

FLOW WORLD REVOLUTIONS

Investment Insights Series

How should investors manage risk in a world where flows can dominate fundamentals? In this third article of the "Flow World" series, Aneet Chachra, Portfolio Manager, and David Elms, Head of Diversified Alternatives, evaluate trade sizing, diversification and risk management in a modern portfolio.

This is the third and final instalment of our flow world trilogy. Earlier Insights:

Part 1 - Welcome to Flow World (January 2021)

Part 2 - Flow World Reloaded (March 2021)

“ You must be shapeless, formless, like water.
When you pour water in a cup, it becomes the cup.
When you pour water in a teapot, it becomes the teapot.
Become like water, my friend.”

Bruce Lee

Our view from the start of 2021 was “Flow World,” a market where flows dominate over fundamentals, with liquidity sloshing from one sector to the next. Tide in, tide out. Flow surges were met with increased supply, whether SPACs (Special Purpose Acquisition Companies), convertible bonds, call options or new cryptocurrencies. These issuance waves now appear to be receding.

Although most asset classes have performed well year-to-date (to 14 June 2021), these flow waves created significantly different investor outcomes. Some market participants with high leverage and inappropriate position sizing struggled due to sudden volatility spikes and margin calls. But flows also created opportunities for flexible strategies to capture price moves in both directions.

The key challenge with flow-driven anomalies is not just identifying and sourcing them, but diversification and risk management. Most investors focus on the risk/reward of individual trades. That is only part of the picture – monitoring correlations, building repeatable strategies, compounding returns and avoiding/mitigating large portfolio losses are also important to achieve consistent results over time.



Aneet Chachra, CFA
Portfolio Manager



David Elms
Head of Diversified
Alternatives, Portfolio
Manager

Key Takeaways

- Although most asset classes have performed well thus far in 2021, large price moves due to flows have created significantly different investor outcomes.
- The portfolio challenge is not just identifying and sourcing individual trades, but also executing repeatable strategies and avoiding/mitigating large losses.
- The combination of low correlation and small positive edges builds differentiated strategies with persistent returns.

Correlation Matters

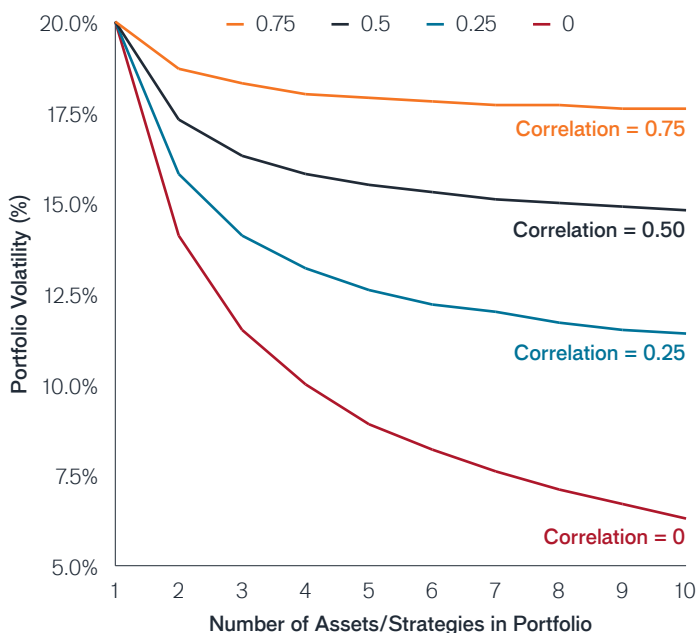
Over the long run, the average stock in the S&P 500® Index has a realized volatility of about 21% per year while the average correlation between any two S&P 500 stocks is about 0.5. Roughly, this means that about half of a stock's performance is attributable to index returns, with the other half to stock-specific reasons.

As you put together an equity portfolio, there is initially a sharp reduction in overall volatility. But the pace of improvement flattens out quickly due to the relatively high correlation between stocks. The long-run realized volatility for the S&P 500 Index is about 15%/year, or only about one-third lower than the individual stock average. The incremental diversification benefit is small beyond about 10 stocks.

However, when you combine low or uncorrelated assets or strategies, portfolio volatility drops more sharply, and each addition matters. Exhibit 1 shows the total portfolio volatility when combining 1 to 10 items (20% volatility each) that have different average levels of correlation.

Notably, just six uncorrelated strategies reduce overall portfolio volatility by 60%. This is a greater diversification benefit than holding a much larger number of more correlated assets.

Exhibit 1: Low/Uncorrelated Strategies Help Maximize Diversification Benefit



Source: Janus Henderson Investors. Note: This is for illustrative purposes only. No accounts were managed using the portfolio composition and no representation is made that any hypothetical returns would be similar to actual performance. Past performance is not a guide to future performance.

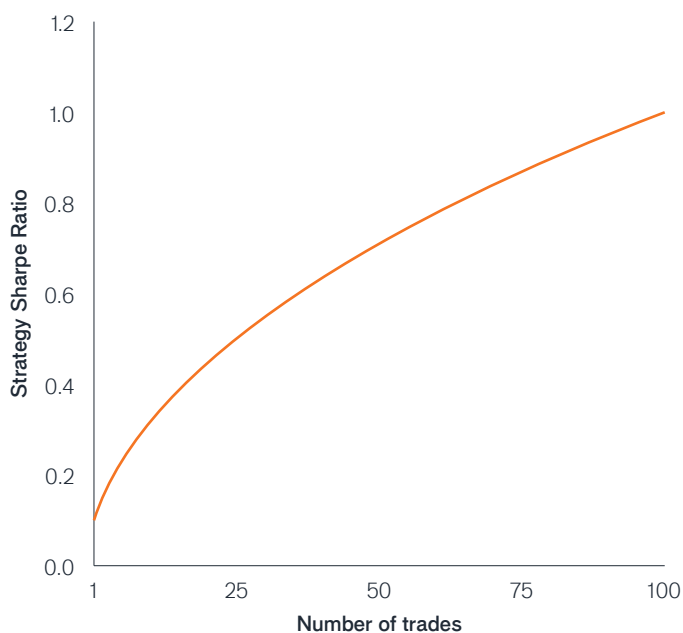
Repeated Edges

Imagine you are offered a single trade that will result in an average 1% gain on your investment but with a 10% standard deviation. Assuming normal distribution, this trade would be profitable only about 54% of the time. In about 30% of occurrences you would lose more than 4%, while 14% of the time your loss would exceed 10%. On a one-off basis, most people would not consider this an attractive opportunity. Furthermore, some market participants would rationally give up a 1% gain to achieve a more certain outcome and/or to deploy their capital elsewhere.

Despite having a positive expected value, this trade has an approximate Sharpe ratio of 0.1 (1% return/10% volatility) that is generally considered low. However, if this trade is part of a repeatable strategy, then its quantitative metrics look vastly different. Exhibit 2 shows the total strategy Sharpe ratio after repeating this trade between 1 to 100 times (assuming each iteration is uncorrelated).

Executing the exact same trade 100 times results in a strategy Sharpe ratio of 1.0, or 10x better than the one-off version. That looks attractive especially when combined with other low or uncorrelated strategies.

Exhibit 2: Sharpe Ratio Improvement for Repeated Uncorrelated Trades



Source: Janus Henderson Investors. Note: This is for illustrative purposes only. No accounts were managed using this strategy and no representation is made that any hypothetical returns would be similar to actual performance. Past performance is not a guide to future performance.

Diversification and Tail Risks

The combination of low correlation and small positive edges builds differentiated strategies with persistent returns. However, actual market outcomes are not normally distributed. Deployed capital is exposed to tail risk greater than modeled expectations.

2021 has been a strong reminder of the limitations of models. On multiple occasions, buying/selling flows overwhelmed available liquidity. Many popular stocks doubled or fell 50% within a day, causing large realized losses for hedge funds, family offices and banks.

With that in mind, we update the earlier trade example to include tail risk:

1. 99% probability of a +1.5% profit normally distributed with a 10% standard deviation
2. 1% probability of a -48.5% loss (tail event)

In both the original and updated examples, the expected per-trade gain is exactly the same (+1% profit per trade, on average). Naively, we would expect the total gain from a set of 100 such trades to be around +100% (+1% profit per trade x 100 trades).

To test this on both examples, we generated the distribution of outcomes for sets of 100 trades via several thousand Monte Carlo simulations¹. Individual trades within each set utilized 100% of allocated capital.

For the updated example that incorporates realistic tail risk, both the probability and magnitude of large drawdowns were significantly higher than the original example. Despite each model set being 100 trades with a substantial 1% per trade edge, about one-quarter of simulated sets surprisingly ended with less capital than they started with, and about 10% of simulations lost more than half of their starting capital.

Incorporating tail risk resulted in drawdowns about twice as bad as the original model, despite both examples having the same average per trade return. One or more large losses can have a severe impact. This can be mitigated through conservative trade sizing and diversification. For example, if we limit each individual trade to 5% of allocated capital (instead of 100%), then very few simulations resulted in a capital loss, and none were large.

The other tail risk is an unexpected rise in correlations across trades due to broad market risk. Using an option overlay at the portfolio level can help hedge unexpected macro events. Carrying this “insurance” comes at a cost in normal times – however it provides valuable offsets during crisis periods.

Putting it all Together - The Rules of Flow World

1. Take advantage of flow pressures by finding “willing losers” – mandated, systematic, non-economic or behaviorally biased participants
2. Recognize that adding a correlated asset does not help portfolio diversification much
3. Seek modest but consistent edges – wide variance in outcomes discourages competition
4. Be willing to accept idiosyncratic risk on individual trades
5. Run a large number of strategies/trades across asset classes, sectors, and geography
6. Size carefully to mitigate individual trade risks and use portfolio level hedges to minimize coincident drawdown risk

The flexible and adaptive are the winners in flow world.

¹ Monte Carlo simulations are used to model the probability of different outcomes when random variables are considered, for the purpose of better understanding the potential impact of various risks on prediction and forecasting models.

Note on simulated returns:

The hypothetical, back-tested performance shown is for illustrative purposes only and does not represent actual performance of any client account. No accounts were managed using the portfolio composition for the periods shown and no representation is made that the hypothetical returns would be similar to actual performance had accounts actually been managed in this manner.

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