



To: Cincinnati Southern Railway  
From: Brett Christenson, Marquette Associates, Inc., CFA, CFP®  
Date: May 2, 2022  
Re: Portfolio Return and Risk Scenarios

**Recap:**

In a December 16<sup>th</sup>, 2021 memo Marquette utilized its asset allocation assumptions to construct three model portfolios highlighting risk and return characteristics of each. In this memo we are updating the assumptions by increasing the value of the asset from \$1.3B to \$1.6B and updating Marquette’s asset allocation assumptions from 12/31/21 from 9/30/21.

**Assumptions:**

- \$1.6 billion valuation of asset
- 2.0% annual inflation
- Portfolio option A assumes \$32M per year plus inflation (2.0% plus 2.0% infl. or 4.0% total return)
- Portfolio option B assumes \$56M per year plus inflation (3.5% plus 2.0% infl. or 5.5% total return)
- Portfolio option C assumes \$80M 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:

Asset Class	Average 10 Year	
	Annualized Return	Annualized Volatility
Core Fixed Income	1.9%	2.9%
Core Plus Fixed	2.5%	3.1%
Broad U.S. Equity	7.2%	17.8%

Broad Non-U.S. Equity	7.4%	24.0%
Hedge Fund of Funds	5.1%	7.4%
Core Real Estate	6.5%	5.2%
Core Infrastructure	7.0%	8.7%
Private Debt	9.6%	8.2%
Private Equity Fund of Funds	11.0%	12.7%

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 -1.0% (1.9% return – 2.9% risk) and 4.8% (1.9% return + 2.9% risk). On the more aggressive end of the spectrum, broad non-U.S. equities have a 66.7% likelihood of returning between -16.6% (7.4% return – 24.0% risk) and 31.4% (7.4% return + 24.0% 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 allocations within more acceptable or common ranges to attempt to portray return/risk examples closer to institutional norms. 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:

Portfolios	Average 10 Year	
	Annualized Return	Annualized Volatility
A (\$32M per year plus inflation)	4.17%	4.07%
B (\$56M per year plus inflation)	5.60%	6.24%
C (\$80M per year plus inflation)	7.07%	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. 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	37.5%	22.5%	0%
Core Plus Fixed Income	30.0%	17.5%	19.0%
Broad U.S. Equity	12.5%	22.0%	31.0%
Broad Non-U.S. Equity	5.0%	8.0%	12.0%
Hedge Fund of Funds	0%	5.0%	5.0%
Core Real Estate	5.0%	10.0%	10.0%
Core Infrastructure	5.0%	7.5%	8.0%
Private Debt	5.0%	7.5%	7.5%
Private Equity Fund of Funds	0.00%	0.00%	7.5%

Hopefully the data provides some confidence that an excess return of 2-5% above long-term inflations expectations of 2% is achievable with relatively low risk diversified portfolio options.

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

The sources of information used in this report are believed to be reliable. Marquette Associates, Inc. has not independently verified all of the information and its accuracy cannot be guaranteed. Opinions, estimates, projections and comments on financial market trends constitute our judgment and are subject to change without notice. References to specific securities are for illustrative purposes only and do not constitute recommendations. Past performance does not guarantee future results.

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