MarquetteAssociates

To: Cincinnati Southern Railway
From: Brett Christenson, Marquette Associates, Inc., CFA, CFP®
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Re: Portfolio Return and Risk Scenarios

Assumptions:

- $1.3 billion valuation of asset
- 2.0% annual inflation
- Portfolio option A assumes $25M per year plus inflation (2.0% plus 2.0% infl. or 4.0% total return)
- Portfolio option B assumes $45M per year plus inflation (3.5% plus 2.0% infl. or 5.5% total return)
- Portfolio option C assumes $65M per year plus inflation (5.0% plus 2.0% infl. or 7.0% total return)
- Utilize Marquette's proprietary asset allocation software

Background:

For the purposes of this review, Marquette has limited the investment asset class options to nine: core fixed income, core plus fixed income, broad U.S. equities, broad non-U.S. equities, hedge fund of funds, core real estate, core infrastructure, private debt, and private equity fund of funds. Bonds and equities would have daily liquidity. Real estate, hedge funds, and infrastructure would have quarterly liquidity. Private debt would have annual liquidity, and private equity would be illiquid – approximately 10 year lock up of assets.

Our current assumptions on these asset classes are as follows:

	Average 10 Year	
Asset Class	Annualized Return	Annualized Volatility
Core Fixed Income	1.90%	3.10%
Core Plus Fixed	2.40%	3.20%
Broad U.S. Equity	7.40%	18.20%
Broad Non-U.S. Equity	7.90%	23.90%
Hedge Fund of Funds	5.40%	7.70%
Core Real Estate	6.20%	5.20%
Core Infrastructure	7.10%	8.70%
Private Debt	9.60%	8.20%
Private Equity Fund of Funds	11.30%	12.70%

An average 10 year annualized return can be interpreted as the model's estimated assumption of annual return. An average 10 year annualized volatility can be interpreted as the estimated annual standard deviation, or risk. The 10 year annualized volatility is technically a range above/below the return assumption at a 66.7% likelihood range of returns. For example, core fixed has a 66.7% likelihood of returning between -1.2% (1.9% return - 3.1% risk) and 5.0% (1.9% return + 3.1% risk). On the more aggressive end of the spectrum, broad non-U.S. equities have a 66.7% likelihood of returning between -16% (7.9% return - 23.9% risk) and 31.8% (7.9% return + 23.9% risk).

When building suggested portfolio options A, B, and C, Marquette is utilizing a combination of the suggested asset classes in order to build a diversified, institutionally acceptable portfolio, i.e. a portfolio that would be deemed typical if viewed by outside peers. In this way, these portfolios would be considered institutionally acceptable. However, in actual practice, the Cincinnati Southern Railway Board would obviously be free to consider a much broader range of asset classes and/or more concentrated allocations to specific asset classes. For example, there are many examples of multi-billion investment portfolios with concentrated allocations in infrastructure of 30% or greater. There are many well-known University endowments with private equity allocations of 40% or greater. However, for these scenarios, Marquette has kept things relatively straightforward to attempt to portray return/risk examples closer to average implementations so you can come to conclusions based on standard practices. We have constructed the options to meet the return goals with low risk, but there are multiple combinations of asset class targets that would likely meet similar return goals with similar risk.

Scenarios:

	Average 10 Year	
Portfolios	Annualized Return	Annualized Volatility
A ($25M per year plus inflation)	4.06%	4.31%
B ($45M per year plus inflation)	5.46%	6.38%
C ($65M per year plus inflation)	7.04%	9.30%

In the examples above, Portfolio A would have a very likely outcome of producing the necessary goals on a consistent basis. Portfolio B would also have a very likely outcome, with most years producing the necessary return and an occasional year of underperformance. Portfolio C would have the most risk, at a plus/minus 9.3% variation around 7% on an annual basis. There would be numerous years over any 10 year period of underperformance as well as outperformance. However, over long periods of time a 7% return can be assumed to be reasonably likely in Portfolio C. Many large institutional investment programs assume and meet a 7% return on their investment portfolio – but over longer periods of time than Portfolio A and B.

The portfolios were hypothetically constructed as follows:

Asset Classes	Portfolio A	Portfolio B	Portfolio C
Core Fixed Income	35.00%	20.00%	0.00%
Core Plus Fixed Income	30.00%	17.50%	17.00%
Broad U.S. Equity	20.00%	32.50%	35.00%
Broad Non-U.S. Equity	0.00%	0.00%	10.00%
Hedge Fund of Funds	0.00%	5.00%	5.00%
Core Real Estate	5.00%	10.00%	10.00%
Core Infrastructure	5.00%	7.50%	8.00%
Private Debt	5.00%	7.50%	7.50%
Private Equity Fund of Funds	0.00%	0.00%	7.50%

As you can see, total fixed income is reduced as return goals go up, in this case from 65% to 37.5% to 17%. Conversely, total equities (most risky asset classes) increases from 20% to 32.5% to 45%. The "alternative" asset classes help reduce exposure to equities by offering returns close to equities with less risk and in these examples increase from 15% to 30% to 33%.

Please let us know if we can be of any further assistance.

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