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Rosefinch Research | 2022 Series # 44

Our 2023 Outlook Part IV

Asset Allocation Under New Perspective

2022 was the year of Black Swans – the pandemic of the century, the first armed conflict in continental Europe in 75 years, the most aggressive global inflation in 40 years. And with these rare risk events came a new age where uncertainty is becoming a key word for the market. Only those who survive the winter can see the spring. The most effective way to deal with uncertainty and survive through the business cycle is to build a resilient multi-asset allocation framework.

In this final part of our 2023 Outlook series paper, we'll look at the key characteristics and outlook for different asset classes of FI+, CTA, and REITs. In China, conservative investors are facing challenges of

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finding high return assets. “Fixed Income +” products are created to cater for such needs where conservative positions are built around fixed income holdings and aggressive positions are built around equity holdings. This type of FI+ product is a hybrid between the low-risk low-return cash management type products and the high-risk high-return equity products. Meanwhile, the CTA products tend to perform well during volatile markets which can hedge somewhat the equity retracements. CTA also has low correlation with equity, fixed income, or market-neutral quant strategies, further diversifying the portfolio risk. As for REITs, it’s outside of the normal equity or fixed income framework and invest in Real Estate market and directly benefit from final assets’ operating profits and appreciation. REITs is a key alternative product that’s worth holding.

1. The two perspectives of macroeconomy analysis.

Q1: This is a major year for macroeconomics, where the major asset classes have strong correlations. How do we view the market?
WANG Zhuangfei: For the FI+ strategy, the most important part is macroeconomic analysis. The economic fundamentals are the core ingredients for asset valuation and will have long-term impacts to the capital market. When we look at macroeconomic analysis, the first part is the analysis of China’s fundamentals. Chinese economy has clear cyclical phases which have relative clear impacts on asset prices. In addition to analysis of the cycles, we also must look at the economic structural transformations and how policy shifts bring thematic trend changes. The trend changes will make the previous macro analysis redundant. For example, when M2 and credit lending actually diverged when real estate funding needs decreased. Another example is that manufacturing industry’s investment activities were impacted by supply side restrictions on energy-intensive investments, or the supportive policy to promote new industry investments. Overall, the cyclical factors are key factors to analyze macroeconomics, but we also need to consider structural or trending factors. Depending on different economic stages, the major assets’ paths will be very different, which means we can’t overly rely on past economic logic. For example, in our current stage, we need to pay more attention to global industrial policies. The capital market is constantly incorporating new information, so the marginal changes in expectations will also be reflected in asset prices. So our macroeconomic analysis must also utilize our judgement on the relative asset valuations.

Q2: How do we see the future macro-economic trends?
WANG Zhuangfei: China’s domestic long-term logic is centered around changes in economic growth models. Previously, China’s growth was driven by investment, especially in Real Estate. But as current population growth no longer provides sustainable demands, real estate companies - especially those private enterprises with high leverage – will not be sustainable. The financial characteristics of Real Estate assets will slowly devolve and the role of real estate investment on generating economic growth will reduce over time. The driving force of economic growth should shift to the improvement of total factor productivity, the most obvious is the industrial upgrading of manufacturing industry. From 2021, the percentage of manufacturing contribution is increasing steadily, especially in high-tech industries. The upgrades of high-tech industries have become an important topic for macroeconomics, and will impact many other asset classes.

In the short-term, main issue is household and corporate risk-appetite recovery. The pandemic impacted employment, and weaker real estate market decreases household balance sheet. These factors increase household saving rates which saw deposits rising quickly. The future real estate funding policies may stabilize or even be friendlier, while pandemic policies are less stringent on economic activities. With unemployment rates stabilizing, it's likely some household confidence will return. On the corporate level, profit-forecasts are improving slightly as supportive policies are rolled out and upstream raw material costs go down. According to PBOC estimates, China's 2023-2025 potential growth rate is still above 5%, so even if 2023 will be somewhat impacted by residual pandemic impacts, it will move gradual to its potential growth rate and see a structural recovery overall.

In the global market, US inflation is showing signs of slowing down, global financial conditions are entering into relative stable period, and US economy is showing some resilience. Future demands may come off slightly, but is likely supported by personal consumptions. Global financial risk expectations are also stabilizing, where less stress on financial assets and lower energy prices will improve trade account and improve foreign currency liquidity. From the medium to long term view, the post-pandemic leveraged expansion in the developed markets will leave some risk for the future financial system. The global supply chain repair is getting more challenging, and the inflation pressure makes it unlikely to return to the pre-pandemic low-rate environment. The developed nations' debt situation will bear close monitoring.

Q3: How do you see 2023's major asset performance?
WANG Zhuangfei: From the asset allocation perspective, the macro environment is more friendly towards equity assets. On the one hand, the relative valuation ratio of stocks and bonds reflects the risk preference of the market. When the risk preference is at extreme levels, we may see a reversal which means the ratio can be used as an indicator for asset allocation changes. The current level of stocks to bonds valuation ratio favors equities. On the other hand, we'll likely see marginal improvement at the fundamental level, and the overseas financial environment is gradually stabilizing. Among equity assets, the high-tech manufacturing industry has a relatively high level of support in terms of policy support and its own outlook. The downside of bond yields now is limited, but because the liquidity environment is still relatively stable during the recovery phase, the overall upside risks for yields are manageable.

Q4: What's the key characteristics of Rosefinch's FI+ research model?
WANG Zhuangfei: First of all, we prioritize pinpointing the macro trend and not just limiting ourselves to cyclical considerations. We look at major trends in the macroeconomy, emphasize on structural adjustments and changes in growth models. Second of all, we look at combining macro and micro views, where close observations on individual sector or even company may give us timely insights on marginal changes. This bottom-up perspective through industry chain analysis can quickly identify economic pulses that can affect macro logic and appropriate asset allocation strategy. In addition, our equity investment strategy is very mature with strong bottom-up stock selection track record. This is helpful in establishing a diverse and insightful FI+ allocation. And finally, we maintain very steady investment philosophy of keeping clients' interest at the core. We are very careful about retracements and will try to keep asset

allocation relatively balanced across asset classes, maintain vigilance on extreme or surprise condition, and target relatively stable returns.

2. On CTA: challenges and responses in an efficient market.

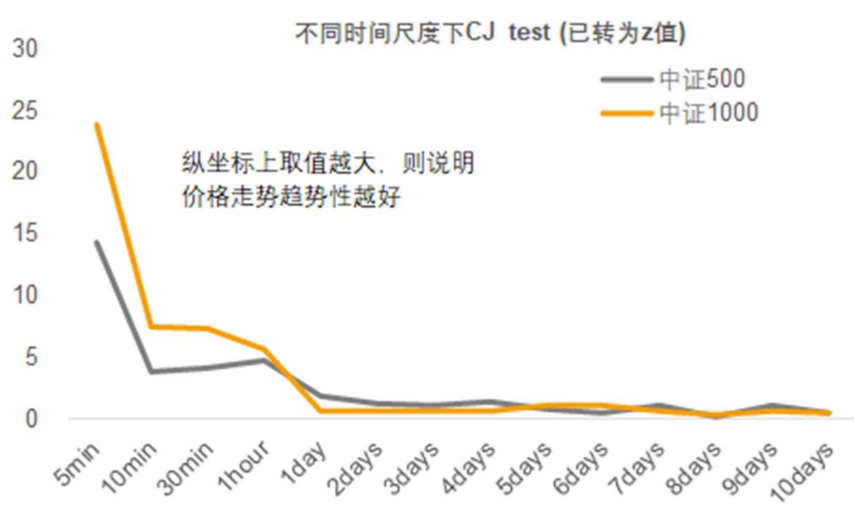
Q1: In what type of markets will CTA strategy perform the best?
ZHANG Xiaojue: CTA strategy's profitability include two assumptions, one is the predictability of the price trend itself, and the other is the price trend distribution has consistency across different time periods. Only then can the models apply the recognized patterns in the new market environment. Therefore, CTA strategy tends to perform well in markets that are trending with high volatilities. In the A-shares, because many investors chase the highs and cut at lows, the market has strong momentum which is what CTA model picks up. When there's clear trendy markets, the model will have relatively higher successful predictions. Meanwhile, when the index volatility is high, the market's predictability will increase. Even during the process of modeling, there will be more weighting assigned to high volatility data points, which makes the strategy performance better during period of high volatility.

Source: Rosefinch. X-axis is volatility, Y-axis is trendiness. Top right is high profitability; top left is profitability; bottom left is retracement; bottom right is large retracement.

Q2: Why is this year's CTA performance worse than previous years? How to ensure strategy viability?

ZHANG Xiaojue: One reason for the underperformance this year is that the index price pattern deviated from historical norms, which makes the model strategy less effective. Take equity index as an example, we can see that in this year's market, the probability of extreme drops has clearly increased, and the high volatility environment became less sustained. In addition, the intra-day movements this year have become a random-walk, which raises the difficulty for the modeling. And since April this year, commodity futures have experienced excessive volatility. In order to ensure strategy's effectiveness, we have established a diversification framework that incorporated a lot of machine-learning. First of all, diversification is the best risk management approach. To quant investors, everyone wants to find the stable alpha that works across bull-bear cycles. But the reality is that such alpha comes from market mispricing, which is continually corrected by the trading actions of the quant model funds, thus leaving less alpha available. So alpha itself is fluctuating. We can use modeling to reduce how much alpha changes across market cycle, and use asset allocation approach to diversify alpha allocation and stabilize valuation. Currently we have established a well-diversified framework. In addition, we had done a lot of deep research in machine learning. Because the financial data noise level is relatively low, it's hard to achieve strong CTA results by simply copying standardized machine learning process. We must deploy finer adjustments based on the market-specific characteristics. For example, sample dataset selection and objective function setting will have major impacts on the final machine learning results. We had done a lot of testing and created a robust and complete development protocol. At the same time, we explored many different machine learning models like CNN, LSTM, transformer, etc. We had carefully compared and explored different neutral network structures, and measured each model's detailed configurations. This knowledge is useful proprietary information that we utilize in building a more robust model.

Q3: Rosefinch's CTA strategy has improved steadily, what are the major changes this year?
ZHANG Xiaojue: In July 2022, the market saw the launch of CSI1000 stock future. We were actively involved at the earliest possible time. CSI1000 focuses on small cap stocks, which means it has high returns and trendier, making it a good candidate for CTA. When we compare CSI1000 to CSI500, we can see CSI1000 is trendier and has higher volatility.



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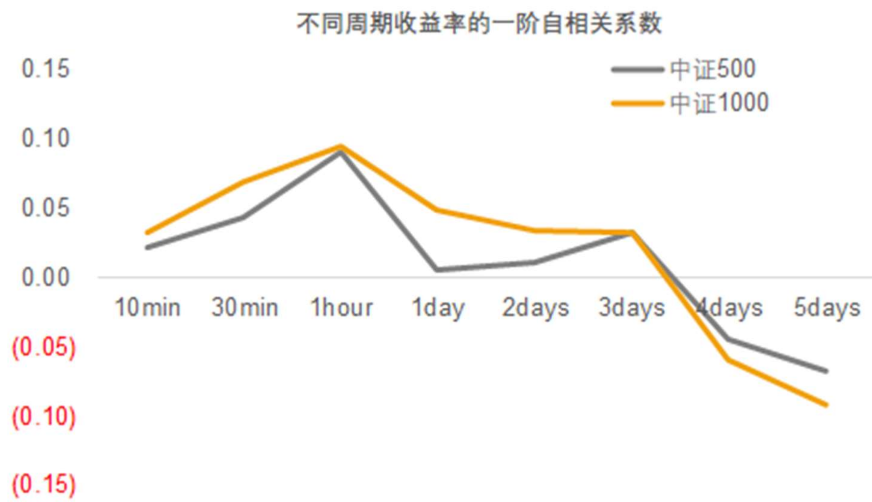
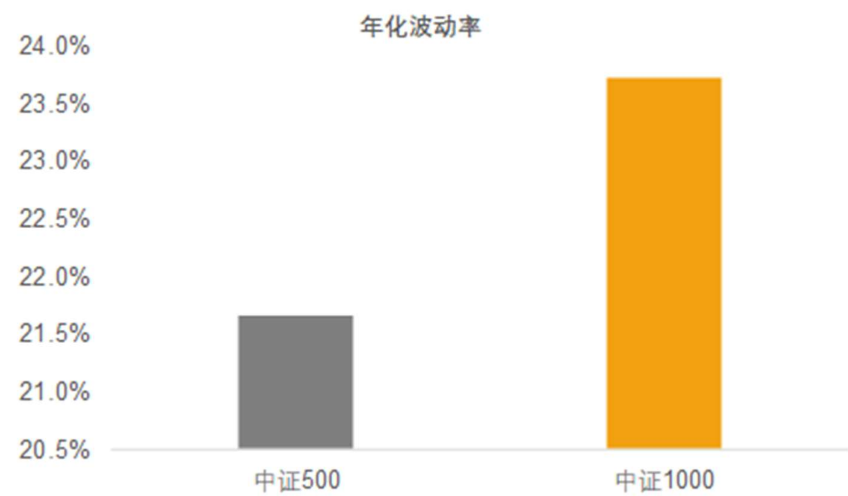
Source: Wind, Rosefinch. X-axis is time periods, Y-axis measures trendiness. CSI1000 (orange) shows better trendiness than CSI500.



Source: Wind, Rosefinch. X-axis is time and Y-axis is first order auto-correlation.



Source: Wind, Rosefinch. Y-axis is annual volatility.

And we also compared the predictive ability of the market characteristics of the same logic to different index trends. The effectiveness of the factor pool on the CSI 1000 is significantly higher than that of the CSI 500. Of course, with the growth of the CSI 1000 Index and the expansion of Snowball's scale in the future, its relative advantage will be weakened, but overall, the introduction of the CSI 1000 will improve the performance of stock index strategies. Furthermore, we also continue to optimize the genetic programming algorithm so that it can perform factor mining more efficiently. Our optimization of the algorithm is mainly in four aspects: First, the operator set and feature set are enriched, more time series operation rules are included, and quantitative price features are added. Second, a multi-objective optimization mechanism is introduced. During the evolution process, we will not only pay attention to the predictive ability of the factors on the price trend, but also consider the objectives of grouping monotonicity and inter-factor correlation, so that the final factors can be more accurate. Well embedded in subsequent machine learning frameworks. Third, we introduced a cross-validation mechanism based on out-of-sample data when screening the next-generation factors to prevent overfitting. Fourth, we found that with the continuous iteration of the population, the degree of individual difference in the population will gradually decrease, resulting in a gradual decrease in iteration efficiency. For this, we have also developed an algorithm to ensure that the individuals in the population still have diversity in the later stages of iteration. Finally, in terms of the model structure of machine learning, we tried the self-attention mechanism this year, which is an algorithm that allows the model to focus on key information and absorb learning. Compared with the cyclic neural network, it can enhance the predictive ability of the model, realize short-distance and long-distance information interaction, and achieve faster calculation speed.

3. New Energy REITs will become the booster for new energy infrastructure.

Q1: Why is the REITs mutual fund so popular, how's its current development?
JIANG Hao: REITs mutual fund was tested in Jun 2021 in China and covered areas of transportation infrastructure, energy infrastructure, municipal infrastructure, ecological and environmental protection infrastructure, warehousing and logistics infrastructure, park infrastructure, new infrastructure, affordable rental housing and other 9 major industries. As of Nov 30th, 2022, there are now 22 products with total market capitalization of 82.8 billion RMB and free float capitalization of 34.9 billion RMB. This year, given equity product is underperforming and there's a lack of REITs product, the REITs mutual fund are often oversubscribed, with 9 out of 12 new products oversubscribed by 100 times.

From investment return perspective, dividend is a key part. Currently, 12 REITs products have already delivered dividends, with total of 22 dividends worth 2.4 billion RMB. The first wave of REITs Mutual funds is also reopening for subscriptions, which will be helpful to diversify the risks of existing portfolio, provide robust growth potential, and support stable operations of infrastructural assets and realize asset appreciation. In terms of liquidity, the REITs liquidity is generally sufficient. Take November for example, the daily turnover of REITs mutual funds is 1.26%, higher than similar oversea REITs products and domestic stocks or bonds. In terms of market capacity, Huatai Securities estimates that by end of 2023, there may be over 60 REITs products in the market worth over 150 billion RMB. In the next 3 to 5 years, we may see the emergence of another trillion RMB product.

Within the REITs universe, the New Energy REITs may be the booster for the New Energy infrastructure expansion. New Energy REITs can provide exit paths for project developers and construction companies, as well as providing a new route for long-term financing. This will go a long way to secure large 3060 project financing. Among the existing projects, the REITs-eligible companies have asset sizes of 44.8 billion RMB hydropower, 439.5 billion RMB wind power, and 201.5 billion RMB solar power.

Q2: REITs mutual funds have diverse performances, what is the advantage of New Energy REITs?
JIANG Hao: In contrast to primary markets of REITs mutual funds that are hugely oversubscribed, the secondary market prices are in falling trend. Some main reasons including actual performances being

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weaker than expected, profit-taking from initial investors, complementary effect between stocks (high) and REITs (low), and future rate expectations. The REITs mutual funds' performance is hit by economic fluctuations, but most REITs mutual funds are showing signs of improved operating margins. Clean Energy REITs and Logistics REITs are showing steady operations with high success rate and strong counter-cyclical resilience. Highway REITs, Environmental Protection REITs, and Industrial Park REITs suffered from pandemic and rising costs, and therefore show improvements month-on-month but still negative year-on-year. In comparison, new energy assets are excellent candidates for REITs mutual fund. Firstly, there's clear business model. The electricity pricing formula is well-established and is aligned with government policies. Such REITs have strong counter-cyclical resilience. In addition, the technology for the operating environment is mature, with stable profitability and predictable cost base. Finally, the electricity bills are settled promptly, making these REITs cash-cow assets.

Q3: How do you evaluate the New Energy assets?
JIANG Hao: We can evaluate New Energy assets from three perspectives of size, compliance, and returns. In terms of size, a single REITs solar asset should have high capacity and asset size of at least 1 billion RMB. In terms of compliance, there should be clear ownership structure, complete project permits, and power-generation capabilities. As for returns, the project investment IRR should be at least 6%.

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