A framework for avoiding credit disasters

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Recent credit failures have at last created an environment where the need to manage credit risk has become more widely recognised in the financial planning community. This paper proposes a framework for managing credit risk. It is not a framework for eliminating credit risk – rather, it is an approach that assumes that there will be unforeseen credit failures and that the role of the financial adviser is therefore to ensure that the losses that result are kept to manageable levels.

This framework consists of four steps:

1. Perform a back-of-the-envelop credit rating.
2. Estimate the maximum likely credit loss from an investment.
3. Set a limit for the maximum portfolio impact of any one investment.
4. Determine the maximum exposure to a particular investment.

Step 1. Perform a back-of-the-envelope credit rating

Assessing risk at the security level

The aim of this process is to assess the risk of each security for risk management purposes. The desired outcome is to estimate how much you could lose if things go awry. It is not in any way intended to specify whether a security is worth buying but, rather, once you have decided to buy it, how much of it you should buy for any one portfolio. As such, this process will be conservative. When in doubt, assume the worst.

The first step assumes high yields are there for a reason. The yield on the security is compared to that of government bonds of similar duration. The difference between the two is the spread. That yield spread is matched to the spreads currently available on securities of different ratings, as shown in Table 1. This gives a back-of-the-envelop credit rating.

Table 1: Spreads (August 2007)

Rating	Spead versus Government bonds
AA	0.8%pa
A	1.0%pa
BBB	1.6%pa
BB	3.2%pa
B	3.9%pa

Source: Standard & Poor's, farrelly's

As an example, Great Southern Trees 3 Perpetual notes trade at a yield of 8.3%per annum versus 10-year Australian government bonds at 5.9%, a spread of 2.4%. Table 1 indicates they should carry a rating of somewhere between BBB and BB and, as explained above, this process will assign it a BB back-of-the envelope credit rating to be conservative.

Similarly, in New Zealand, GoldBand Finance's two-year term deposit offers a yield of 9.4% versus 7.4% for two-year New Zealand Government term deposits, or a spread of 2%. Again, this process would assign the GoldBank Finance offer a BB back-of-the-envelope credit rating. In the event that the security carries a formal rating, and that rating is different than the back-of-the-envelop rating, go with the lower of the two ratings, just to be conservative.

In fact, as will be shown shortly, it doesn't actually make a lot of difference whether the securities are described as BB or BBB. Nonetheless, the exercise is worthwhile, if only to focus on the risk inherent in any particular security.

Assessing fund credit risk

This exercise is a little more difficult but the same principles apply. For a credit-linked fund, ask the fund manager for the spread between the yield on the underlying securities held by the fund and government bonds of similar currency and duration. At this point, expect lots of wriggling! If you can't get a straight anwer, go direct to Step 4 and determine the maximum exposure to that fund - zero!

Also ask if there is anything about the structure of the fund that would result in understating that yield. Examples would be where the income includes imputation credits, or where the securities have an equity kicker so that the yield can be lower. Or, perhaps, where the securities are structured in such a way that the interest rate increases over time as is the case with CPI-indexed bonds. If any of these, or other structural factors, results in an artificially low yield, make an adjustment. Remember, the main aim is to work out how risky the fund might be and there are no penalties for being overly conservative, only penalties for being too optimistic.

Now simply match up that spread to a risk level in Table 1. For example, if a particular fund's underlying assets carry a running yield of 1.5% per annum, this corresponds to a BBB rating in Table 1.

Step 2. Estimate the maximum likely credit loss from an investment

Table 2 shows the average and worst case 10-year failure rates of different types of securities. It shows that of securities that were initially rated BBB, on average, 5.5% (or about 1 in 18) fail over a 10-year period. In the worst 10-year period since 1970, 8.4% or 1 in 12 BBB securities failed. So much for investment grade!

Table 2: 10-year failure rates (1970-2004)

Rating	Average 10-year default	Worst decade
AA	1.0%	2.4%
A	2.0%	2.9%
BBB	5.5%	8.4%
BB	17.8%	25.1%
B	29.2%	35.3%

Source: Standard & Poor's

In practical terms, what this means is that, for any single security rated BBB or lower, we should assume that the worst-case scenario is that it fails and there is no recovery – that is, a 100% loss. Securities that line up as A rated are a little more problematic. They occasionally fail, but much less often. Use your judgment, but an assumption

that an A rated security (as assessed by you) may fail, but that you would probably get half your money back, may well be appropriate.

Estimating losses at the fund level

Estimating the possible loss at a fund level is a little more complex, but by no means rocket science. (Or as Ricky in the Trailer Park Boys would say, "It's not rocket appliances."). As an example, to estimate the average loss in a diversified portfolio of BBB rated securities, first assume that the worst case scenario has the same failure rate as the worst 10-year period since 1970. As shown in Table 2, this equates to an 8.4% failure rate for BBB securities. Normally, we should be able to get some of that back but for this risk management exercise, assume we lose the lot.

Gearing

There is just one more thing to consider before finalising the worst-case scenario and that is to take into account the impact of gearing. Gearing simply magnifies gains and, more importantly for this analysis, losses. Assume these BBB style assets are geared four times – that is, four dollars are invested in these assets for every dollar of investor's funds. So, if we assume the maximum credit loss is 8% of assets, the total loss faced by this geared investor is four times that, or 32%.

Step 3.   Set a limit for the maximum portfolio impact of any one investment

The next step is to decide the credit loss you think the investor can accept from any one investment. My discussions with financial advisers have suggested a number of 1% to 2% of the overall portfolio is about right – in other words, losing somewhere between $5,000 and $10,000 of a $500,000 portfolio to a credit failure would leave the client unhappy but by no means destitute or seeking legal advice. This level will vary from client to client and adviser to adviser. Just imagine yourself sitting in front of the client explaining the loss, and you will quickly arrive at the right number.

Step 4.   Determine the maximum exposure to a particular investment.

The final step is to simply divide the maximum allowable credit loss for the investor by the expected worst-case loss for that investment. Table 3 below illustrates how this would pan out for the examples used above.

And that's all there is to it.

Table 3: Summary of risk limits for different securities assuming max portfolio loss of 1%

Eg	Avg spread on assets	Estimated rating assets	Estimated worst-case loss	Max exposure calculation	Max exposure
Great Southern TREES	2.0%	BB	100%	1%/1.00	1.0%
GoldBand Finance	2.4%	BB	100%	1%/1.00	1.0%
Fund A – no gearing	1.5%	BBB	8%	1%/0.08	12.5%
Fund B – 4 x gearing	1.5%	BBB	32%	1%/0.32	3.4%

Source: farrelly's

In an ideal world, the research houses and rating agencies would cover virtually all debt offerings and managed funds in a way that clearly communicated the risk of a particular offer and the first two steps wouldn't be necessary. Regrettably, we are a long way short of that ideal and, in the meantime, this process should help protect client portfolios from disastrous credit losses.