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risk = ability + appetite

Investment risk tolerance for not-for-profit healthcare systems

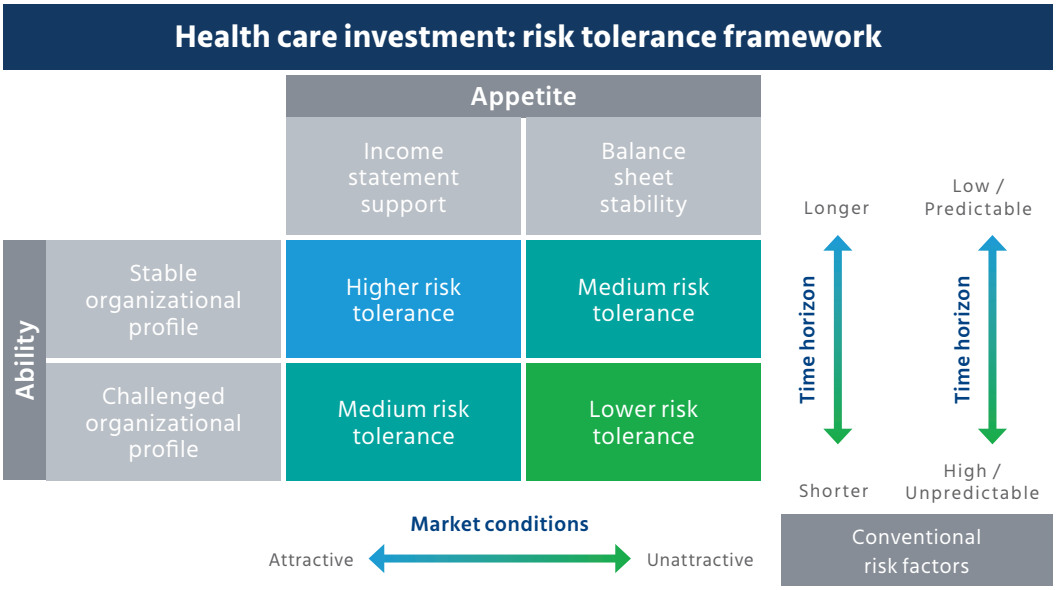
welcome to brighter

the risk tolerance decision:
Where to start?

Risk is a multi-faceted concept and cannot be distilled into one singular measure. When coupled with the complex nature of a health system, the subject of investment risk tolerance can be daunting. To bring clarity to the process, Pavilion's Healthcare Strategic Research Team (SRT) developed the framework outlined below. It is built upon Pavilion's Comprehensive Analysis of Risk Exposure (CARE)* philosophy which takes a holistic view of how a system's organizational risk factors influence its investment strategy. Once the connection is made, it is important to integrate those factors into the determination of investment risk tolerance.

The matrix below defines risk tolerance as the intersection of ability and appetite to take risk, both of which are influenced by a combination of enterprise-specific factors and conventional inputs. It is intended to serve as a practical starting point for identifying risk capacity. From an enterprise perspective, risk-taking ability is driven by an assessment of organizational profile (i.e., stable vs. challenged); whereas, risk-taking appetite is informed by portfolio purpose (i.e., the tradeoff between balance sheet stability and income statement support). In terms of conventional inputs, risk-taking ability is influenced by time horizon and liquidity needs, while appetite is shaped by market conditions.

In this paper, we will describe the elements of this risk framework in further detail and examine how health systems can apply it to their unique needs and circumstances and determine their organization's investment risk tolerance.



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ability to take risk:

Organizational profile

A health system's organizational profile includes an in-depth understanding not only of its investment portfolios, but the underlying business and mission as a whole. The table below outlines four key areas of assessment: operating environment, financial performance, capital plans, and credit rating.

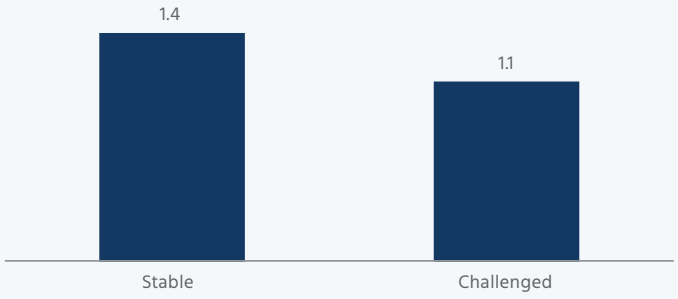
	Ability to take risk	
	Organizational profile	
Key factors assessed	**Operating environment**	• Geographic footprint • Number of hospitals, bed count • Market competition • Patient volume trends • Payer mix
	Financial performance	• Revenue base and growth rate • Margins (operating, excess, cash flow, etc.) • Operating surplus vs. shortfalls • Key metrics vs. peers, covenants, and internal targets • Key metrics multi-year trends
	Capital plans	• Size, timing, and type of capital spending • Long-range strategic planning vs. routine spending • Sources of funding, debt issuance • Implications on debt / liquidity ratios • Cost of capital
	Credit rating	• Current rating and outlook • Potential credit rating positives / negatives • Key metrics vs. credit rating medians • Downgrade risk

As one would expect, a positive operating environment and, commensurately, solid financial performance suggests an above average ability to take investment risk. Additionally, the contribution of these elements to a strong enterprise profile is supportive of a stable credit rating and reduces downgrade risk.

In terms of capital plans, risk-taking ability is heavily influenced by the combination of funding sources chosen to meet capital needs. Those sources typically include a mixture of surplus operating cash, operating pool investment assets, foundation assets, and debt issuance. For example, a system with strong operations and flexibility to take on new debt is likely in a position to keep capital contributions from operating pool assets at a sustainable rate (defined as the amount of operating pool capital contributions as a percentage of total operating pool assets) which is supportive of risk-taking ability.

However, a system undergoing operational challenges (and associated cash flow pressures) with limited capacity for new debt may have an elevated reliance on operating pool assets to fund capital needs. While this may invoke a desire to pursue higher investment returns to meet those requirements, it would also mean higher potential downside when funding options are already limited. In this case, investment risk-taking ability would be tempered. Furthermore, capital plans for a system in this position may be constrained to routine needs with limited capacity for strategic growth initiatives which can create longer-term implications for enterprise strength. As shown in Figure 1, capital spending for providers with a challenged organizational profile tends to barely exceed depreciation while it is higher for systems with a strong profile*.

Figure 1.
Capital spending for providers by organizational profile



*Throughout this paper, Moody's 2017 Aa and Baa median data are used as proxies for stable and challenged organizations, respectively. The data are based on audited fiscal 2017 financial statements, which have varying ending dates.

appetite to take risk:
Portfolio purpose

Risk-taking appetite is driven by portfolio purpose, ranging from balance sheet stability to income statement support*. Ideally, a portfolio will contribute to both of these objectives. However, it is important to establish proper balance between the two. While ability to take risk focuses on a quantitative assessment of organizational profile, appetite to take risk is influenced by qualitative organizational preferences. Therefore, the question shifts from "how much risk can the organization take?" to "how much risk does it need to take?"

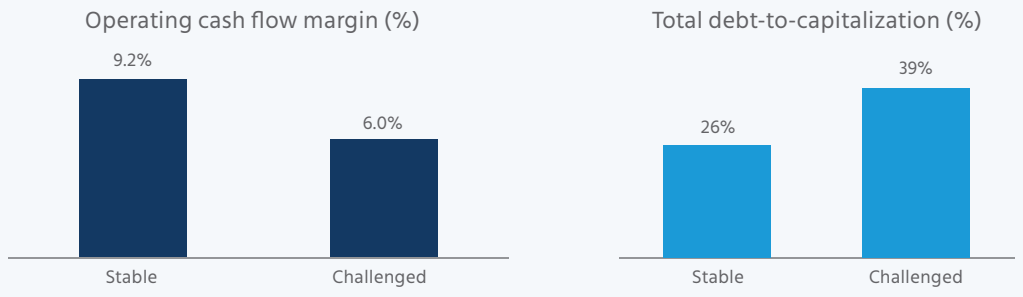
To help answer the latter, a system should consider the following:

1. Operating cash flow generation
2. Debt capacity
3. Amount of operating pool assets

For example, a system that is generating ample cash flow from its underlying business and has capacity to issue additional debt may prefer to fund a majority of capital needs from those two sources of cash and place an emphasis on balance sheet stability for operating pool assets in support of a stable credit profile. In this scenario, appetite to take risk is moderated despite an above average ability to take risk. In other words, while the system can take above average risk, it does not need to take that level of risk. However, if ambitious capital plans necessitate a meaningful contribution from operating pool assets or if there is a desire to avoid over-utilizing debt capacity, this suggests a preference for income statement support and an elevated risk appetite. This could be bolstered further if there is significant headroom between key financial metrics and credit rating medians or debt covenants, limiting downgrade risk.

On the other hand, a system with a challenged organizational profile may be experiencing cash flow shortfalls and have limited capacity for new debt. In addition, there may be credit rating uncertainties, including a negative outlook. In this situation, portfolio purpose may often lean toward balance sheet stability. If there is a preference for income statement support, it will have a risk ceiling. A comparison of operating cash flow generation and debt capacity is shown in Figure 2.

Figure 2.
Operating cash flow generation and debt capacity

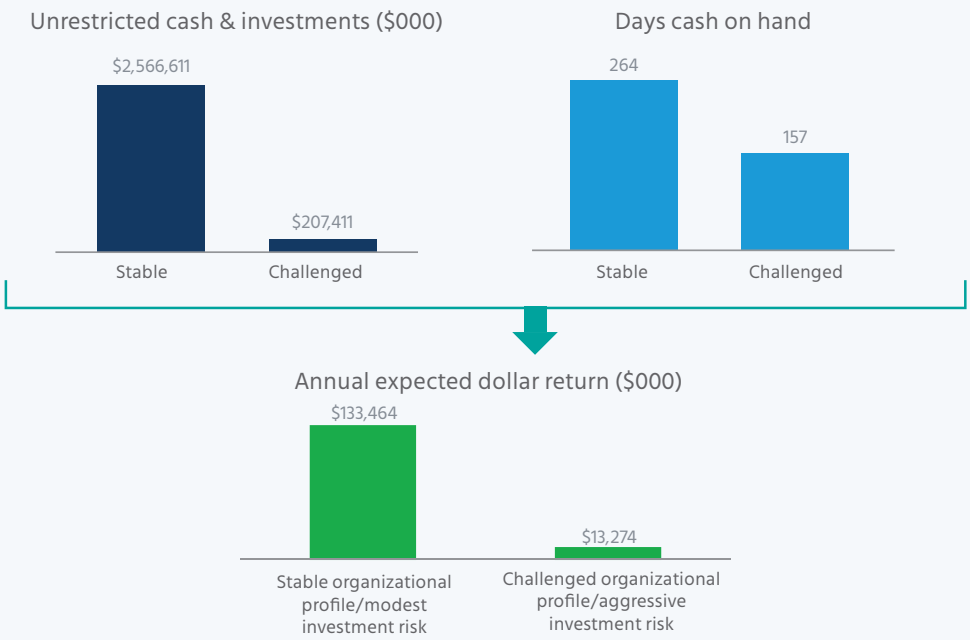


Moody's 2017 Aa and Baa median data are used as proxies for stable and challenged organizations, respectively.

*Income statement support is defined as meaningful contribution to non-operating income which will ebb and flow based on market performance. One could argue that a lower, but more stable, contribution to non-operating income is equally supportive to a system's income statement. However, we believe this type of income profile is captured within a preference for balance sheet stability.

As it relates to the amount of operating pool assets, a financially strong system is likely to have a sizeable portfolio, given the direct relationship to key metrics like days cash on hand (DCOH) (Figure 3). Therefore, even a modest risk and return profile can translate into a meaningful dollar contribution to non-operating income while also maintaining balance sheet stability. Meanwhile, a financially challenged system is likely to have a relatively smaller operating asset pool which could limit the potential for non-operating income contribution even if the portfolio's risk and return profile is increased. For example, in Figure 3 below, due to the relative size of operating pool assets, even a stable organization pursuing a modest investment risk profile (40/60 stock/bond mix) may be expected to produce around ten times the annual dollar return contribution when compared to a challenged organization with an aggressive investment risk profile (80/20 stock/bond mix).

Figure 3.
Operating pool assets and financial strength



For illustrative purposes only. Past performance is no guarantee of future results. Please see Important Notices section for further information on Return Expectations. Annual expected dollar returns are based on Moody's 2017 median unrestricted cash and investments and Mercer's long-term (20-year) expected returns and assumes no portfolio inflows or outflows. Modest investment risk profile is based on a 40%/60% mix of stocks and bonds and aggressive investment risk profile is based on an 80%/20% mix of stocks and bonds. Sample mixes of stocks and bonds are believed to be reasonable proxies for modest and aggressive portfolio risk profiles. In practice, other factors influence a portfolio's risk profile and are not incorporated in this example.

As one can see, there are several qualitative considerations to be made when determining risk appetite. Ultimately, it comes down to preference toward an operating pool's role within the overall organization.

conventional risk factors:

Time horizon, liquidity needs, and market conditions?

Investors must ultimately utilize conventional risk management tools to implement investment strategy. Therefore, once there is a firm understanding of risk tolerance from an organizational standpoint, health systems can make an informed decision around time horizon and liquidity needs, two primary influencers of risk-taking ability, and market conditions which influence risk-taking appetite.

	Conventional risk factors		
	Time horizon	Liquidity needs	Market conditions
Primary determinants	• Duration of liabilities	• Size, timing, and predictability of cash needs	• Valuations, macro fundamentals, market sentiment

Time horizon

A portfolio's time horizon can ultimately be identified by examining the duration of its liabilities. This is a straightforward exercise for many portfolio types. For example, funds set aside for a construction project have a finite life of generally three to five years, resulting in a low ability to take risk and a conservative investment profile. A frozen defined benefit plan exists to meet a known liability with a shrinking duration that can be calculated with some degree of certainty, allowing for risk profile to be adjusted over time via glide path. And a foundation portfolio is intended to last into perpetuity which is supportive of a long-term growth-oriented risk profile.

For an operating pool, identifying time horizon can be a bit trickier. Ultimately, these funds are intended to support capital needs well into the future which aligns with a long time horizon. However, many health systems also rely on operating pools to support shorter-term operating needs. For this reason, it is common for operating assets to be separated into distinct short-term pools, often times corresponding to a certain level of days cash on hand, as well as long-term pools. In addition, a separate short-term pool may exist as a mechanism to hold standby funds in the event they are needed to repurchase contingent demand debt. This is certainly a viable method and allows for the efficient transfer of capital from one pool to another as needed. However, it is also possible to take a blended time horizon approach and aggregate operating assets into a single pool. In general, we believe a long-term horizon is appropriate for most health system operating pools. While this suggests a focus on growth due to the ability to overcome numerous market cycles, it is important to realize that other factors can dampen an operating pool's risk profile, namely liquidity needs.

Liquidity needs

Alongside time horizon, an operating pool's liquidity needs are a key determinant of risk-taking ability. Liquidity needs can be defined as the size and timing of cash needs from a portfolio. In addition, the predictability of those cash needs should also be considered. This can be aided by incorporating forecasts from long-range strategic plans as well as projections of sources and uses of cash for shorter-term routine needs.

Once identified, it is helpful to translate the stream of expected cash needs from dollar terms into their percentage of operating pool assets to gauge the sustainability of cash outflows. In general, annual cash needs of 4-5% (or less) of a portfolio are considered sustainable and can support an above average ability to take risk. However, as spending rate climbs above that level, risk-taking ability begins to decline. And if cash needs have a high degree of unpredictability, risk profile is tempered further.

It is important to distinguish between liquidity profile, as often reported to ratings agencies (i.e. daily, monthly, quarterly, annual, etc.) and liquidity budget. For example, health systems should ensure that liquidity needs can be met in both normal and stressed market environments. In normal environments, cash needs can be sourced in an orderly fashion throughout the portfolio and liquidity profile provides a good indicator of that. However, during stressed market environments, growth assets (e.g. stocks) are likely to decline the most. Despite the highly-liquid nature of many equity investment vehicles, forced selling in a stressed environment locks-in investment losses. Therefore, it is necessary to stress test the liquidity budget to gain comfort that exposure to defensive assets (e.g. fixed income) is adequate to fund liquidity needs while allowing for a recovery in growth assets. Furthermore, for operating pool's with private markets exposure, stress testing should also incorporate liquidity needs to fund capital calls along with the denominator effect of private markets exposure (which can be slow to reprice) growing as a percentage of the overall pool due to a precipitous decline in total fund value.

Market conditions

While portfolio purpose drives risk-taking appetite from an organizational perspective, capital market conditions influence risk appetite from a conventional standpoint. Simply put, investors should be aware of how much they are getting paid to take risk. Market participants, especially those with long time horizons, can generally expect to add value from valuation-focused portfolio positioning and awareness of where capital markets are in various cycles (economic, business, credit, etc.).

Pavilion's Dynamic Asset Allocation (DAA) efforts take a comprehensive view of major traditional asset classes and aim to enhance portfolio positioning by recommending overweight, neutral, or underweight exposures relative to strategic targets. DAA can be distilled into three main components: valuations, macro fundamentals, and market sentiment. It is not intended to serve as a market timing tool, rather, as a process for allocating capital in prevailing market environments, identifying outlier conditions, and a source of added value over an intermediate time frame.

Pavilion's dynamic asset allocation overview

Major asset class views

Public equities	Growth fixed income	Defensive fixed income
US Equities	Emerging Debt Local	US Treasuries
US Small-Cap Equities	Emerging Debt Hard Currency	US TIPS
International Developed Equities	US / Global High Yield	US Investment-Grade Corporates
International Small-Cap Equities	US / Global Loans	US Duration
Emerging Market Equities		
Global Defensive Equities		
REITs		
Listed Infrastructure		
Currency Hedge		

conclusion:

Putting it all together

Every health system is unique. The level of investment risk pursued involves a combination of quantitative and qualitative considerations around the balance between ability and appetite to take risk. No single variable should be viewed in isolation and, in practice, nuances will exist. However, we believe our framework provides practical guidance and clarity around the risk tolerance decision. Once established, focus can then shift to developing a strategic asset allocation that seeks to optimize investment returns within established boundaries.

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