BlueBay
Asset Management

Income portfolios: spend your credit risk wisely

Bond investors are increasingly turning their attention to income-oriented portfolios, though with yields stubbornly low, these portfolios have become more reliant on credit risk to earn higher yields. This paper explores one view of efficiency when structuring income portfolios, where 'efficient' implies harvesting as much yield as possible for a given level of credit risk.

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When I started work in February 1991, the US 10-year Treasury yielded 8.3% and the UK 10-year Gilt 11.1% – yields that could be achieved with negligible credit risk. An investor could achieve notable returns with limited risk, and even higher yields by taking on credit risk. I didn't know how good I had it at the time.

In the decades that followed bond yields gradually fell, flattering bond returns to the extent they often appeared equity-like in magnitude. This was a golden era for bond returns, the likes of which we are unlikely to see for many decades to come, and probably not in my lifetime. During this time investors didn't have to be efficient to be successful, and both managers and investors paid more attention to the overall return than the income generated or the level of credit risk.

Times have since changed and the pursuit of greater efficiency is the focus of many industries. Rolls Royce provides a good example – the engine in today's models can run on the exhaust fumes of a model from the 1930s. Light bulbs are another example, as well as Uber, Amazon and so on.

A modern Rolls can run on the exhaust fumes of an old one

Transferring to the fixed income world, over the last decade many investors have taken on greater levels of credit risk to boost flagging returns. But are they doing so efficiently and what does efficiency even look like? We'll come to this after a quick diversion.

Diversion: two sides of a coin

Many investors focus on the total return achieved from a bond portfolio over time, which is a mixture of coupon income and capital appreciation. Other investors are purely interested in the coupon income, and often these investors will hold a bond for a considerable amount of time, perhaps to maturity. A bond's return and its coupon income are two sides of an indivisible coin – if you focus on the income, the bonds are still subject to mark-to-market movements, and vice versa. One difference is the coupon income is materially more predictable in the shorter term than changes in bond prices.

Being 'credit risk efficient'

We know investment is about the interplay of risk and return. Return has one dimension – risk has many, and investors have to manage an array of bond risks with the key ones being credit risk, volatility, duration and drawdown.

If the goal is to be efficient, an investor should first focus on how much extra return is generated per unit of credit risk (while keeping other risks constant). Sounds great, but what does that even mean – 'a unit of credit risk'? As we shall see, it can be calibrated.

Credit ratings and the probability of default

Rating agencies classify bonds to capture the risk of default (credit risk), with 'AAA' deemed the highest quality and 'CCC' towards the other end of the spectrum. Lurking behind each of these ratings is a number: the implied probability of default. The table right illustrates, based on multi-decade experience, the default probability associated with various credit ratings on a one-year time horizon. An 'AA-rated' bond chosen at random has a probability of 0.006% (1 in 170 chance) of defaulting in a given year, a B rated bond is 5% (1 in 20). These are long term figures and today's default levels are lower than average.

Credit rating	Annual default probability
AAA	0.001%
AA	0.006%
A	0.041%
BBB	0.236%
BB	1.19%
B	5.0%
CCC	18.50%

Source: Bloomberg, 30 June 2017

Now nobody likes bond mathematics, but being efficient requires precise measurement and we can think of a unit of credit risk as a change in a portfolio's average credit rating. Why include the probabilities? Because although the credit rating scale appears a linear progression from AAA to CCC, probabilities of default are far from linear.

The yield to credit quality relationship

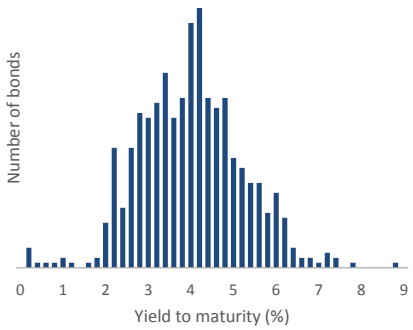
In constructing bond portfolios investors have a choice of 30,000+ individual bonds. It is straightforward to:

1. group the bonds of a similar rating, eg all those rated BB+
2. order the bonds from highest to lowest yields.

Alas there are a lot of additional complications to make a fair comparison: the term of the bond, liquidity, diversity of ownership, size of the issue and so on. Nonetheless, these factors can be taken into account and bonds with superior characteristics can be identified.

As an illustration the diagram right shows all the BB+ rated bonds in the high yield universe with yield on the horizontal axis and number of bonds on the vertical axis. As can be seen, yields range from around +2% to +6%.

BB+ rated high yield universe



Source: The BofA Merrill Lynch Global High Yield Constrained Index.

Yield to maturity to 25 August 2017. The yield reflects the costs of hedging non-USD bonds back to USD.

To be efficient, it makes sense to focus on the bonds with the highest yields, after allowing for other factors that impact bond yields. (We have a separate paper available detailing the profile of the credit markets, illustrating the relationship between yield and credit rating).

You haven't mentioned income yet?

That's because the key to an income portfolio is an attractive yield versus credit rating relationship for the underlying bonds. From this security universe an income, or cash flow matching, portfolio can be constructed with individual bond weights used to shape the cash flow pattern to meet investor requirements.

It's beyond our scope here, but considerable thought also needs to be given to determining expected future bond cash flows as for many bonds there is 'optionality', often manifesting itself whereby a bond issuer can repay early and alter the cash flow timing. For example, some 70% of high yield bonds can be repaid early by the issuer.

A framework to compare portfolios for efficiency

As previously mentioned, there are manifold portfolio parameters that can be compared, but a quick comparison can be achieved by plotting yield versus credit rating versus volatility. The chart right illustrates a comparison: portfolio A is an income-focused portfolio constructed by targeting securities with superior yield/credit risk qualities, and then diversifying. The 'Universe' represents the broader market, of which portfolio A is a subset.

Portfolio A is superior on all three metrics: yield, credit risk and expected volatility, noting other risk characteristics are similar to make the comparison fair.

One last thing : outside and inside view of credit risk

Clearly the credit rating and associated probability of default are crucial to these comparisons. Do all investors have the same view of the credit risk for a bond? No, far from it.

Let's make a distinction:

- The 'outside view' of credit risk is market observable from the likes of S&P, Moody's and Fitch.
- The 'inside view' of credit risk is the assessment by a BlueBay credit analyst. Our approach is to visit companies/governments and draw our own conclusions as to the probability of default (and implied credit rating). This can differ materially from the outside view.

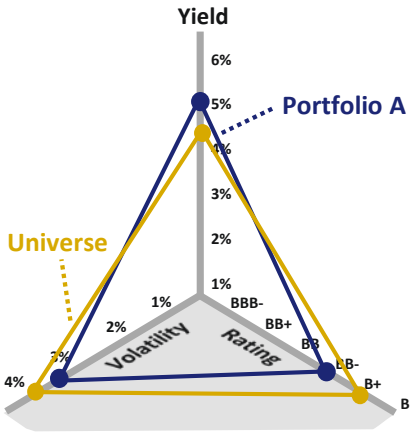
When constructing portfolios, the 'inside view' is the one that takes precedence.

In conclusion

Interest in any asset that generates a predictable income stream is on the rise. Within the bond world, increasingly these portfolios are being constructed across the credit rating spectrum to boost income, and it is incumbent on investors to ensure they are achieving the highest income relative to credit risk and volatility.

The moral: spend your credit risk wisely.

Portfolio parameters



Source: BlueBay calculations