HIGHLAND

INSIGHT
JULY 2016

A HOSPITAL'S BALANCING ACT: OPERATIONS, INVESTMENTS, AND INFLATION

HIGHLIGHTS

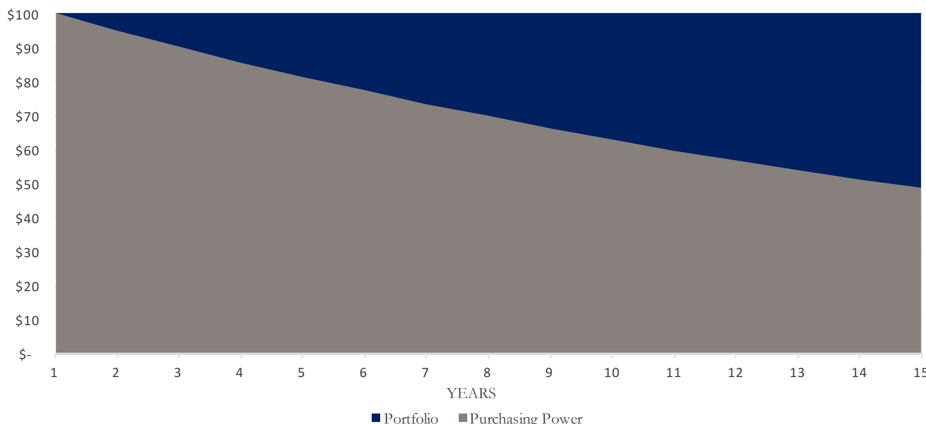
- Inflation poses a significant risk to investors, especially when levels of inflation are low. For not-for-profit healthcare investors this can be detrimental, as healthcare inflation has historically exceeded overall inflation.
- Not-for-profit hospitals must contend with the impact of inflation on both its operations and portfolio. This can further impact a system's ability to access debt markets while constraining future capital expenditures.
- The investment portfolio provides the best means to protect not-for-profit healthcare investors from inflation. Unfortunately, many hospitals remain underallocated to inflation-sensitive assets, making them ill-prepared to handle increases in inflation.

INFLATION AND ITS RISKS

Inflation, simply defined, is a sustained increase in the general level of prices for goods and services. Its root causes may vary, but it is generally the result of too much money chasing too few goods. Inflation is one of the most overlooked and unmonitored risks in an investment portfolio, especially when levels of inflation are low. It is the silent threat that slowly and methodically erodes an institution's future purchasing power. As discussed in Highland's recent Insight titled ***Inflation: The Silent Threat***, with a 5% inflation rate, an investor's purchasing power is cut in half every 14 years (see Figure 1).

FIGURE 1

INFLATION'S IMPACT ON PORTFOLIO'S PURCHASING POWER



SOURCES: ELLIS; HIGHLAND ASSOCIATES; BLUE INDICATES A CONSTANT PORTFOLIO VALUE OF $100; GREY INDICATES THE PURCHASING POWER OF THE PORTFOLIO EACH YEAR WITH A 5% INFLATION RATE

INVESTING FOR THE TOTAL CLIENT

- *Investment services*
- *Reporting services*
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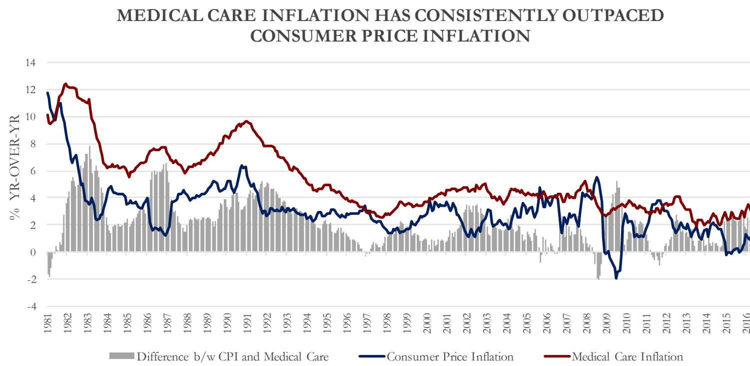
Highland Associates, Inc. is an independent institutional investment advisor headquartered in Birmingham, Alabama. Highland was founded specifically to help develop, implement and maintain investment management programs for institutions. We serve a national client base of investors including not-for-profit healthcare organizations, foundations, endowments, defined benefit plans, defined contribution plans, and high-net worth individuals. As of March 31, 2016, we serve as investment consultant on approximately $17.4 billion in assets. Please visit the website at www.highlandassoc.com to learn more.

While inflation has been at historic lows since the Global Financial Crisis, it is during these times that the impact of inflation is often overlooked. Hospitals face an even tougher task as medical inflation has consistently outpaced the general overall level of inflation. Consumer price inflation (CPI) has averaged 3.4% since 1980 and has had a positive return 97% of the time on a rolling one-year basis. However, for hospitals, inflation is even more detrimental. Medical care inflation has averaged 5.4% during that time frame and demonstrated a positive return 100% of the time on a rolling one-year basis (Figure 2). This makes protecting a healthcare organization's purchasing power that much more important due to the higher rate of inflation the business incurs.

FIGURE 2



SOURCES: BLS; FACTSET; HIGHLAND ASSOCIATES

PricewaterhouseCoopers' Health Research Institute projects medical costs to rise 6.5% in 2016, driven by higher costs for specialty drugs and expenses related to cybersecurity. Furthermore, the firm expects medical costs to continue to remain elevated over the next 10 years, driven in part by higher expenses from baby boomers, higher incomes nationally, and elevated spending by the government. Additionally, the Centers for Medicare and Medicaid Services (CMS) released 10-year projections for national health expenditures. According to the CMS, expenditures currently amount to $3.2 trillion, or 18% of the U.S. GDP. By the year 2024, these costs are expected to total $5.4 trillion and encompass 20% of the U.S. GDP. As illustrated in Figure 3, this equates to a 6% growth rate in spending per year.

Healthcare spending has historically been a leading indicator of healthcare inflation, thus the CMS forecasts imply a continued upward trend in healthcare inflation.

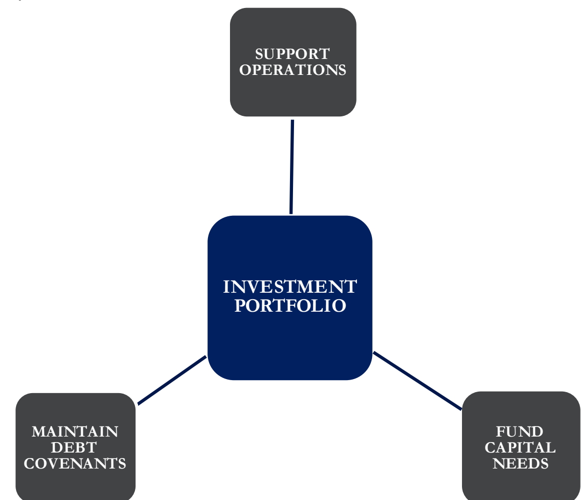
FIGURE 3

SOURCES: CENTERS FOR MEDICARE AND MEDICAID STUDIES; HIGHLAND ASSOCIATES

INFLATION'S IMPACT ON NOT-FOR-PROFIT HEALTHCARE INVESTORS

The not-for-profit (NFP) healthcare space represents a unique set of institutional investors who are faced with a challenging and ever-changing environment. These organizations are charged with the ultimate goal of providing quality healthcare to their communities. NFP investment portfolios continue to play a growing role in an organization's ability to support and extend its mission. While investment objectives for other institutional investors are fairly straightforward, NFP hospital portfolios are multi-faceted, as illustrated in Figure 4.

FIGURE 4



SOURCE: HIGHLAND ASSOCIATES

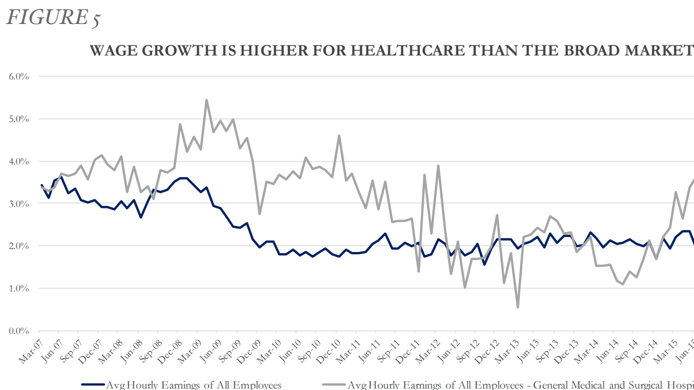
Since the investment portfolio serves as a key area of support for multiple objectives of the NFP healthcare entity, growing a portfolio's value is imperative. Inflation threatens this goal because it aims to decrease a portfolio's future purchasing power. Hospitals are unique in that inflation impacts not only the investment portfolio but also operations, and at a much higher rate than general inflation. Furthermore, through its impact on operations, inflation can negatively impact a hospital's ability to access debt markets and impair its ability to fund future capital expenditures.

For most healthcare organizations, labor is the single largest component of hospital expenses, representing nearly two-thirds of total costs, according to the Massachusetts Hospital Association (MHA). MHA recently published research on hospital expenses, and their findings were truly reflective of the challenges healthcare systems face with medical inflation as a whole. Key findings included the following:

- Wages for registered nurses increased by 50.2% from 2004-2008. Wages for other (non-RN) nursing staff grew by 45.1%. Physicians' wages grew by 34.2%. All other (non-nursing, non-physician) staff wages grew by 25.6%.
- Fringe benefits increased by 42.5%.
- Patient care supplies and other expenses grew by 34.7%.
- Capital-related expenses increased by 23.1%.

The tremendous growth in labor costs is one of the most significant factors in the rise of the overall cost of hospital care. According to the Bureau of Labor Statistics, wages for general medical and surgical hospitals have averaged a 3% year-over-year rise since 2007, which is 0.60% higher than wages for all workers (shown in blue, Figure 5).

FIGURE 5

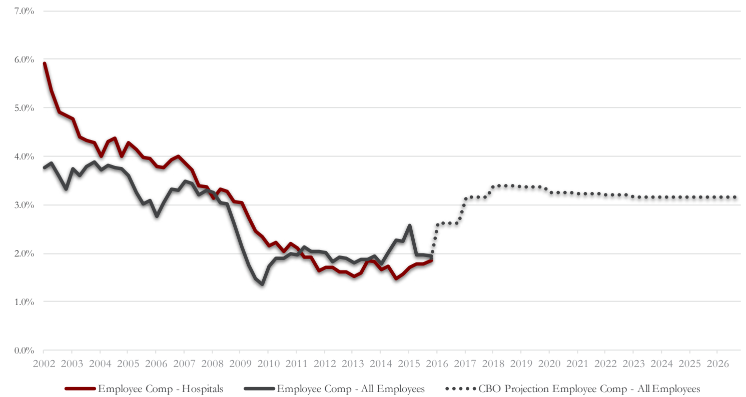


SOURCE: BLS; HIGHLAND ASSOCIATES

Furthermore, the Congressional Budget Office (CBO) forecasts employee compensation for all workers to rise more than 3% for the next 10 years (Figure 6). If the historical trends continue, then it is plausible that wages could rise even higher for hospital workers, thus placing added pressure on hospitals.

FIGURE 6

EMPLOYEE COMPENSATION - HOSPITALS AND ALL WORKERS

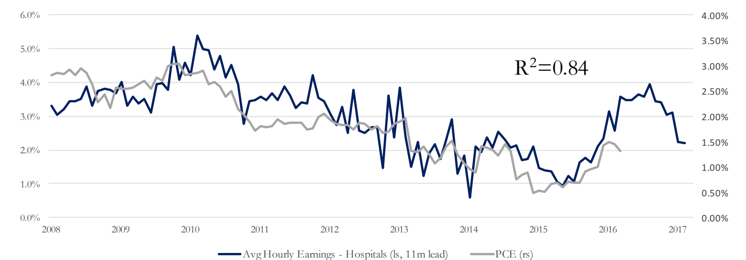


SOURCES: BLS; CONGRESSIONAL BUDGET OFFICE; HIGHLAND ASSOCIATES

Personal Consumption Expenditures (PCE) is another measure of overall price changes. As Figure 7 indicates, average hourly earnings of hospital employees lead that of the Healthcare PCE index by 11 months. Highland examined the relationship between hospital wages and overall healthcare inflation to determine if a rise in wages predicts an increase in inflation. Based on our analysis (utilizing a linear regression) of PCE inflation and hospital wages, we expect the Healthcare PCE index will rise from a 1.0% yearly growth rate on December 2015 to 1.9% by year end 2016. All of these factors are pointing toward higher healthcare expenses and inflation in the future.

FIGURE 7

AVERAGE HOURLY EARNINGS OF HOSPITAL EMPLOYEES LEADS THE TREND IN HOSPITAL PRICE INFLATION



SOURCES: BLS; BUREAU OF ECONOMIC ANALYSIS HIGHLAND ASSOCIATES; AVERAGE HOURLY EARNINGS HAVE BEEN ADVANCED 11 MONTHS; R SQUARED = 84% AND A CORRELATION OF 0.90

The NFP healthcare space has always been challenged from an operational standpoint due to the higher labor costs combined with a revenue structure that typically does not fully reimburse the full cost to provide quality healthcare. According to Moody's 2014 Healthcare Median Report, the median operating margin for A-rated NFP hospitals was just 3.1%. Furthermore, operating cash flow is expected to remain low. The largest hospital systems with revenues greater than $2 billion are expected to grow their cash flow 3-4%, whereas hospitals with revenues less than $1 billion will likely generate negative operating cash flow growth (see Figure 8). With healthcare labor costs continuing their trend up and margins already at thin levels, NFP investment portfolios will likely be called on to further supplement operations.

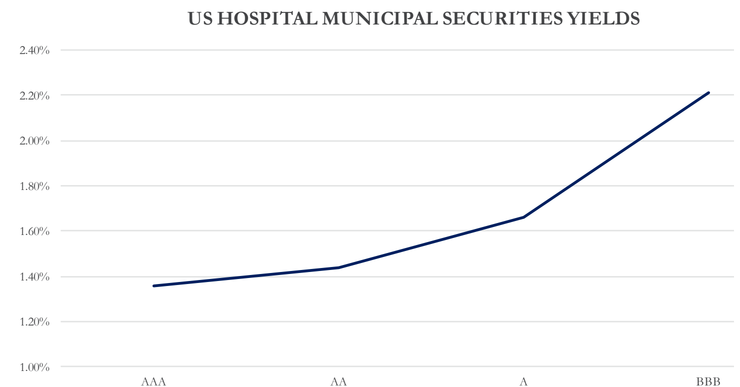
FIGURE 8

SOURCES: MOODY'S INVESTORS SERVICES; 2015 OUTLOOK - US NOT-FOR-PROFIT HEALTHCARE; PNC; HIGHLAND ASSOCIATES

IMPACT ON CREDIT RATINGS

NFP hospitals have two sources of capital: (1) retained earnings/ investment portfolios and (2) debt. In order to access capital markets for financing, NFP hospitals must maintain or increase their credit rating with firms such as Moody's, Standard & Poor's, or Fitch. A downgrade in credit rating could significantly increase a system's cost of debt. According to the BofA Merrill Lynch US Hospital Municipal Securities index as of June 30, an AA-rated bond has a yield to maturity of 1.46% while an A and BBB yield 1.66% and 2.21%, respectively (Figure 9).

FIGURE 9



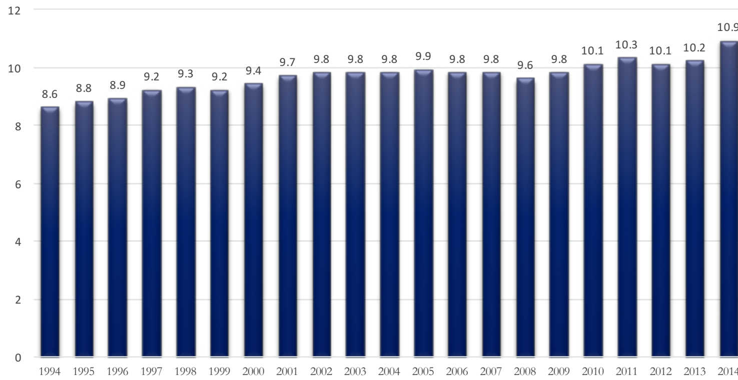
SOURCES: BOFA MERRILL LYNCH; HIGHLAND ASSOCIATES

In the NFP healthcare space, days cash on hand (DCOH) is an important financial metric that plays a central role in the credit analysis performed by ratings agencies. According to Moody's, a weight of 10% is assigned to DCOH within its quantitative NFP Healthcare Scorecard (quantitative factors are later combined with certain qualitative factors to arrive at a final rating). All else equal, an entity needs to maintain its DCOH near the category median if it wants to preserve its credit rating. Since DCOH takes into account both a system's investment portfolio and operating expenses, inflation can have a substantial impact on the measure. If an investment portfolio fails to keep pace with the overall level of healthcare inflation, a system's DCOH calculation will decline (all else being equal), and could have a direct impact on a hospital's total financing costs.

IMPACT ON CAPITAL EXPENDITURES

Healthcare entities are capital-intensive institutions with extensive investments in property, plant, and equipment that have been funded by equity (investment portfolios) as well as debt. Average age of plant is a common financial statistic that measures the average financial age of the fixed assets of a hospital. As Figure 10 illustrates, this is a ratio that has been on an upward trend in recent years, indicating a growing rate of consumed capital. The median average age of plant has risen 1.3 years since 2008 and is at an all-time high. With hospitals operating cash flow growth rate under pressure the last few years, management has delayed replacing aging plant and equipment.

FIGURE 10



SOURCES: OPTUM; ALMANAC OF HOSPITAL FINANCIAL AND OPERATING INDICATORS, 2005, 2008, 2009, 2010, 2011, 2013, 2014, 2015, AND 2016; AND CHIPS, THE ALMANAC OF HOSPITAL AND FINANCIAL OPERATING INDICATORS, 1994 AND 1996-7; HIGHLAND ASSOCIATES

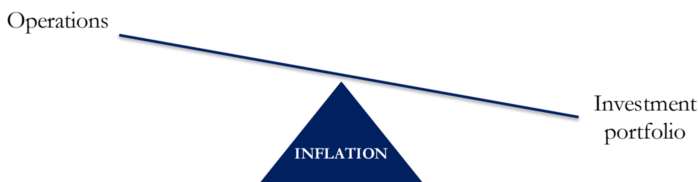
Capital expenditures are also subject to various forms of inflation, as their cost in the future most certainly will not equal the cost to purchase or build today. To put this into perspective, according to the Turner Building Cost Index, which measures costs in the non-residential construction market in the U.S., building costs have risen an annualized 4.6% the last three years.

Aside from traditional brick-and-mortar buildings, other intensive capital investments include items such as medical imaging equipment (MRI and PET machines), where prices can approach $2 million per machine depending on the level of technology. These costs have seen rapid increases over the last 10-20 years given significant advances in technology and overall levels of sophistication. Provided that investment portfolios are a funding source for future capital expenditures, it is imperative for NFP healthcare portfolios to provide a return that exceeds the rate of inflation on these assets.

HIGHLAND'S VIEW: THE IMPACT ON INFLATION

With very little room to contain costs on the operational side, hospitals are forced to turn to their investment portfolios to protect against the adverse impact of inflation (Figure 11).

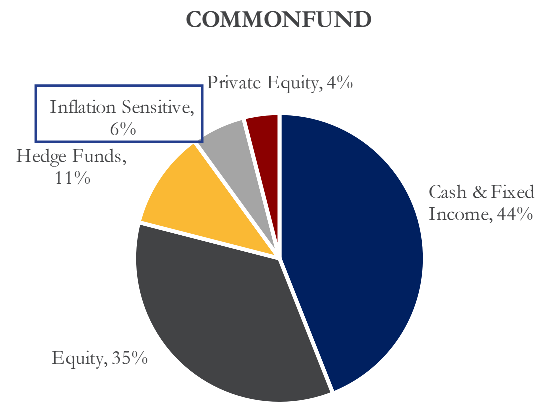
FIGURE 11

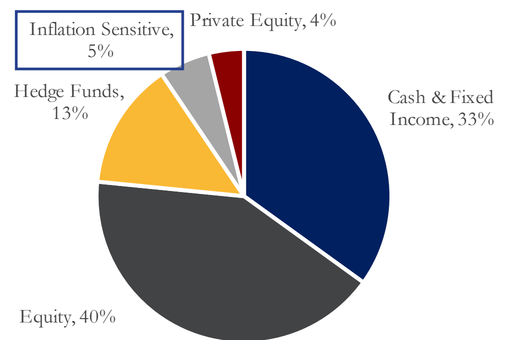


SOURCE: HIGHLAND ASSOCIATES

Despite inflation representing a significant risk to NFP healthcare investors, their portfolios remain underallocated to inflation-sensitive assets. In 2013, both The Commonfund (Figure 12) and Health Management Academy (Figure 13) performed asset allocation surveys of numerous healthcare operating portfolios, and the results show average allocations of only 5% and 6%, respectively.

FIGURE 12 &13





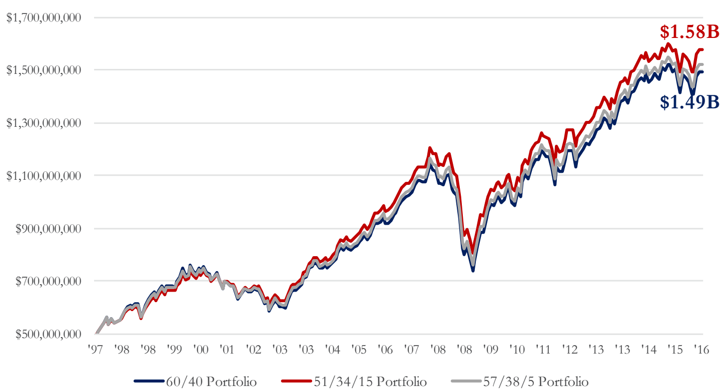
SOURCE: COMMONFUND INSTITUTE; THE HEALTH MANAGEMENT ACADEMY; HIGHLAND ASSOCIATES

While a 5% allocation to inflation-sensitive assets improves the risk and return characteristics of a traditional 60% stock/40% bond portfolio (60/40), Highland believes investors would have a more favorable outcome with a higher allocation to these assets. As discussed in Highland's Insight Inflation: The Silent Threat, an optimal inflation-sensitive basket consists of 50% Private Real Estate, 25% TIPS, 15% Commodity Equities, 5% Commodity Futures, and 5% Infrastructure.

For our analysis, we took a traditional 60/40 portfolio and from it added a 15% allocation to a basket of inflation-sensitive assets

(51/34/15 Portfolio). (Note: The allocation to stocks and bonds were reduced proportionally). As Figure 14 illustrates, a $500 million portfolio invested in the 51/34/15 portfolio on March 1, 1997, (the inception date of the TIPS market) grew to $1.58 billion today. This results in an additional $86 million when compared to a traditional 60/40 portfolio, and an additional $58 million compared to a portfolio with just 5% allocated to inflation-sensitive assets (as shown by the 57/38/5 Portfolio).

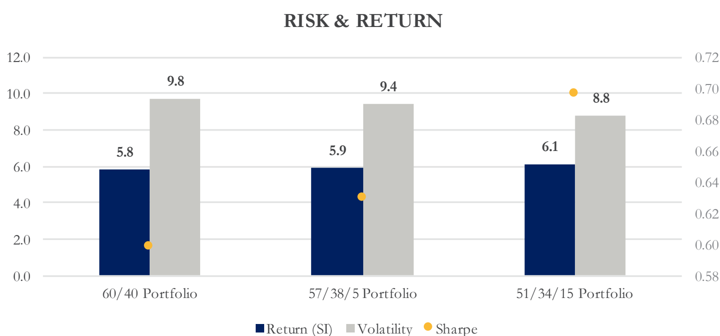
FIGURE 14



SOURCES: MSCI INVESTORFORCE; REPRESENTS EQUITIES/FIXED INCOME & CASH/INFLATION-SENSITIVE ASSETS; STOCKS ARE REPRESENTED BY THE MSCI ALL COUNTRY WORLD INDEX AND BONDS BY THE BARCLAYS CAPITAL AGGREGATE INDEX; INFLATION-SENSITIVE ASSETS CONSIST OF 50% NCREIF PROPERTY INDEX, 25% BARCLAYS CAPITAL 1-10 YEAR TIPS, 15% MSCI COMMODITY PRODUCERS INDEX, 5% BLOOMBERG COMMODITY INDEX, AND 5% S&P GLOBAL INFRASTRUCTURE INDEX.

As illustrated in Figure 15, a higher allocation to inflation-sensitive assets also reduces the portfolio's overall volatility over the same time period, resulting in a higher overall risk-adjusted return (return per unit of risk). This is also known as a portfolio's Sharpe Ratio (a higher Sharpe Ratio is more desirable).

FIGURE 15

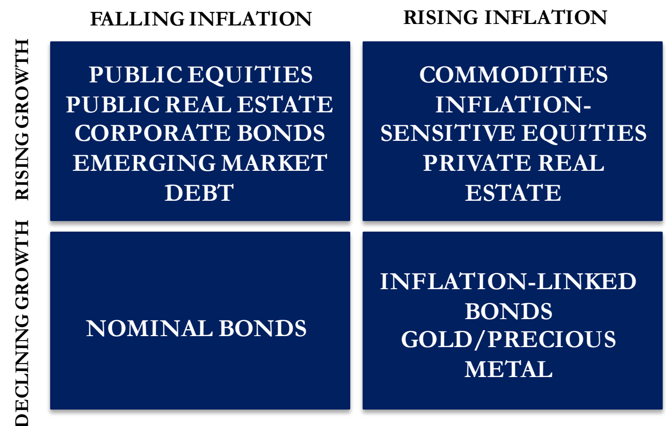


SOURCES: HIGHLAND ASSOCIATES; SHOWN IN %S, RETURN AND VOLATILITY SHOWN ON LEFT AXIS, SHARPE RATIO SHOWN ON RIGHT AXIS

Highland's view is that a rise in inflation is on the horizon. In ***Inflation: The Silent Threat***, we discussed how the seeds for a rise in inflation have been planted by central banks in the wake of the Global Financial Crisis. The evidence shows that many NFP healthcare investors are ill-prepared for an increase in inflation rates.

Our belief is that many NFP healthcare investors view inflation-sensitive assets as an insurance policy, allocating to these assets in case there is a spike in inflation. This is likely the reason for such a low weighting in healthcare portfolios. Unfortunately, this approach only protects a portfolio in one type of inflationary environment. We believe in owning a basket of inflation-sensitive assets that can protect in any type of inflation environment (as shown in Figure 16 below). With this approach, a portfolio is protected before, during, and after any event.

FIGURE 16



SOURCES: WELLINGTON MANAGEMENT; HIGHLAND ASSOCIATES

HIGHLAND'S VIEW:

NFP healthcare investors are unlike traditional institutional investors. There are numerous threats that can make meeting their mission an exceptionally difficult task. Inflation, while silent in nature, represents a significant risk to the investment portfolio and the system as a whole. The damage can be far-reaching, even impacting a system's ability to access debt markets. With this in mind, Highland believes many NFP investors remain unprepared for the potential impacts of inflation, which for hospitals has consistently been higher than overall inflation. Looking beyond a traditional stock/bond portfolio and incorporating inflation-sensitive strategies better positions NFP healthcare investors to protect their portfolio and system from the threat of inflation.

HIGHLAND

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