One Percent Inspiration

YOU WANT LIQUIDITY, TRANSPARENCY AND DIVERSIFICATION? WE'VE GOT LIQUIDITY, TRANSPARENCY AND DIVERSIFICATION

Tushar Chande, Ph.D. & Niels Kaastrup-Larsen, Rho Asset Management AG, www.rhoam.ch

INNOVATION TAKES HARD WORK

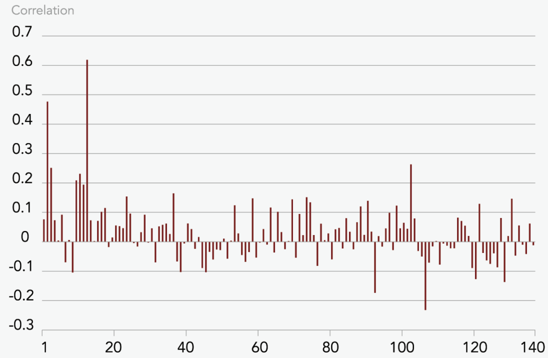
Thomas Edison, the great American inventor, defined genius as comprising one percent inspiration and ninety-nine percent perspiration. We are not geniuses, but we did work hard to develop a well diversified and systematic trading program inspired by the needs of risk-averse investors. You want liquidity, transparency and diversification? We've got liquidity, transparency and diversification. You want returns, risk control and low-correlation? We've got returns, risk-control and low-correlation.

DEEP LIQUIDITY, SHEER TRANSPARENCY, MASSIVE DIVERSIFICATION

We trade highly liquid, regulated, exchange-traded futures markets around the world, so it takes mere seconds to open or close a position at will. That's liquidity. We have daily mark-to-market, and we provide comprehensive, third-party daily risk reports, so you know exactly what your investment is doing at all times. That's transparency. We have two core programs, which can be combined to provide massive diversification (see Table 1). The combined program trades 44 futures markets, using a highly automated and disciplined approach, with over 30 trading strategies, that are a mixture of trend-following and countertrend models, covering time horizons from 2 to 70 days. Now that's diversification.

FIGURE 1

The Rho Fortius program provides massive diversification by trading nearly 140 system-market combinations (x-axis) whose returns are historically uncorrelated.



DIVERSIFY WITH UNCORRELATED SYSTEM-MARKET COMBINATIONS

So, how diversified are we? We measure diversification in terms of system-market combinations, i.e., one system trading one market gives us one unit of diversification. By combining the two core programs, not only do we offer nearly 140 units of diversification, (see Figure 1), but crucially, these units of diversification are more or less uncorrelated to one another. The more uncorrelated system-market combinations in a portfolio, the greater the diversification. This is where we shine, and the typical stock portfolio loses its luster, because most stocks in a country tend to be correlated, especially during market crises.

DIVERSIFICATION IMPROVES RETURN EFFICIENCY

Why is diversification relevant? Well, adding uncorrelated streams of cash flow to a portfolio's return stream will theoretically increase its Return Efficiency (ρ), which is the ratio of average monthly return (μ) to the standard deviation of monthly return (σ), i.e., $\rho=\mu/\sigma$. You can see this schematically in Figure 2, which shows how return efficiency might change when uncorrelated systems are added in random order to a portfolio. Increasing the return efficiency increases the expected returns, and also enhances the consistency of returns. Investors should find this useful because they can use return efficiency to connect their draw-down threshold to expected future returns. We begin by illustrating how monthly volatility, σ, is related to future draw-down risk.

TABLE 1

A summary of Rho's trading programs.

	Altius	Citius	Fortius 1:2
Strategy	Medium term trend following	Short term counter-trend	Combined
Number of Systems	4	28	32
Number of Markets	44	10	44
Holding Period (Days)	30 – 70	2 – 12	2 – 70
Annualized return target	20 - 24%	20 - 24%	25 - 30%
Yearly standard deviation	15 - 20%	7 - 12%	13 - 17%

FIGURE 2

Adding system-market combinations (x-axis) in random order to a portfolio illustrates schematically the concept that Return Efficiency (y-axis) increases as the number of profitable, uncorrelated system-market combinations increases.

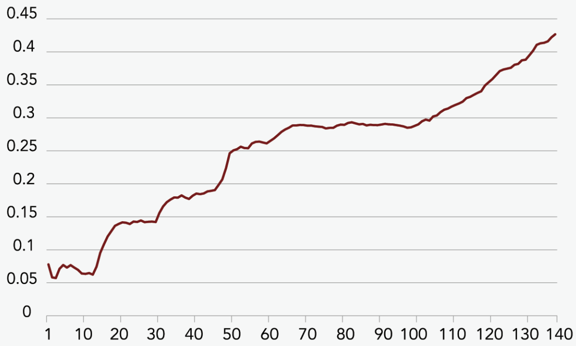


FIGURE 3

Notice that the higher the monthly volatility (x-axis), the greater the potential draw-down risk (y-axis). Fortunately, the relationship is fairly linear, so you can change a program's funding level to obtain the volatility level that lets you sleep at night. For well diversified programs, the future month-end drawdown risk may be estimated as 3~4 times the monthly volatility (σ).

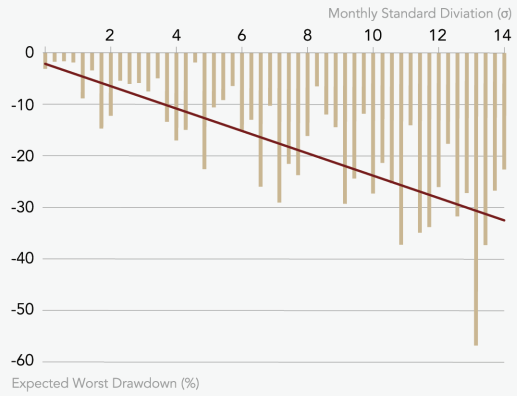
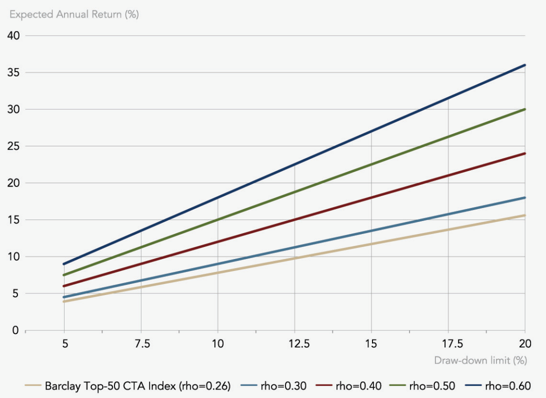


FIGURE 4

Figure 4 shows that in order to obtain greater returns (y-axis), an investor must tolerate greater draw-down risk (x-axis), or, for a given draw-down risk level (x-axis), the investor must find a manager with a higher Return Efficiency (move to higher curve).



FUTURE DRAW-DOWN RISK DEPENDS ON VOLATILITY

Every investor has a threshold of pain for draw-downs, and in the managed futures business, you can take advantage of the clear relationship between monthly volatility (σ), and the reported worst draw-downs, as shown in Figure 3. You can now use your draw-down limit to estimate the level of monthly volatility that is right for you.

RETURN EFFICIENCY CONNECTS DRAW-DOWN LIMIT TO EXPECTED RETURNS

Rho's Return Efficiency ($\rho=\mu/\sigma$) connects the future draw-down limit desired by an investor to the future returns an investor can expect (as seen in Figure 4). The figure shows that in order to obtain greater returns, an investor must be prepared to tolerate a greater drawdown risk, or, for a desired level of risk, must find a manager with a higher return efficiency. The investor must recognize that these are estimates of future performance, and not a guarantee that the manager will deliver a specified return or draw-down. Rho's design goal is to "maximize" return efficiency for a given level of risk, in order to provide attractive risk-managed returns.

> "The investor must recognize that these are estimates of future performance, and not a guarantee that the manager will deliver a specified return or draw-down"

ARBITRARY ALLOCATION ALGORITHMS ARE AVOIDABLE

Our analysis allows you to calculate expected future returns based on your risk preference and draw down limit via return efficiency (see Figure 5). Arbitrary, but popular criteria, such as the length of a manager's track record, or minimum assets under management, affect neither future returns, nor future risk. For example, since managers are frequently making significant changes to their investment strategies, the 'real' track length may be substantially shorter than advertised. As industry performance in 2008 and 2009 demonstrates, neither the amount of

FIGURE 5

The Rho Allocation algorithm illustrates how an investor's risk preferences can be linked to manager Return Efficiency to convert their future draw-down limit into returns expected in the future.

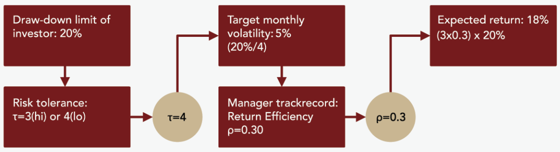
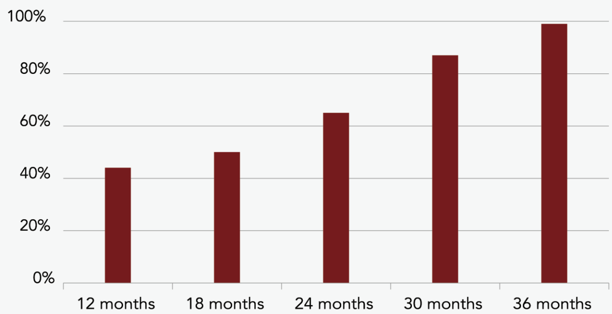


FIGURE 6

Figure 6 shows the probability of making an estimate within ±20% of the 'true' long-term Return Efficiency of a manager (y-axis), for different lengths of track record data (x-axis). With 24 months of our data, we estimate a 65% probability of being within ±20% of the 'true value', which rises to 87% with 30 months of our data and exceeds 99% with 36 months of our data.



assets under management, nor the length of a manager's track record, protect a portfolio against poor performance. So, the key question is how much data are needed to run this algorithm?

24-36 MONTHS OF DATA ARE SUFFICIENT

In a society overloaded with data, can we get enough? At some point, though, we have to concede that we have sufficient data to make a reasonable decision. For practical purposes, because returns from trading futures do not have the constancy of a Treasury bill, an estimate in the error of 20% is acceptable, i.e., an estimate is 'good enough' if it is within 20% of the expected 'longterm' value of return efficiency. Our best guess of the probability of being within 20% of the 'longterm' return efficiency is shown in Figure 6 for different lengths of track record. We believe that given the natural variability in market returns, 24-30 months of data are sufficient, and we see little justification for using more than 36 months of data to make practical decisions.

RISK MANAGEMENT IS WHAT WE DO

Risk management is what we do round the clock every single day. Our organisational structure, process automation, and constant vigilance, are all directed at controlling risk, and minimizing errors. We have outside service providers who check for errors, we have internal software to check for errors, and we have partners independently checking for errors. We are serious about risk management.

RHO OFFERS RISK-MANAGED RETURNS

Rho provides diversification, across markets, strategies and time horizons, with deep liquidity and sheer transparency. Creating these diverse programs took plenty of perspiration and a little bit of inspiration as well. Thomas Edison would be pleased. ■

Contact Information:
Rho Asset Management AG
Baarerstrasse 78
CH–6300 Zug
Switzerland
Tel: +41 41 712 3000
E-mail: investor@rhoam.ch
Website: www.rhoam.ch

About Rho Asset Management

Rho Asset Management ("Rho") is a Swiss based Commodity Trading Adviser (CTA) established in 2007. The founders of Rho have combined more than 50 years of experience in alternative investments and a successful track record in trading and managing client assets.

Our goal is to provide the highest possible Return Efficiency to our investors using Altius, Citius and Fortius, all fully automated trading programs. Rho is research and technology driven, specialising in design and implementation of systematic trading strategies. All strategies are based on quantitative analyses of price behavior in the global financial and commodity markets.

Rho is dedicated to providing our clients with tangible value in investment performance and quality of client service.