22 Jan 2003. *Risk free rate equal to CPF SA interest rate.

Another intriguing result is worth noting. Over the same 2-year period the best investments for CPF savings would have been high yield bonds, as represented by funds like UOBAM Optimix Asian Bond and Deutsche Premier Asian Bond. Alas for Madam Tay this class of unit trust is not currently available under the CPFIS, so she can only look wistfully at their returns.

<i>Fund name</i>	<i>Returns (%)</i>	<i>*Sharpe ratio (for CPF OA)</i>	<i>*Sharpe ratio (for CPF SA)</i>
<i>UOBAM Optimix Asian Bond</i>	30.0	0.539	0.466
<i>Deutsche Premier Asian Bond</i>	23.4	0.433	0.355
<i>INVESCO GT Bond</i>	20.4	0.397	0.312
<i>ABN AMRO Star Europe Bond</i>	26.3	0.287	0.242

Risk adjusted performance ranking over 2 years.

Source: dollarDEX, to 22 Jan 2003. *Risk free rate equal to CPF OA and CPF SA interest rates

What's the implication to the average Singaporean of these theoretical exercises? It's not that last year's investments will be the best ones this year, but rather it's prudent to think differently about investing CPF savings. Excess returns are so much more difficult to achieve in a low-interest rate environment. Second, investors should push for a wider choice of funds (such as high-yield bond funds) to be made available under CPFIS. Lastly, in these depressed times, Singaporeans should be thankful that the CPF Act was so generous. For risk-averse investors it means a smart move might be *not* to invest their CPF savings. For others it means a more careful look at the risks and rewards of investing their hard-earned CPF savings.