



Performance Estimate of Term Structure Strategy of Commodities in Chinese Futures Market over the Recent Decade

Xinyan Xie¹(✉), Shuyang Xiong², Zetian Lyu³, Jiayan Zhang⁴, Yifeng Song⁵,
and Weiyi Dai⁶

¹ School of LSA, University of Michigan, Ann Arbor, MI 48104, USA
xxinyan@umich.edu

² Business School, Macquarie University, Sydney 2109, Australia

³ School of Mathematics and Statistics, University of Melbourne, Parkville, VIC 3010, Australia

⁴ School of Physics, Xi'an Jiaotong University, Xi'an 710049, China

⁵ School of Arts and Science, Brandeis University, Waltham, MA 02451, USA

⁶ School of Computer Science, University of Toronto, Toronto, ON M5S 1A1, Canada

Abstract. Over the past few decades, the futures market has become more and more robust and welcomed more investors. This paper makes a back test to explore the feasibility and evaluate the performance of the term structure strategy of commodities in the Chinese Futures Market. In the context of the real futures market from 2010–2020, the strategy is simulated by longing the highest-20%-roll-return commodities and shorting the lowest-20%-roll-return commodities among the total 40 commodities with relatively high liquidity. It is witnessed that the expected return on average is 60.75% and the Sharpe ratio is about 0.7–0.9. Based on the predicted model, this strategy is recommended and expected to have a promising result. However, it requires investors to have a higher-risk preference and is dependent on the model flexibility and information efficiency.

Keywords: Commodity futures · Term structure · Backwardation · Roll return · Volatility · Weighting

1 Introduction

1.1 Idea

Investors trade commodities' future contracts with different expirations dates based on the relative prices between different expirations of futures contracts, since the black-box period before expiration would bring uncertainties to markets, especially for diverse contracts with different intrinsic properties. And the strategy source is from Eric pool.

1.2 Highlight

Strategy Overview. Term structure refers to the idea of trading based on the relative prices between different expirations of futures contracts for a given market. Traders benefit by speculating the shape of commodity futures graphs (x-axis as settlement days for

different contracts, y-axis as prices), which can be classified as backwardation (the current spot price is higher than distant-maturity contracts) and contango (the current spot price is lower than distant-maturity contracts). As time passes by, the price of distant-maturity contracts will converge to the current spot price [1]. As shown in Fig. 1, for backwardation, the prices of distance-to-maturity contracts will increase. For contango, distant-to-maturity contracts' prices will decrease over time. The spread is an indicator for investors to determine the specific distant-to-maturity contract to use by finding the largest slope between the fixed nearest-to-maturity contract and distant-to-maturity contract [2]. By calculating the roll return and listing them in order, investors can long/short a group of distant-to-maturity contracts to benefit from them.

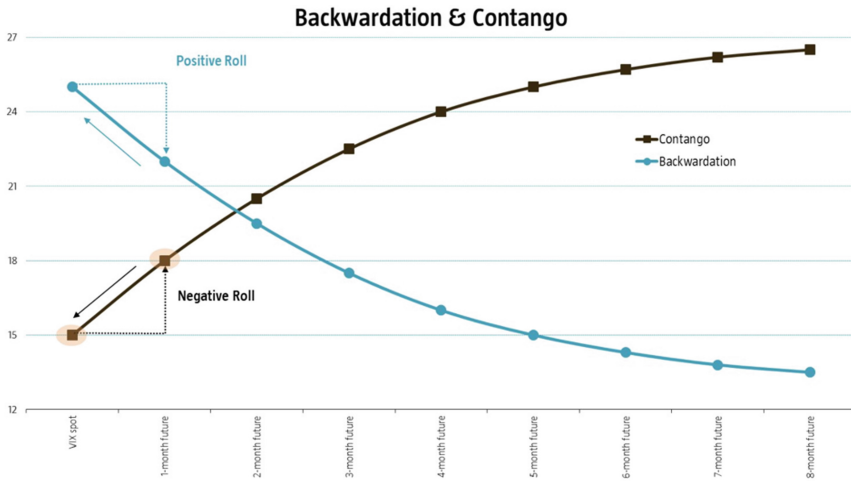


Fig. 1. Backwardation & Contango [3]

Economic Intuition. The fundamental idea behind strategy is that the price of commodity futures depends on the net position of the hedgers. It usually comes in two forms – backwardation (increase in the future’s price as maturity approaches) and contango (decrease in the future’s price as maturity approaches). Because traders anticipate the prices of distant-maturity contracts to converge to a value that is closer to the current spot price, they can profit from the spread, which is executable [1, 2].

Signal Generation. Annualized roll return is used to be the signal, indicating how profitable the futures are predicted to be through the action of buying or selling distant-to-maturity contracts, in other words, the rollover trade. The larger the annualized roll return is, the higher the expected benefit from that specific type of commodity.

Portfolio Construction. Among the total 40 commodities with relatively high liquidity traded at Shanghai, Dalian, Zhengzhou Futures Exchange, the top 20% ($40 \times 0.2 = 8$), which are most-back warded-commodities with the highest roll return are purchased(long) and short the bottom 20% ($40 \times 0.2 = 8$) most-contangoed-commodities

with the lowest roll return [2]. In terms of sizing, simple weighting method is used to give each commodity the same weight, rebalancing such a portfolio daily.

Performance Estimation. According to the past cases of commodities' term structure strategy, the return is expected to be about 11.97% (average annualized return from 2011 to 2018), far above the Benchmark Equivalent Comprehensive Commodity Index (-2.49%, average annualized return from 2011 to 2018). Thus, the strategy is expected to outperform the benchmark, possessing an annualized return of about 15% higher than that of the benchmark. Besides, the Sharpe ratio should be above 1, meaning that the extra return brought by risk offsets the risk itself, being worth taking risks for more returns.

2 Specification

2.1 Qualitative Analysis

The product prices in the futures market are volatile. This is mainly due to hedgers' varying long-short positions at different times – if the supply by short hedgers exceeds the demand by long hedgers, the contract's current trading price will be lower than its spot price at maturity, named as a backwardation. Inversely, when the hedger's demand exceeds supply, a contango occurs with trading price lower than spot price [2]. Besides, the market scenario could also be influenced by storage costs and interest rates.

Speculators utilize this opportunity by implementing the term-structure strategy whilst compensating for the unbalance. They primarily profit from the price difference between near-to-maturity and distant-to-maturity contracts, which would eventually converge overtime. In other words, the price of backward contracts are expected to increase towards the spot price overtime, and the inverse expectation of decreasing prices held for contangos [2].

This paper implements the strategy with longing the most back-ward contracts and shorting the most contangoed contracts, thus partially hedging the market risk. Therefore, in case of a pervasive market shock, the portfolio is only expected to suffer from the long contracts whilst still benefiting with those being shorted. Hence, the principle of maximizing returns with hedging risks is being followed.

2.2 Quantitative Analysis

Below are the statistics implemented to analyze the strategy's performance:

Annualized Rate of Return

$$\text{Annualized Rate of Return} = (V_p/V_0)^{(1/n)} - 1 \quad (1)$$

where: V_p : Final Value of the portfolio

V_0 : Initial Value of the portfolio

n : number of Year

The annualized rate of return is a simple index reflecting the performance of the strategy.

Annualized Volatility

$$\text{Annualized Volatility} = \sqrt{\text{trading days}} \times \sqrt{\text{variance}} = \sigma\sqrt{252} \quad (2)$$

The annualized volatility measures the risk of the portfolio. Commonly, smaller volatilities are desired.

Sharpe Ratio

$$\text{Sharpe Ratio} = (R_p - R_f)/\sigma_p \quad (3)$$

where: σ_p : std.dev of portfolio

R_p : Return of Portfolio

R_f : Return of Risk – free Asset (China 10 – year Treasury Bond)

The Sharpe ratio reflects the excess return relative to the risk-free asset per unit risk. Larger Sharpe ratios are desired.

Maximum Drawdown Rate

$$\text{MDD}(T) = (P - L)/P \quad (4)$$

where: P : Peak High (peak value before largest drop)

L : Trough Low (lowest value before new high established)

The Maximum drawdown rate indicates the largest potential risk. It is used to judge whether the strategy is acceptable or not based on individual risk preference.

Information Ratio (IR)

$$\text{Information Ratio} = (R_p - R_b)/\text{Tracking Error} \quad (5)$$

where: R_p : Portfolio Return

R_b : Benchmark Return

$$\text{Tracking Error} = \sqrt{\text{Var}(R_p - R_b)} \quad (6)$$

The Information ratio gives a detailed evaluation relative to a relatively standardized benchmark- the Zhonghan Commodity Futures Equally Weighted Trading Index is used as the benchmark in this paper.

2.3 Data

Universe. The universe consists of 40 commodities accessible from Shanghai, Dalian, Zhengzhou futures exchange. However, the total number of commodities' futures can be different every year since some commodities' futures have not been issued until recently, especially for categories of metals or chemical solutions. For example, nonethylene glycol (MEG) issued in 2018, LPG issued in 2015 and polished round-grained rice issued in 2015. In total, each commodity will have 5 to 23 different-expiration contracts as roll dates differ by categories like agricultural, energy and metals. Thus, there will be a total of 200 to 860 contracts.

Table 1 shows the detailed list.

Table 1. Commodity varieties and alternatives [4]

Commodity variety	Alternative varieties
All commodities	iron ore, coke, coking coal, linear low density polyethylene (LLDPE), polyvinyl chloride (PVC), No.1 soybean, No.2 soybean, soybean meal, soybean oil, palm oil, corn, corn starch, copper, aluminum, zinc, lead, nickel, tin, gold, silver, teal rebar, steel wire rod, hot rolled coil, crude oil, fuel oil, bitumen, natural rubber, and paper pulp, PTA, rapeseed meal, cotton, cotton yarn, white sugar, methanol, common wheat, strong gluten wheat, rapeseed, rapeseed oil, thermal coal
Agriculture	iron ore, coke, coking coal, linear low-density polyethylene (LLDPE), polyvinyl chloride (PVC), No.1 soybean, No.2 soybean, soybean meal, soybean oil, palm oil, corn, and corn starch
Metal	copper, aluminum, zinc, lead, nickel, tin, gold, silver
Black building materials	teel rebar, steel wire rod, hot rolled coil, crude oil, fuel oil, bitumen, natural rubber, and paper pulp
Energy and chemical	PTA, rapeseed meal, cotton, cotton yarn, white sugar, methanol, common wheat, strong gluten wheat, rapeseed, rapeseed oil, and thermal coal

Data Set. Since daily rebalance is targeted, the commodity futures contracts' daily prices are obtained. The data is divided into three categories: agricultural products, industrial products, and energy. Including all these three kinds of commodities makes the portfolio more diversified hence improved hedging. Finally, for every commodity, the cross-section slope between the nearest-to-maturity and distant-to-maturity are compared, and the most backward and contangoed contracts are selected.

Sources. The primary sources of data are East Money Information website and Shanghai, Zhengzhou, Dalian Futures Exchange websites. Wind has also been used as the supplement source for bid-ask spread data.

Time Series. Data has been collected from 2011–2018 (8 years) as in-sample data and 2019–2020 (2 years) as out-of-sample data. There will be 80% data for in-sample built up to guarantee the relative accuracy of optimization. The rest 20% data are out-of-sample for the sake of evaluating profitability.

Signal Generation. Annualized Roll Return

$$R_t = [\ln(P_{t,n}) - \ln(P_{t,d})] \times 365 / (N_{t,d} - N_{t,n}) \tag{7}$$

where: $P_{t,n}$: the price of the nearest-to-maturity contract at time t

$P_{t,d}$: the price of the distant-to-maturity contract at time t .

$N_{t,n}$: the number of days between time t and the maturity of the nearby contract.

$N_{t,d}$: the number of days between time t and the maturity of the distant contract.

In the futures market, there is a price difference between nearest-to-maturity and distant-to-maturity contracts. As explained, investors expect the distant-to-maturity contracts’ price to converge to the current spot price which is either higher or lower. Thus, the roll returns are generated as the signal.

Portfolio Construction. [Choose Commodities, and Set Weightings] The prices of the nearest-to-maturity and distant-to-maturity contracts used to calculate the annualized roll return. The top 20% ($59 * 0.2 \approx 6$) and the bottom 20% ($59 * 0.2 \approx 6$) commodities have been selected into the portfolio based on the roll-returns. Simple weighting is implemented by splitting our available funds into half, allocated for the top 20% and the bottom 20% of contracts. Then the money will be distributed evenly across each commodity. In this way, it’s easier for us to observe the performance of each commodity. Due to the similar liquidity of the top 20% and bottom 20%, the price volatility/ room for making profits is expected to be similar. Therefore, distributing capital evenly is reasonable.

Trade Execution. Transaction Costs.

Bid-Ask Spread: In China’s future market, there is a difference between ask price and bid price for commodities. All of the bids and ask prices on August 25 are listed and an average value of the spread for each commodity. Because three commodity categories are identified – agricultural, energy and metal, as shown in Table 2, where the average bid-ask spread for each category are found. In this way, bid-ask spread estimation would be more precise for the fact that the same category has a similar bid-ask spread.

Table 2. Average bid-ask spread of varieties

Category	Metal	Agriculture	Energy
Avg. bid-ask spread	12.49 bps	10.78 bps	9.89 bps

(Calculated by categories and inclined to the spread of distant-to-maturity contracts that mainly traded.)

Commission: China’s brokerage companies also have the number of transactions by the number of commissions. Some futures have 0.5bps to 10bps of the contract price as their commission fee and others have 0.2 to 5 yuan per one hundred shares. In the real execution part, it is assumed that the commission fee for every commodity’s future is 0.03%, almost the median of usual commission fee.

[*Trade poundage is the way that our country’s existing Commodity Exchange collects poundage is to press clinch a deal commonly hand number computation, poundage of each hand capture is different because of breed and difference.]

Settlement Fee

Seller: warehousing fee, inspection fee, spot storage fee, futures storage fee, delivery commission.

Buyer: delivery fee, futures storage fee, spot storage fee, delivery fee.

3 Implementation

3.1 P&L Graph Cumulative Simple Return: (In-Sample)

(For Cumulative Return from 2011/2/9 to 2018/12/31 In-Sample data).

The cumulative P&L diagram and the summary statistics of the in-sample-data (2010–2018) see Fig. 2. The notion on each trading day is set to be 1,000,000 yuan. The overall shape of the diagram is rising upwards very well, indicating a very good return apart from a drawdown at the end of 2018 due to increasing international tensions and trading barriers. There is a significant period of negative returns at the start of 2011, which is consistent with the reality that the market enthusiasm fades and transaction volume drops considerably. But then it started to progress consistently with a visible peak in cumulative return at the beginning of 2018.

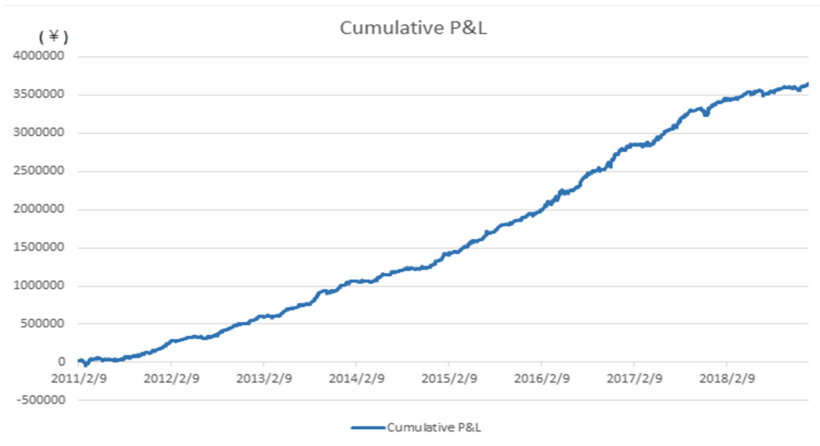


Fig. 2. P&L for IS

3.2 Statistics: (In-Sample)

Table 3. Summary statistics for IS

IS	2011	2012	2013	2014	2015	2016	2017	2018
Yearly return (%)	18.99%	35.23%	48.57%	30.37%	61.83%	84.12%	58.73%	24.79%
Yearly volatility (%)	9.82%	7.07%	8.35%	10.95%	10.19%	18.76%	16.78%	10.56%
Maximum drawdown (%)	3.75%	2.45%	2.70%	4.26%	4.12%	6.09%	5.96%	2.91%
Annualized return (%)	21.15%							
Annualized volatility (%)	12.21%							
IR	1.33							
Sharpe ratio	1.49							

3.3 Analysis: (In-Sample)

The Table 3 above presents the summary statistics relevant to the in-sample-data. Evidently, the strategy's return has been very optimistic, with no yearly returns below 15% and a median of 41.9%. Hence it is a very profitable portfolio. The yearly volatility has been controlled within the range of 7% to 19%, which is relatively large and indicates the portfolio could be slightly fragile. Based on the statistics, there is a trend that the yearly return peaked during 2015–2017, alongside an increase in volatility. This is expected because of the consistently fast-growing economy alongside these years, accompanied with a small cost of increasing uncertainty. The point is also reinforced by the comparably larger maximum-drawdowns in 2015 to 2017.

Overall, the in-sample-data justifies that the portfolio based on a simple terms structure strategy has been profitable, with the annualized return of 21.15%, a very good IR of 1.33 and a satisfactory Sharpe ratio of 1.49. This does come with a certain risk (with annualized volatility of 12.56%), indicating the strategy which has potential to be improved.

3.4 Differences from Expectation

The expected annual revenue is more than 30%. This has been mostly achieved – apart from 2011 and 2018 in which drawdowns have occurred. The volatility is slightly above 10%, which is relatively high considering the IS data. However, as the information ratio is greater than 1 and the Sharpe ratio is also greater than 1, which are some positive aspects of the strategy. Overall, the strategy’s return is reasonably good with an excellent Sharpe ratio, and a relatively larger average volatility compared to the initial expectations.

4 Validation Test

4.1 P&L Graph: (Out-of-Sample)

(For Cumulative Return from 2019/1/1 to 2020/12/31 Out-of-Sample Data).

The P&L diagram of the out-of-sample data (2019–2020) see in Fig. 3. Overall, the strategy still earn a very satisfying return by the end of the two years, however, there is a far greater degree of fluctuations evident compared to the in-sample results. The 2019 financial year has been challenging, accompanied with falling returns in the first half year, with more fluctuations in the second half. This is most likely a result of increasing global tensions, continuing from 2018. Then at the February of 2020, the portfolio’s return suddenly peaked by almost 800000 yuan, which corresponds to the beginning of the pandemic in China, where the whole financial market started to become profitable with an increasing degree of uncertainty. The peak is followed by a sharp decrease in April, where the return then started to increase at a considerable rate.

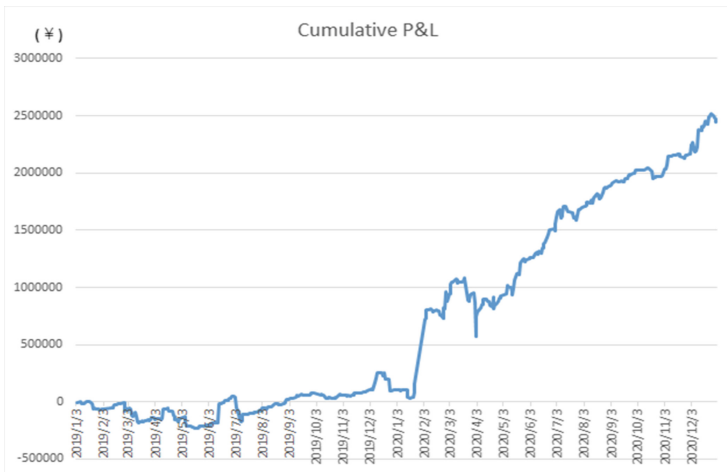


Fig. 3. P&L for OOS

4.2 Statistics: (Out-of-Sample)

Table 4. Summary statistics for OS

OOS	2019	2020
Yearly return (%)	10.27%	234.58%
Yearly volatility (%)	33.55%	85.93%
Maximum drawdown rate (%)	21.42%	19.43%
Annualized return (%)	85.70%	
Annualized volatility (%)	65.75%	
IR	1.09	
Sharpe ratio	1.26	

4.3 Analysis: (Out-of-Sample)

The Table 4 above presents the summary statistics relevant to the out-of-sample-data. As shown in the table, the yearly return rate in 2019 is 10.27%, and it is 234.58% in 2020. Evidently, the yearly return rate has created both the lowest point and the new high point of return. The yearly volatility in 2020 is even as high as 85.93%, and the maximum drawdown rate rises to about 20%, indicating that the out-of-sample data still shows high risks. However, the information ratio and Sharpe ratio are 1.09 and 1.26 respectively, though the risk is high, the yield has increased by 5 times.

Indeed, it seems unbelievable that the return of 2020 will be 234.58%. However, after searching the macroeconomic environment in that year, everything turns out to be reasonable. Here is a dataset collected from East Money Information to help to explain.

Evidently, even for individual commodities, the change in price can reach up to 3557.35%, followed by large numbers like 155.9%, 135.04%, etc. (see Table 5). Imagining how high the level is, having an yearly return as 234.58% for a whole portfolio is not weird and possible. In the past year when the overall market volatility was very strong, a high yield can still be maintained, indicating the stability of the return of this strategy, even in the turbulent market period can have an excellent performance.

4.4 Return

The overall return for the 2019–2020 period is decent. In 2019, the cumulative profit maintained a level of no-huge loss for the entire year. However, the return took off starting Jan 2020 and achieved 234.58% for the annual return. The covid-19 has helped with the drastic price changes of the commodity market. As investing confidence is reduced in the stock market, more investors would search for other areas of investment for diversification of portfolios, futures investment could be one of the choices to go into. With the foreign investment as well, since the interest rate decreases, in other countries

Table 5. Relevant contract's return in 2019 and 2020 [5]

Contract	2020	2019	Largest change in price
Fibre board	1505	41.15	3557.35%
Slab rubber	328.45	128.35	155.90%
Iron mine	1147	488	135.04%
Canola	6480	3204	102.25%
Silver	6877	33468	98.30%
Gold	454.08	277.8	63.46%
Glass	2037	1265	61.03%
Nickel	134180	86080	55.88%
Corn	2747	1780	54.33%
Hot rolling	4939	3254	51.78%
Starch	3110	2163	43.78%
Thread	4603	3244	41.89%
Wire rod	4799	3492	37.43%
Aluminum	16925	13230	27.93%

might lead foreign investors to search more ways of investment as the risk-free return rate has dropped to close to zero percent.

4.5 Risk

With respect to the average volatility to nearly 60%, our Sharpe ratio for 2019–2020 is 0.74, which is relatively mediocre due to high return and high risk. The long-short portfolio naturally hedges part of market risk. Facing a systematic (homogeneous direction) market risk, the portfolio will have at least one direction of position to earn profits while the other partially lose money. Liquidity risk is another issue for us to pay attention to. The contracts we trade on are those distant-to-maturity ones, so they usually have low liquidity that may cost a higher bid-ask spread for us to compensate. However, even if it is the case, our result still shows a strong profit worthwhile for us to take the liquidity risk. In a big picture, the economy has been in a long-term structure reform, and covid 19 has played a role of catalyst within and speeds up the changes. To better hedge the risk, we could apply more economic intuition and qualitative analysis on commodity selections, which we could be doing more research on the market trends and execute our choices. Therefore, we could greatly reduce the risks by selecting commodities which are more promising. The risk is mainly unavoidable market risk based on the fact that we are facing much more market volatility than before. When coming to the correlated risks, it is not guaranteed that the prices of commodities will always fluctuate in the same directions. To deal with such a correlated risk, we could group commodities by genres (agriculture, metal, mineral resources) for the fact that its price has a higher possibility to move along the same direction to hedge risks.

4.6 Operation

The data required for this strategy is transparent, publishing publicly on each Futures Exchange Website. Nevertheless, the accurate more-frequent data like by seconds or minutes and data like bid-ask spread of the past are harder to find. Accessibility is guaranteed while precision is not perfect. Also, there are basically two kinds of data which could be utilized: the raw data with more details and continuous data with more simplicity. Processing data is a little bit complicated as you need to deal with the rolling problem and consider trivial details about each contract (with both commodity-categories and expiration dates). What's more, since the portfolio is rebalanced daily, which is a high frequency, operational risk is also possibly high, but could be purposely lower. One could reduce the frequency of rebalancing to decrease the transaction cost as bid-ask spread to be the main component of the transaction cost of this strategy.

Implementing qualitative analysis to assist in the commodity selection process would reduce volatility. It requires daily rebalances and adequate data sources to support the whole operation process, which requires a great amount of effort to track the fluctuations of the prices and make changes to the portfolio according to them.

4.7 Future

Term Structure Strategy is the one commonly used by investors. Thus, the crowdedness of it is high, also accredited to a low sophistication. However, the methods to gain profit (profiting from convergence of price or profiting from price difference between distant and near contracts), methods of weighting, accuracy of signals could also make this strategy distinguishing. In this case, the decay of it will be slow. It can involve huge capital but could not be extended to other assets because it utilizes the natural features of commodities. In short, there is still a lot of room for improvement. And it's still a profitable strategy suitable to employ due to the impossibility of perfect market efficiency and the complex price structure of commodities.

4.8 Environment

The 2020 commodity market performance has offered investors a good amount of confidence to keep investing in the market. The operation process and data gathering is not too hard for investors to handle, which makes this strategy relatively easy to execute. If speculators want to do arbitrage, currently the special time would offer another opportunity if the covid era ends or a second wave of covid starts.

4.9 Correlation

The strategy results generated by the out of sample data, especially the net worth of our investment has high correlation with the macro market, and it did make profit based on the price fluctuations in the Covid period. In 2019, the total return rate was negative until the emergence of Covid 19 in China, which started from the Early January of 2020, and net worth of the investment has skyrocketed ever since. The government has reduced the interest rate and higher volatility is understood by the investors. The commodity market became a place for risk hedging and good selection for portfolio diversification because of the low value of risk-free return.

4.10 Trading Recommendation

It is a strategy with steady return and relatively high risk to investors with low risk aversion. Throughout the whole trading process, there are indeed aspects to improve on to get more precise results. In order to get more authentic transaction cost, opportunity cost and latency costs should be taken into consideration. Moreover, the calculation of bid ask spread is based on the current prices. There could be fluctuations on the spread with fair prices, more authentic and historical data are required to get more precise results. Also, it is better to include the day limit scenarios when trade is not allowed if change in prices has exceeded 10% in one day. It's hard to track the historical day limit records while it could be done when implementing this strategy in the future.

There are potential ways to increase the return as well. Bid ask spread is the main part of the transaction cost, the strategy's rebalancing frequency could be adjusted to monthly or weekly in order to reduce the transaction cost. The weighting method could be adjusted as well to boost the return. However, it depends on which level of risk is acceptable to specific investors. In this strategy, simple weighting is utilized, according to the table below. It has relatively lower return with lower volatility, higher maximum drawdown rate however. It could be said that there is a positive correlation between the strategy's annual return rate and its average volatility. The future market has higher market risk than the stock market, therefore investors could try the single species target method aiming for higher return. During the covid-19, future markets become more profitable for increasing volatility. Volatility is needed to generate higher returns. There are investors who purchase commodities to diversify their portfolio to hedge risk, it is recommended to construct a multi-assets portfolio to reduce the potential risk resulting from the higher market volatility.

To sum up, this strategy is highly efficient with a steady rate of return but a mediocre Sharpe ratio below one because of the high volatility, averaging 59.72%, much higher than the market average volatility. The maximum drawdown rate is also high, being nearly 20% in 2020. Covid has created investment opportunities for short term arbitrage, and it is likely to create more opportunities for incoming investors once there is a second wave of covid. For investors who can endure greater risks, this strategy has potential to generate considerable return (Table 6).

Table 6. Strategy performance with different weighting methods from HaiTong securities research report [6]

	Annualized %Return	Annualized %Volatility	Maximum drawdown	Calmar ratio
Equivalent weight (Simple Weighting)	11.27%	7.48%	0.17	0.66
ATR reciprocal weighted normalization	9.74%	6.25%	0.08	1.27
Reciprocal volatility weighted normalization	9.79%	6.18%	0.07	1.43
Single species target volatility 20%	14.42%	7.45%	0.08	1.72
Single species target volatility 30%	21.19%	11.17%	0.12	1.70
Single species target volatility 40%	28.17%	14.89%	0.16	1.71
Portfolio target volatility 10%	11.44%	5.87%	0.07	1.58
Portfolio target volatility 20%	21.91%	11.73%	0.14	1.53

5 Conclusion

Within this strategy, investors profit from the expectations of the potential convergence of the prices of distant-to-maturity to the near-to-maturity or current spot price level, and hedge risk by conducting long buying and short selling of different expiration-date-contracts. The overall expected return on average is 60.75% and the Sharpe ratio is about 0.7–0.9, differing by the weighting methodology, timing, and model parameters. The above result is based on a particular one that is appropriate and optimal. All in all, it is a relatively good strategy with a long-to-go developing process, but still depends on the investor's risk appetite. It tends to perform well under the circumstance of financial market turmoil.

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