

THE SEARCH FOR HIGHER RETURNS

Illustrating the Three Pillars of Cash Investment Strategies

EXECUTIVE SUMMARY:

Superior returns do not happen by chance all the time, so it is relevant to identify active strategies to help achieve them. We focus on the three broad investment strategies used by most fixed income managers: *duration management*, *sector rotation*, and *credit selection*.

Excess return potential from active *duration management* can be sizeable, between 2.47% and -1.51% annually over the past 10 years.

A hypothetical strategy of *sector rotation* returned annualized 2.80% and -1.65%, respectively, over Treasuries during the past 10 years.

Our hypothetical methodology of the best *credit selections* each month produced 0.65% higher annual returns than simply staying in A-rated corporate names. Conversely, bad bets on credit could have resulted in 0.64% annual return disadvantage over the safe AAA group over the past 10 years.

When presented with an investment with seemingly attractive return potential, it helps to ask how much duration, sector, or credit risk is involved.

Active duration strategies have the potential of producing the largest excess returns, although they may also have the highest volatility. Meanwhile, little return potential, both positive and negative, often comes from credit selection.

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INTRODUCTION

When it comes to investment strategies, cash assets often garner less attention than other asset classes. In the context of investing for safety, liquidity and yield objectives, the topic of active investment strategies is even less discussed and understood, by the treasury community. Nonetheless, when it's time to evaluate manager performance, returns often show up at the top of the agenda. Superior returns do not happen by chance all the time, so it is relevant to identify active strategies to help achieve them.

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In this paper, we will focus on the three broad investment strategies used by most fixed income managers in one form or another: *duration management*, *sector rotation*, and *credit selection*. As “there is no such thing as free lunch”, an investor's ability to deliver peer-beating returns usually comes as the result of taking measured risk in one of the three areas. Although more exotic strategies exist, cash managers tend not to use them as often given the safety, liquidity and yield objectives of cash investing.

We focus on the three broad investment strategies used by most fixed income managers: *duration management*, *sector rotation*, and *credit selection*.

In presenting each of the three “pillars” of investment strategies, we will use historical return data in the last 10 years to illustrate the impact of different strategy choices. Specifically, we will focus on three scenarios: a) the most conservative approach as a base scenario, b) the best outcome where 100% of the portfolio is shifted into the most profitable investment at the beginning of each month, and c) the worst outcome where an investor makes the worst decision consistently each month. As a matter of methodology, we will deal with one type of risk and remove factors that may involve the other two types of risk to achieve apples-to-apples results.

The objective of this hypothetical exercise is to demonstrate the double-edged nature of investment strategies. One can expect returns to improve by increasing certain measured risks, however, investment strategies may result in undesirable to disastrous consequences if not executed well.

DURATION MANAGEMENT – THE LONG AND THE SHORT

In fixed income parlance, duration measures the negative correlation of a bond or a portfolio of bonds with the change in the general levels of interest rates. For example, a bond with duration of two years would lose approximately 2% in total return if general interest rates were to rise by 1%. The duration of a plain vanilla short-duration portfolio is roughly the weighted average maturity of securities in it.

Duration management refers to the active buying and selling of securities to alter a portfolio's duration. A manager perceiving a falling interest rate environment would want to add duration by purchasing longer-maturity bonds. Conversely, as interest rates rise, the manager may reduce duration by staying in shorter-maturity bonds or even selling longer bonds. In a buy-and-hold portfolio, this strategy may mean buying longer securities to “lock in” higher yield as interest rates are falling, or staying short for better

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Excess return *potential* from active duration management can be sizeable, between 2.47% and -1.51% annually.

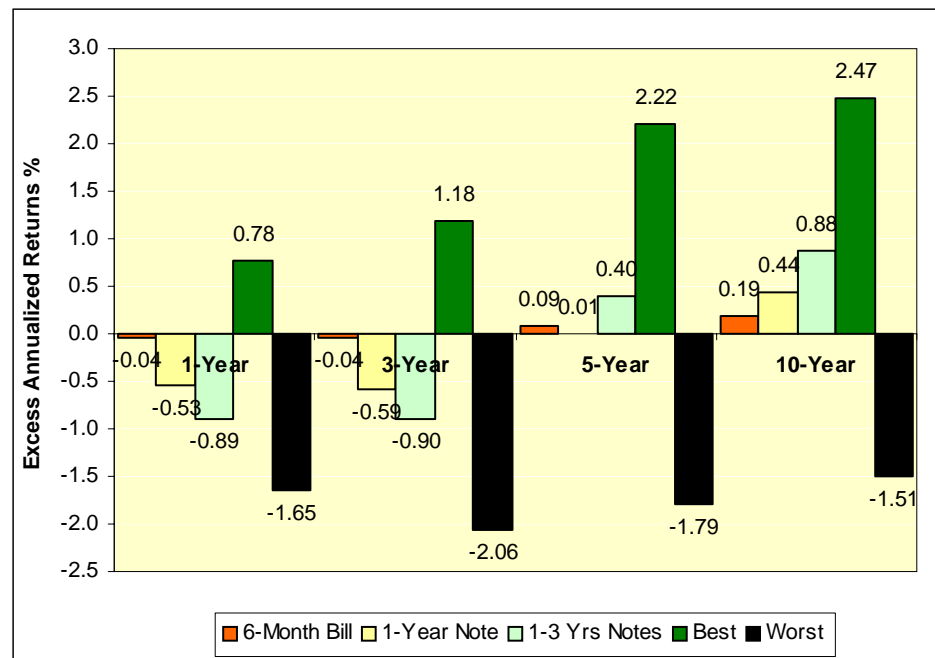
reinvestment opportunities when rates are rising.

Figure 1a shows the excess historical returns of the 6-month Treasury bill, the 1-year Treasury note, and the 1 to 3 year Treasury notes indices over the 3-month Treasury bill index. All four are popular cash indices from Merrill Lynch. The 3-month index does not appear in the graph as its returns are expressed as zero.

As the graph indicates, the strategy that mirrored the 3-month bill index yielded better returns than the other strategies for the last one and three years. This was due to the rising interest rate environment that started in June 2004. Over longer periods of time, however, five and ten years in our example, longer-duration strategies clearly became more favorable.

A more interesting way of looking at the different strategies is to assume that a manager was able to use an active strategy of switching each month into the best performing index based on having perfect information before hand. Figure 1a shows the result of this hypothetical strategy outperforming the baseline 3-month T-bill index by 2.47%, and the best static strategy (1-3 Yrs Notes) by 1.59%, on an annual basis. This exercise highlights the sizable excess return *potential* of superior duration management skills over the last years. Conversely, consistently bad portfolio duration choices would have created a hypothetical annual return deficit of as much as 2.06% compared to the 3-month index. To simplify these scenarios, this and other comparisons ignore trading costs which could be substantial.

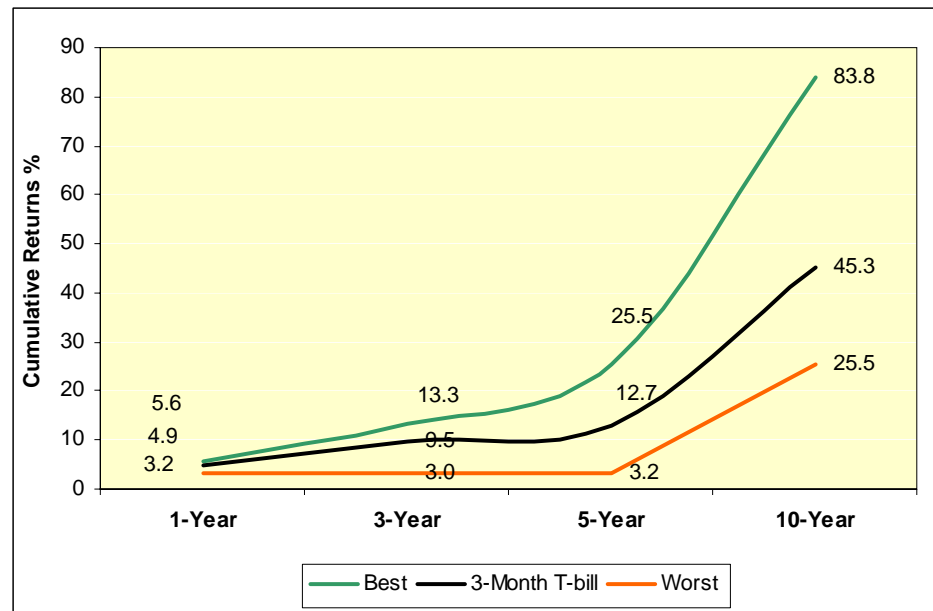
Figure 1a: Excess Annualized Returns over 3-Month T-Bill Index



Source: Bloomberg data from Merrill Lynch Global Indices: G001 (3-month U.S. Treasury Bill), G002 (6-month U.S. Treasury Bill), G003 (1-yr US Treasury Note Index), and G102 (U.S. Treasuries, 1-3 Yrs). Computation of Best/Worst strategies is made by chain-linking and annualizing monthly highest/lowest returns among the four groups.

Figure 1b shows the cumulative effect of the best and worst hypothetical duration management strategies, with the 3-month index as the base strategy. While the 3-month index returned 45.3% over a 10-year period, different duration management strategies could have caused a portfolio to return between 38.5% more or -19.8% less by switching among the four indices. This is an illustration of the duration “alpha”, or returns attributed to a manager’s duration management skills.

Figure 1b: Cumulative Returns Attributed to Duration Management



Source: Same as Figure 1a.

SECTOR ROTATION – THE HOT AND THE COLD

Sector rotation refers to the movement of securities out of less promising sectors to ones that may benefit from some macro investment trends.

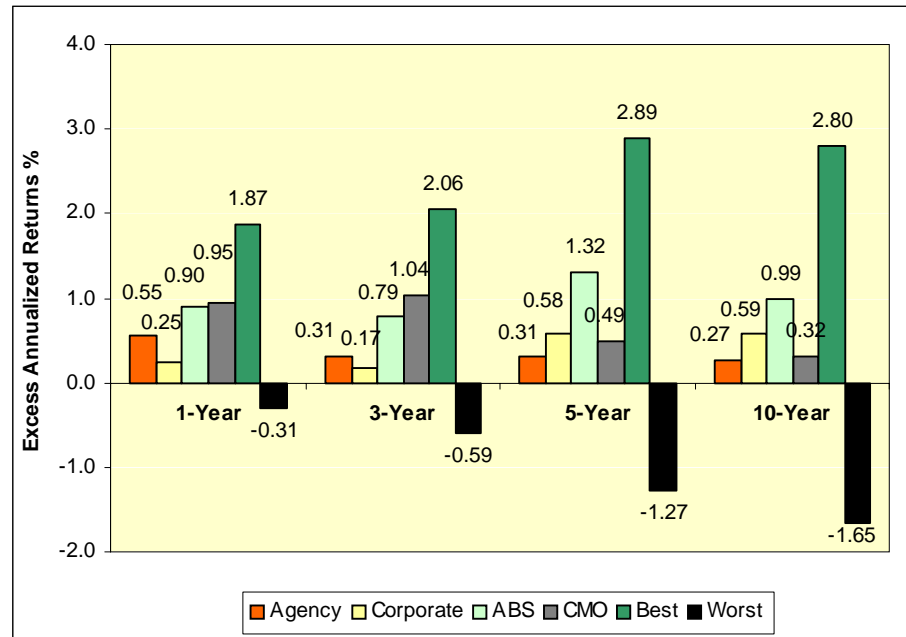
Sector rotation refers to the movement of securities out of less promising sectors to ones that may benefit from some macro investment trends. The most common sectors, or asset types, are Treasury, Agency, Corporate, Foreign (Sovereign and Corporate), Asset-backed, and Mortgagee-backed securities. In practice, the strategy is done through allocating securities in respective sectors to *overweight* or *underweight* positions relative to a market benchmark. This is why the strategy is also known as *sector allocation*. Buy-and-hold investors typically implement this strategy over time with maturity proceeds.

When the economy is in an expansion phase, non-Treasury securities are expected to outperform the Treasury sector. When investors’ general risk tolerance goes down or when a geopolitical event occurs, the Treasury sector often outperforms due to its “safe haven” status. Likewise, corporate vs. securitized debt, residential mortgage vs. consumer credit card debt, and U.S. vs. foreign (issuing in the U.S.) debt are some of the decisions to consider when implementing the sector rotation strategy.

In Figure 2a, we use four popular sectors among cash managers for our analysis: Agency, Corporate, Asset-backed Securities (ABS) backed by credit cards, and Collateralized Mortgage Obligations (CMOs) which are a form of structured mortgage bonds. All of the indices we use have AAA credit ratings and are similar in duration, so their return

differentials are assumed to be the result of their sector attributes. Returns are shown as excess returns over the Treasury index.

Figure 2a: Excess Annualized Returns over Treasury



Source: Bloomberg data from Merrill Lynch Global Indices: G1P0 (Unsubordinated U.S. Agencies, 1-3 Yrs), CY11 (U.S. Corporates and All Yankees, AAA Rated, 1-3 Yrs), R0C1 (Asset-Backed Securities, Credit Cards, Fixed Rate, AAA Rated), and CMO1 (0-3 Year Agency CMO Index). Computation of Best/Worst strategies is made by chain-linking and annualizing monthly highest/lowest returns among the four groups.

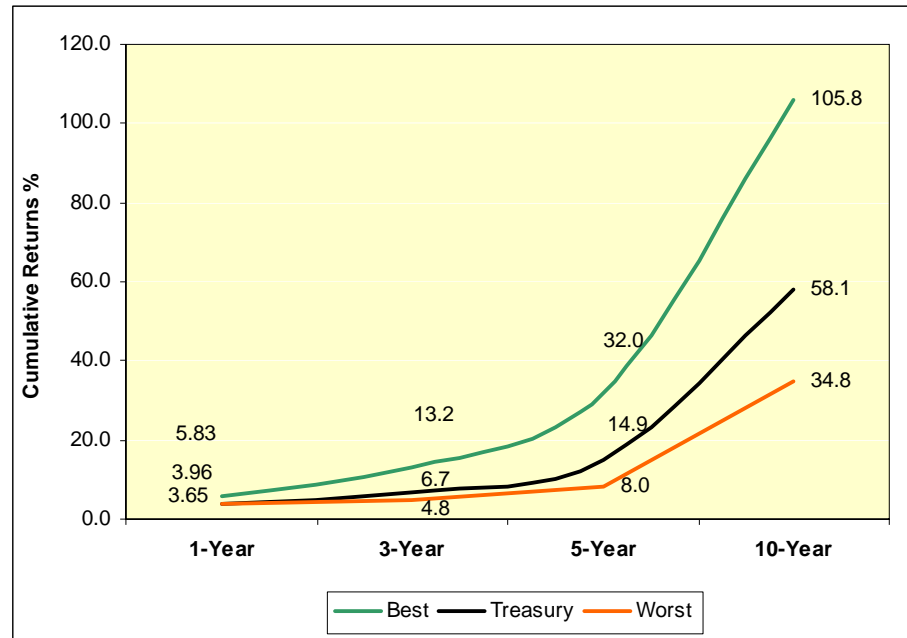
As Figure 2a indicates, all four sectors outperformed Treasuries for the last one, three, five and 10 years, suggesting that investors are well compensated for investing in non-Treasury securities. CMOs were the best one and three-year performers, but ABS proved to be the long-term winner, returning 0.99% a year over Treasuries in the last 10 years, followed by the corporate sector which outperformed Treasury securities by 0.59% a year.

Note that for each period, returns among the sectors varied significantly allowing opportunities to improve performance by rotating among the sectors. The hypothetical strategy of switching into the best performing index each month outperformed the baseline Treasury index by 2.80% a year, and by 1.81% over ABS, the best performing static sector, in the last 10 years. The graph also shows the results of consistently bad sector rotation choices: -1.65% annually below Treasury returns, and 2.64% annually below ABS returns.

Figure 2b shows the cumulative effect of the best and worst hypothetical sector rotation skills in the last 10 years, with the Treasury index as the base case. The variance between the best and the worst cases was 71%, while the Treasury index returned 58.1%. This shows that the sector rotation strategy could have yielded a positive alpha of as much as 47.7% or a negative alpha up to 23.3% during this period.

A hypothetical strategy of switching each month into the best and worst performing sectors returned annualized 2.80% and -1.65%, respectively, over Treasuries.

Figure 2b: Cumulative Returns Attributed to Sector Rotation



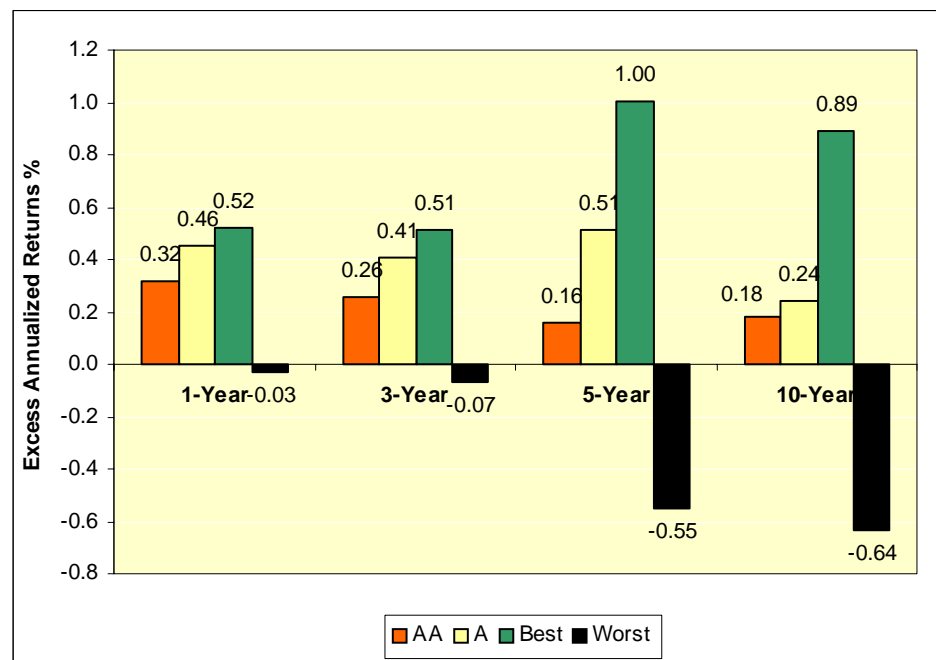
Source: Same as Figure 2a.

Credit selection refers to the shifting of investments from names of lower payment certainty to ones with higher certainty, or vice versa, as a manager’s view of the credit cycle changes.

CREDIT SELECTION – RATINGS MATTER

Compared to the other two strategies, credit strategy is perhaps better understood and more widely followed in the treasury community. At the fundamental level, credit refers to the certainty of receiving principal and coupon interest payments at promised dates. *Credit selection* refers to the shifting of investments from names of lower certainty to ones with higher certainty, or vice versa, as a manager’s view of the credit cycle changes.

Figure 3a: Excess Annualized Returns over AAA Ratings



Source: Bloomberg data from Merrill Lynch Global Indices: CY11 (U.S. Corporates and All Yankees, AAA Rated, 1-3 Yrs), CY21 (U.S. Corporates and All Yankees, AA Rated, 1-3 Yrs), and CY31 (U.S. Corporates and All Yankees, A Rated, 1-3 Yrs). Computation of Best/Worst strategies is made by chain-linking and annualizing monthly highest/lowest returns among the four groups.

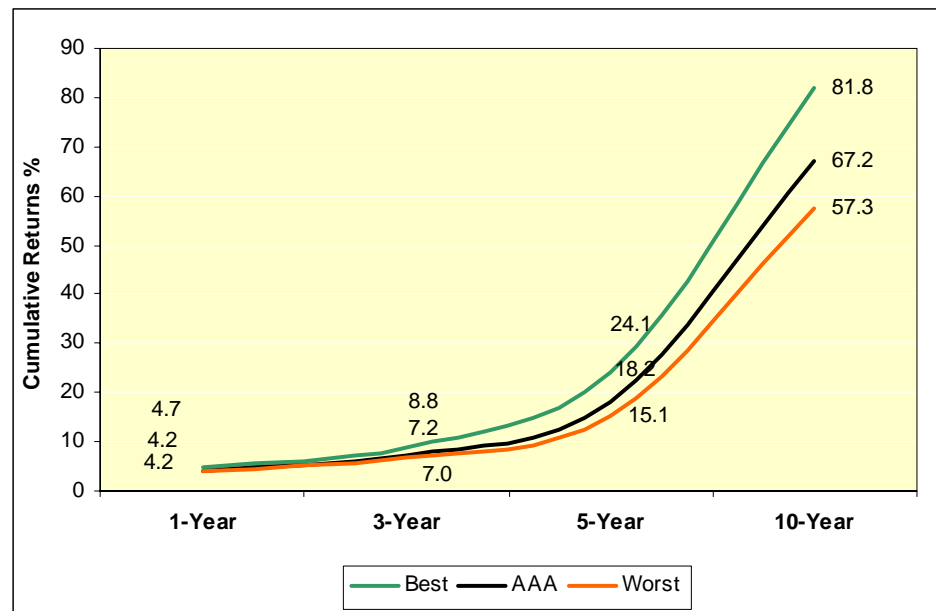
For reasons of simplicity, we use credit ratings in this paper as a barometer for credit risk, recognizing that the credit quality of bonds with the same credit ratings can vary considerably. As we compare returns from the Merrill Lynch 1-3 year AAA, AA, and A-rated corporate indices, we again isolate both duration and sector factors to infer return differentials attributed to credit ratings.

In Figure 2a, strategies mirroring both the AA and A-rated corporate indices would have outperformed the AAA strategy in the last one, three, five, and ten years. Note that this period includes one of the worst credit downturns in history, characterized by the demise of “fallen angles” such as Enron, WorldCom, and Tyco. Also note that the best performance of A-rated securities in all periods seems to suggest a strategy favoring this over the other rating categories which could render credit selection among rating levels ineffective.

Our hypothetical methodology of switching into the best rating category each month produced 0.65% higher annual returns than simply staying in A-rated corporate names. Conversely, bad bets on credit could have resulted in 0.64% annual return disadvantage over the safe AAA group.

However, our hypothetical methodology of switching into the best rating category at the beginning of each month produced still higher returns. The strategy would have returned 0.89% more than the AAA strategy and 0.65% than the A strategy annually for the last ten years. The comparison shows that substantial *potential* returns superior credit skills may theoretically deliver over the years. By the same token, the results of wrong bets can also be quite significant as indicated in Figure 3a.

Figure 3b: Cumulative Returns Attributed to Credit Selection



Source: Same as Figure 3a.

The cumulative return lines in Figure 3b convey a similar message in that there are considerable margins for out and under performance derived from the credit selection

strategy. The positive and negative alphas from our hypothetical credit decisions in the last 10 years would have been 14.6% and -9.9%, respectively.

CONCLUSION

The recent proliferation of innovative fixed income securities specifically designed for cash investors creates more opportunities for higher return potential, while at the same time also introduces new elements of risk for treasury professionals. Sometimes it seems difficult to tell whether good returns in a given period come from superior management skills, excessive risk taking, or just plain luck. We thought a crash course on common investment strategies would be beneficial for these investors.

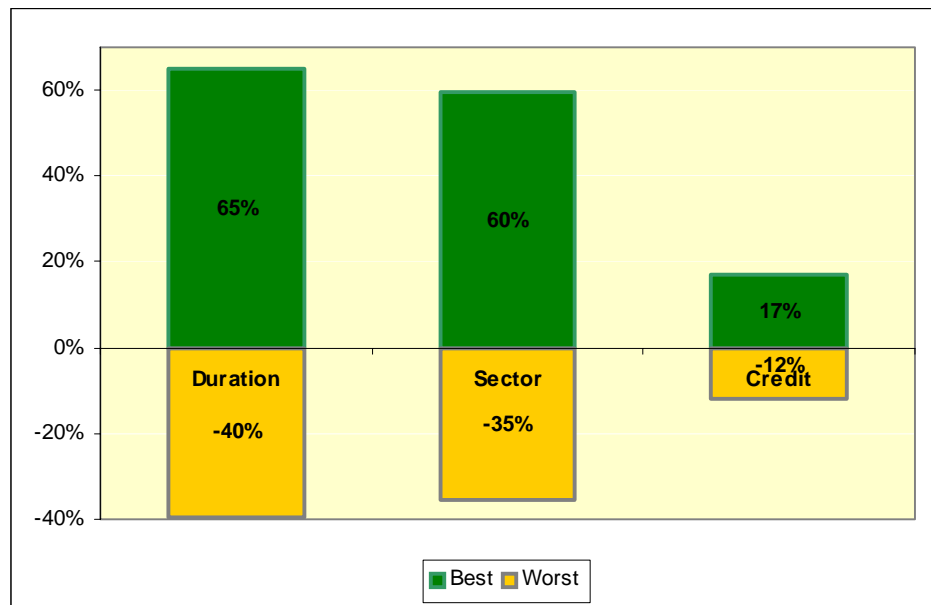
Illustrating with historical return statistics, we presented three broad portfolio strategies involving duration, sector and credit decisions. With this paper, we hope to have provided a framework for day-to-day investor strategy discussions to explore one or more ways to improve return potential. For example, when presented with an investment with seemingly attractive return potential, it helps to ask how much duration, sector, or credit risk is involved. We caution again that the hypothetical practice of switching into one security at the end of each month is meant only to illustrate an extreme scenario, frequent trading in a portfolio is both costly and inconsistent with cash investment practices.

When presented with an investment with seemingly attractive return potential, it helps to ask how much duration, sector, or credit risk is involved.

Active interest rate strategies have the potential of producing the largest excess returns, although with highest volatility.

Meanwhile, surprisingly little return potential, both positive and negative, is attributed to credit selection.

Figure 4: Annualized Return Volatility (1997-2006)



Calculation Method: Annualized returns of respective strategies: Duration Management – Base Strategy 3.80%, Best 6.27% (65% more than base), Worst 2.30% (40% less than base); Sector Rotation – Base 3.03%, Best 4.69% (60%), Worst 3.03% (-35%); and Credit Selection – Base 5.27%, Best 5.27% (17%), Worst 4.64% (-12%). All data taken from previous graphs based on Bloomberg data from Merrill Lynch Global Indices.

In closing, we leave readers with Figure 4, which depicts the volatility of annualized returns as over and under percentages of the base indices over the last 10 years. One may view this as the risk and reward trade-offs for each active investment strategy. Active interest rate strategies through duration management produced the largest return variance, a finding that is often observed in real life portfolios. The second largest source of over/under performance came from deliberate bets on market sectors. Surprisingly, credit was not as significant a return driver as other two factors.

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