

EVALUATING THE PERFORMANCE CHARACTERISTICS OF THE CBOE S&P 500 PUTWRITE INDEX

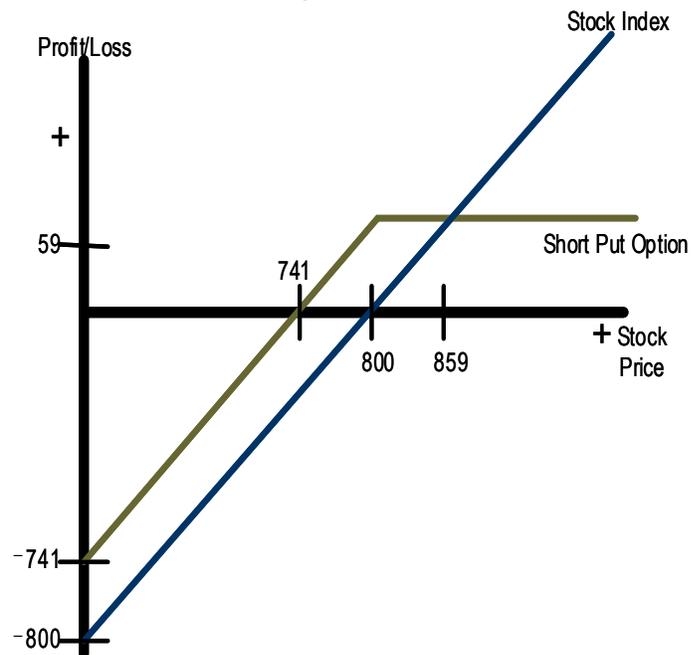
EXECUTIVE SUMMARY

The CBOE® S&P 500 PutWrite Index (ticker symbol PUTSM) systematically sells one-month, at-the-money put options on the S&P 500 Index collateralized by a portfolio of Treasury bills. Since its 1986 inception, the PUT Index has earned higher returns than the S&P 500 Index with lower volatility. Calculated by the Chicago Board Options Exchange, the PUT Index tends to outperform in quiet and falling markets, and underperform in months when stock prices rise sharply.

WHAT ARE INDEX PUT OPTIONS AND WHY DO INVESTORS SELL THEM?

Put options are frequently traded on investments worldwide, and the S&P 500 Index is one of the most liquid index options markets. The buyers of put options are, effectively, purchasing insurance on their portfolios, as the price of a put option increases as stock prices decline. As with many other types of insurance, the premium is in force for a stated period of time, and provides insurance for a specific type of event. Put options insure against the decline of a stock market index below the stated strike price. If the stock market does not fall during the life of the put option, the put seller keeps the entire premium. If the stock market declines below the strike price at expiration, the put seller pays the put buyer the difference between the stock index value and the strike price. Exhibit 1 illustrates the return to a put seller. When stock markets rise, the return is limited to the amount of premium income. When stock markets decline, the seller takes the downside risk of the equity market, but outperforms an investment in the stock market index by the amount of the premium earned from the sale of the put.

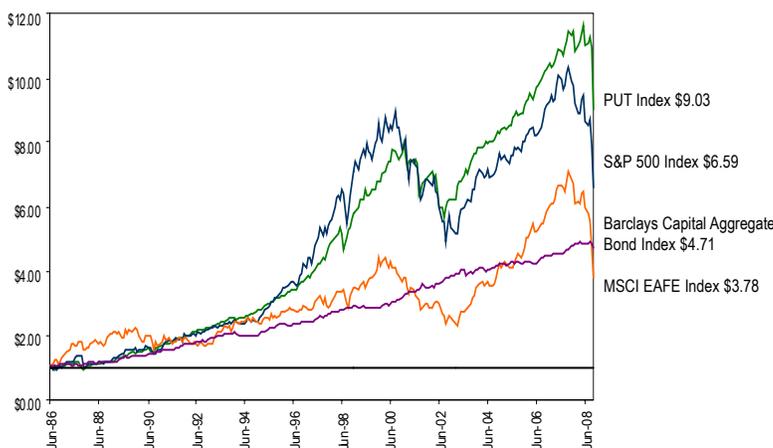
Exhibit 1: Profit-and-Loss Diagram



HOW IS THE CBOE S&P 500 PUTWRITE INDEX DESIGNED?

Exhibit 2

Cumulative Wealth, June 30, 1986 - October 31, 2008



Source: Bloomberg and CBOE

The CBOE S&P 500 PutWrite Index is designed to gain exposure to the U.S. equity market, while earning options premium that can offset losses during declining stock markets. The index is designed to be fully collateralized, where Treasury bills are held in an amount equal to the notional value of the strike price of all put options sold. The maximum profit for this strategy in any given month is equal to the sum of the put premium sold and the interest earned on the Treasury bills collateralizing the strategy. In months where the return on the S&P 500 exceeds the income generated by the strategy, the PUT Index is expected to underperform the S&P 500, but earn a positive income return. In exchange for accepting the downside risk inherent in any strategy with long equity exposure, an investor in this strategy will tend to outperform in all equity markets where prices fall, or rise less than the amount of income earned in that month.

HOW DOES THE PERFORMANCE OF THE PUT INDEX COMPARE TO THE S&P 500 INDEX?

Exhibit 2 shows the cumulative return to the CBOE S&P 500 PutWrite Index from June 30, 1986 until October 31, 2008. This time period covers both bull and bear markets, with a variety of extremely rapid stock market declines, such as those seen in October 1987, August 1998, September 2001, as well as the recent declines experienced in September and October 2008. The systematic sale of put options over the entire time period would have earned an annualized return of 10.32%, before fees, with an annualized standard deviation of returns of 9.91%. The risk and return of the PUT Index compare favorably to the S&P 500, which earned annualized returns of 8.77% with a volatility of 15.39% over the same time period. The CBOE S&P 500 PutWrite Index was announced in June 2007 and the track record of returns was generated using historical options prices, with the assumption that each put option was sold at the bid price.

Exhibit 3: Key Statistics
June 30, 1986 to October 31, 2008

	Average Annual Return	Standard Deviation	Skewness	Kurtosis	Sharpe Ratio	Sortino Ratio
CBOE S&P 500 PutWrite Index	10.32%	9.91%	-2.72	13.15	0.63	0.86
S&P 500 Index	8.77%	15.39%	-0.92	3.06	0.30	0.49
MSCI EAFE Index	6.11%	17.39%	-0.49	1.26	0.12	0.19
Barclays Capital Aggregate Bond Index	7.16%	4.05%	-0.27	0.39	0.76	1.67
3-Month Treasury Bills	4.09%	0.53%	-0.04	-0.50	N/A	N/A

Source: Bloomberg and CBOE

HOW IS THIS RISK REDUCTION POSSIBLE?

The PUT Index strategy underperforms during rapidly rising stock markets, while earning income to offset market losses during times of falling prices. Exhibits 4 and 5 compare the return distribution of the PUT Index to the S&P 500 stock market index.

Exhibit 4: Monthly Return Profile of the CBOE S&P 500 PutWrite Index Relative to S&P 500 Return State
June 30, 1986 to October 31, 2008

	% of Months	PUT Index Return	Monthly Standard Deviation	S&P 500 Index Return	Correlation
State 1: Large positive return	48.7%	2.11%	0.86%	4.14%	0.49
State 2: Relatively unchanged market	29.2%	1.67%	0.85%	-0.08%	0.52
State 3: Large negative return	22.1%	-2.93%	4.51%	-5.38%	0.98

Source: Bloomberg and CBOE

In State 1, the stock market rises quickly, earning an average monthly return of 4.14%. In these months, the return to the stock market exceeds the premium income received through the sale of put options, which caps the gains to the CBOE S&P 500 PutWrite Index at a level below the stock index return. Therefore, we expect the PUT Index to underperform in approximately half of all months, and even more frequently during bull markets.

In exchange for a reduced participation in bull markets, the investor in the PUT Index has outperformed the stock market during the other half of all months. In State 2, the return to the market is relatively unchanged, with the absolute value of the positive or negative stock market return smaller than the premium earned from the sales of put options.

For example, in a month where the PUT Index investor earns an option premium of 2%, the CBOE S&P 500 PutWrite Index return is positive and greater than the stock market return for all stock market scenarios between a gain of 2% and a loss of 2%. This is the preferred market state for the PUT Index investor, as the strategy is earning both positive returns and returns that exceed the profits of investing in the S&P 500 index. Unfortunately, we know that the stock market experiences sharp losses in over 20% of all months. In these months, we expect the CBOE S&P 500 PutWrite Index to experience losses, as the insurance payout to the buyers of the put options exceeds the premiums that the PUT Index investor was paid to insure those losses. Notice, though, that the performance of the PUT Index in this scenario exceeds the stock market return, as the premium income offsets a portion of the losses taken during the participation in the declining stock market.

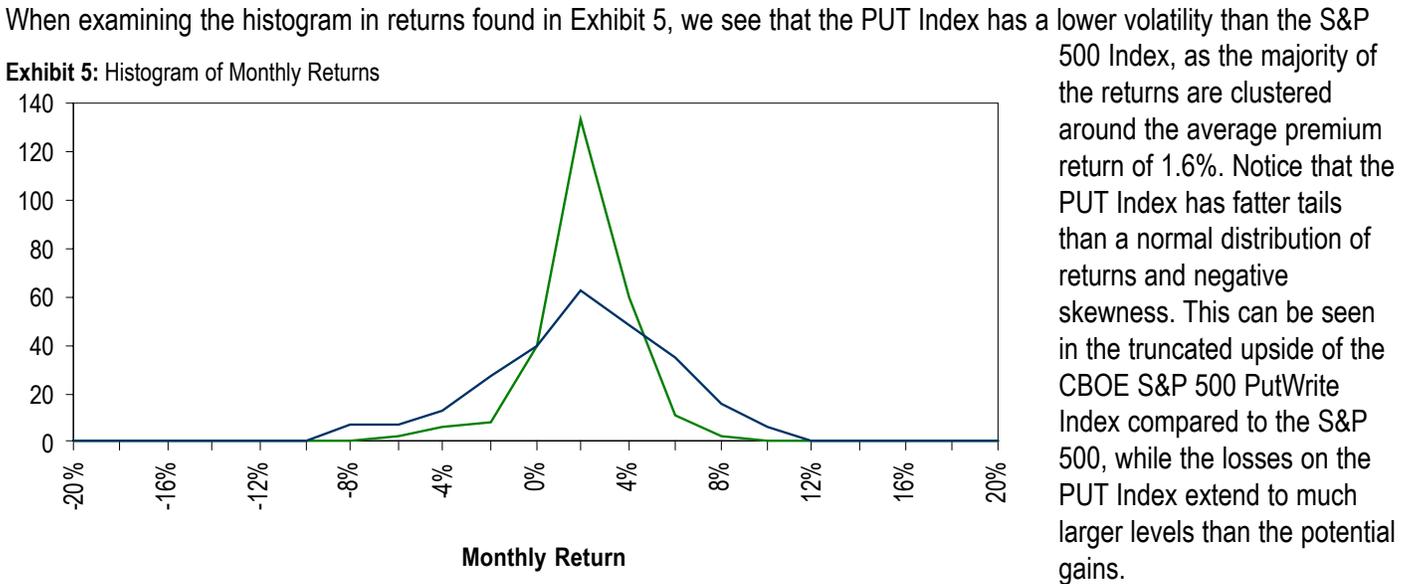


Exhibit 6 shows the historical return to the PUT Index sorted by the return to the S&P 500 PutWrite Index. Notice that the distribution of monthly returns looks like the hockey stick diagram found in Exhibit 1, where the returns are capped on the upside, while the PUT Index outperforms in all down market scenarios.

Exhibit 6: Average PUT Returns Sorted by S&P 500 Returns
July 1986-October 2008

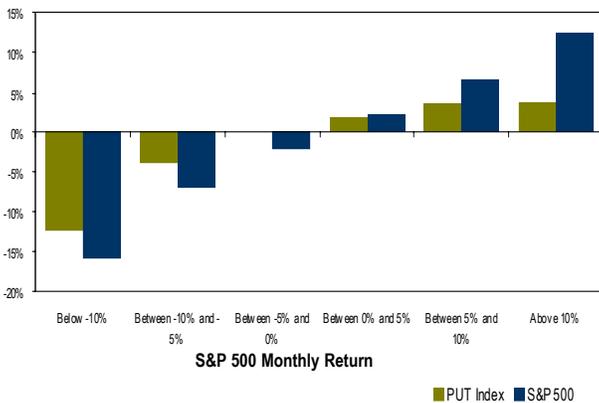
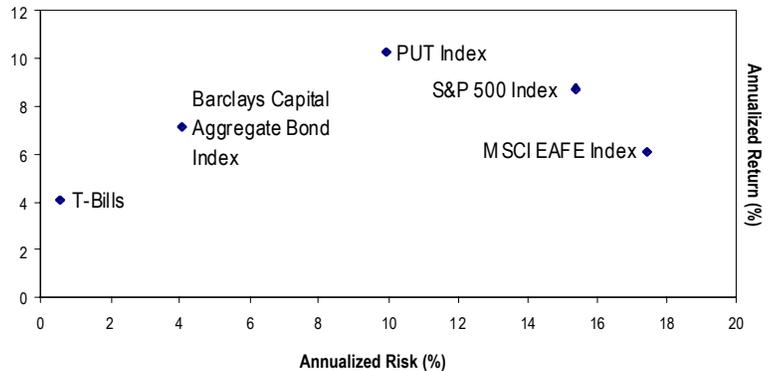


Exhibit 7: Risk-Return Tradeoff
July 1986-October 2008

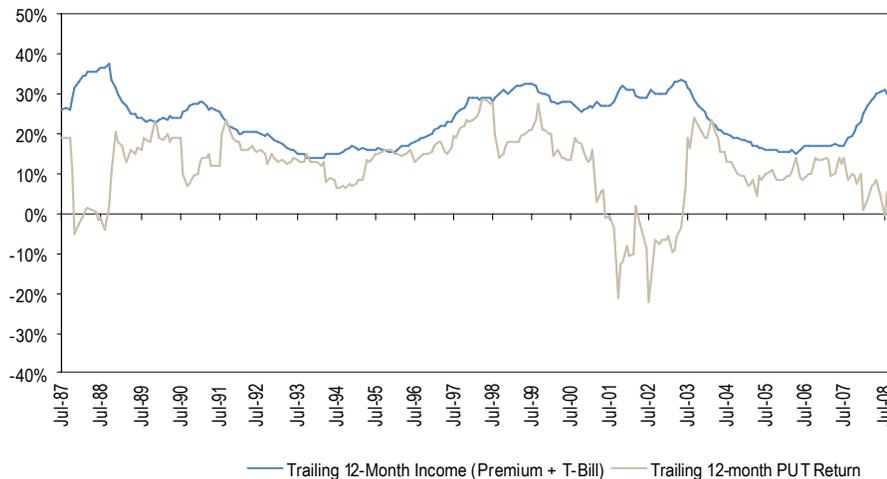


EARNING EXOTIC BETAS: DIVERSIFYING YOUR EQUITY EXPOSURE

There are three sources of return inherent in the PUT Index strategy. Two of the return streams are commonly earned by investors, namely the Treasury bill return and the downside returns to the S&P 500 stock market index. Given that these two market exposures are widely held and understood, we will group them in the category of traditional beta exposures. Exotic betas are less widely held and understood by investors, and are relatively uncorrelated to beta exposures from traditional markets. In addition to the traditional beta exposures, investors in the PUT Index strategy also earn returns from an exotic beta source: equity market volatility. To arrive at an average annual return of 10.3% for the CBOE S&P 500 PutWrite Index from July, 1986 to October, 2008, we estimate that the income from put sales is 19.8%, the income from Treasury bills is approximately 4.2%, which leaves a negative impact from stock market risk of around 13.7% per year.

Exhibit 8 shows the premiums earned for selling put options each month since July, 1986. On average, selling an at-the-money put each month earns a premium of 1.65% of the notional value of the index, which averages 19.8% per year. There is a substantial variation of the premium income that can be earned by this strategy. When markets become more volatile the demand for insurance increases, as many market participants are willing to pay higher option prices during times of market stress. The price of options is often denoted by implied volatility, or the volatility that traders using an options pricing model have assumed in their estimate of options prices. Implied volatility is measured by the CBOE Volatility Index® (VIX®). As you can see in Exhibit 9, the price of put options rises as VIX and expected market volatility increases. The correlation between VIX and the PUT Index is -0.54, which shows that the PUT Index is a short volatility strategy. The total return to the CBOE S&P 500 PutWrite Index is shown in brown. In times of a rising stock market, the strategy earns profits in an amount equal to the income return. When the stock market declines, the PUT Index returns are below the income return, as the income, and potentially a portion of principal, is used to pay the negative returns of the market.

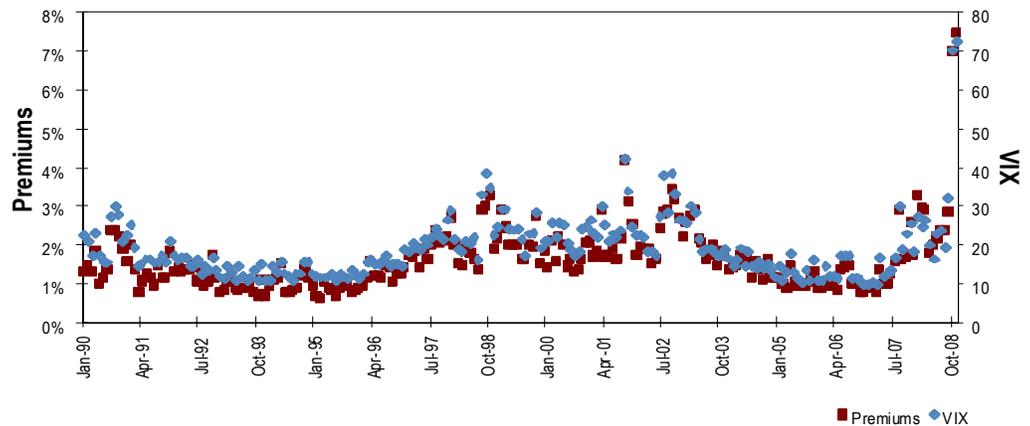
Exhibit 8: 12-Month Income Earned vs. PUT Index Return



Source: Bloomberg and CBOE

Also noted in Exhibit 4, the correlation of the PUT Index to the S&P 500 varies by the market environment. In sharp down markets, when the S&P 500 declines by an amount greater than the earned premium, the correlation is 0.98, meaning that PUT Index investors have downside risk similar to the owners of an S&P 500 index fund, except that this risk is cushioned by the premium received. When stock returns are positive to slightly lower, the correlation of the PUT Index is around 0.50, as the strategy

Exhibit 9: Monthly Put Gross Premiums vs. VIX Closing Prices



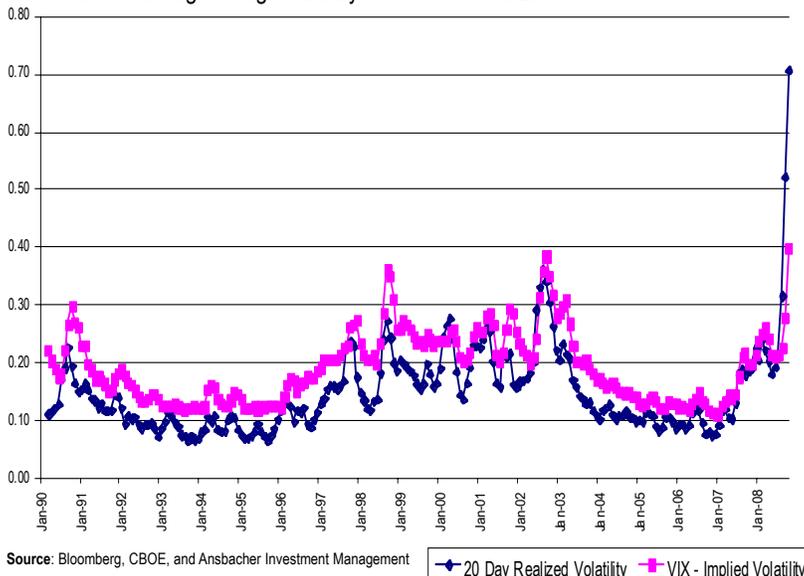
Source: Bloomberg and CBOE

returns are more sensitive to the premium earned than to the return of the underlying stock market index. As was shown in Exhibits 3 and 5, the returns to the PUT Index do not closely follow a normal distribution. The Index earns positive returns slowly and experiences losses more quickly. These characteristics are shown by the negative skewness and positive kurtosis of the PUT Index, -2.72 and 13.15, where returns are much less normally distributed than the S&P 500, which experienced skewness of -0.92 and kurtosis of 3.06 over the same time period. The average gain for the PUT Index is smaller than the average loss, as was demonstrated in Exhibit 6.

WHAT IS THE SOURCE OF THE EXCESS RETURN? ARE THE RETURNS SUSTAINABLE?

The source of the excess returns to this strategy comes from the tendency of index options to trade at prices above their fair value. As the demand for index options is high, and the natural number of options sellers is low, the buyers of options tend to pay a premium for the ability to insure against falling stock prices. In options lingo, the implied volatility tends to trade at a higher level than the realized volatility. From 1996 to 2007, Goldman Sachs estimates that at-the-money index options have averaged

Exhibit 10: S&P 500 Implied Volatility vs. Subsequent Realized Volatility
Three Month Moving Average January 1990 to October 2008



Source: Bloomberg, CBOE, and Ansbacher Investment Management

an implied volatility of 18.3%, while the subsequent realized volatility averaged only 16%. Sellers of index options, over long periods of time, earn this risk premium of the excess of implied volatility over realized volatility as compensation for selling volatility. Notice, in exhibit 10, that realized volatility rarely exceeds implied volatility over a three month period. We believe that investors in the CBOE S&P 500 PutWrite Index strategy will continue to earn the volatility risk premium, as buyers of index put options seem to be willing to pay for insurance, while sellers of index put options continue to demand a risk premium to provide this insurance coverage.

A key part of the strategy returns relies on the sale of short maturity options. The PUT Index strategy sells a one-month, at-the-money put option immediately upon the expiration of the prior month's put options, typically on the third Friday of each month. The time

decay of options accelerates as expiration approaches, with the time value of an option proportional to the square root of the portion of the year remaining until maturity. For example, a three-month option has half of the time premium of an option with four times the term, or one year, because the square root of one-quarter is one-half.

The consequence of this accelerated time decay is that the annual premium income earned increases as the average maturity of written options declines. For example, at the close of trading on November 21, 2008, with the S&P 500 index trading at 800.03, the December 800 puts were priced at \$59, while the March 800 puts were trading at \$97. Selling the one-month December put options earned income of 7.4% of the underlying index value, while the four-month March put options earned 12.7%. The income earned for selling two one-month options exceeds the income earned from selling a single four month option. The CBOE S&P 500 PutWrite Index strategy, then, would provide much less income on an annual basis if it were implemented by selling longer-dated options. Notice that the premium earned from the sale of the December 2008 put option is far above the average premium earned over the history of the PUT Index, as the current level of elevated volatility is making options much more expensive. When the VIX declines towards average levels, premium income will also decline.

IS SELLING PUT OPTIONS RISKY? COULD I LOSE ALL OF MY ASSETS?

It is true that many market participants view the sale of uncollateralized put options to be a very risky strategy. In order to gauge the potential losses in a strategy, we need to consider the leverage employed in a portfolio. Some sellers of put options do so on a leveraged basis, perhaps selling put options on \$400,000 of stock with only \$80,000 in capital. Since the sale of out-of-the-money options has a lower probability of losses, the losses are relatively infrequent, but typically very large. Note that the downside risk of the PUT Index, which fully collateralizes the sale of put options, is similar to that of an investor in an S&P 500 Index fund with the cushion of the premium received, as the strategy sells put options on approximately \$80,000 of stock for each \$80,000 in investor capital.

THE FIRST LICENSED PUT WRITE FUND

The first licensed fund designed to track the PUT Index was launched in April 2007. As highlighted in Exhibit 11, the

Exhibit 11

April 2007 to October 2008

	Annualized Return	Standard Deviation	Skewness	Kurtosis
PUT Index - Licensed Fund	-7.99%	14.30%	-2.57	7.76
CBOE S&P 500 PutWrite Index	-9.01%	16.42%	-2.86	9.41
S&P 500	-19.88%	18.88%	-1.27	1.93
Barclays Capital Aggregate Bond Index	2.22%	3.56%	-0.69	0.82

Source: Bloomberg, CBOE, and Ansbacher Investment Management

licensed fund and the PUT Index had a very similar risk-return tradeoff, experiencing a correlation of 0.99 since inception. For all months between April 2007 and September 2008, the maximum monthly tracking error was 0.33%. The licensed fund outperformed the index by a total of 0.20% during this same time period. During the volatile markets of October 2008, the licensed fund outperformed the index by 2.79%, raising the tracking error of the licensed fund.

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