Venncast Report

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Abstract

Allocators often receive fund performance on a delayed basis, notably for non-public funds. Understanding timely portfolio performance can therefore be challenging. Venncast is a tool that provides users with up-to-date performance estimates. In this study, we use master portfolios in Venn to test how well Venncast works and provide an example of how allocators may actually use it.

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Introduction

Understanding current portfolio performance is important for many reasons, including reporting, stakeholder communication, and market analysis. Because returns are often only reported on a delayed basis, understanding current performance can be challenging. Answering the basic question of "How is my portfolio doing?" should not be so hard. Venncast can help users meet this challenge by displaying current portfolio[1] estimates before reported returns are available.

Exhibit 1 | Venncast Example for Venn's Demo Portfolio[2]
Source: Venn, February 2019.

To do this, Venncast uses estimates of the portfolio's current factor exposures, along with the Two Sigma Factor Lens's factor returns, which are readily available on Venn, to infer portfolio performance and the error bands of that estimate.

How Accurate is Venncast?

A natural question is, how well does Venncast actually work? We set up a study to try to answer this question.[3] We selected master portfolios on Venn that have at least 42 months of returns.[4] We used the first 36 months to calculate each portfolio's factor exposures and residual return.[5] Then we Venncasted the next six months for each portfolio and compared these estimates to the corresponding six months of reported returns.

Here are the results of comparing the Venncast returns with the reported returns:

- 62 master portfolios analyzed
- After month six, ~76% of the portfolios' reported returns were within the Venncast error bands

Exhibit 2, above, displays the results by month.

How should we interpret these results? Are they acceptable? Should the percent of "successful" portfolios be higher or lower than 72% on average?

To answer these questions, let's first discuss the Venncast error bands.

Exhibit 2 | Venncast Portfolio Results by Month[6]
Source: Venncast, December 2018.

Month	Total # of Portfolios	# of Successful Portfolios	% of Successful Portfolios
1	62	48	77%
2	62	47	76%
3	62	38	61%
4	62	44	71%
5	62	45	73%
6	62	47	76%
Average	62	45	72%

1 Venncast is also available at the strategy and investment levels.
2 We shortened the demo portfolio returns to end on December 31, 2018 in order to Venncast.
3 The study was based on the Venncast methodology updated in January 2019. We would expect the results of the study for Venncast before the update to be different.
4 We required 42 months of returns because Venncast requires 3 years of monthly portfolio history to generate factor exposures, and Venncast forecasts performance for up to 6 months.
5 Venncast does not provide performance estimates for portfolios with residual risk greater than 40%, so we removed such portfolios from our sample. At that level of residual, it becomes difficult to provide a reasonable Venncast estimate because less of the portfolio's risk and return is captured by the Two Sigma Factor Lens.
6 "Successful" is defined here as reported portfolio returns falling within the Venncast error bands.

Venn recognizes that Venncast performance estimates are estimates only and carry many uncertainties, which the error bands attempt to quantify. Uncertainties include errors in estimating factor exposures, changing factor exposures, and the volatility of the residual return. Therefore, the error bands are intended to reflect the volatility of the residual return and the covariance of factor returns over the estimation period.

Couldn't Venn "inflate" the successful percentages above just by widening the error bands? Wider error bands may provide more "successful" Venncast performance estimates, but they would also make the performance estimates less useful. Imagine a case where Venncast estimates a +2% return over a six month period with error bands of ±100%. That wouldn't be very helpful at all!

Instead, Venncast shows error bands of one standard deviation. Therefore, we would expect that reported portfolio returns would fall within the error bands around 68% of the time.[7] And, although the results of this study are a little bit higher than that expectation, we don't feel they are egregiously so. We would expect that as the sample size (number of master portfolios, in our case) increases meaningfully, the number of successful portfolios would move closer to 68%.

How Could Allocators Use Venncast?

Venncast can be useful in estimating how a portfolio is performing in the current market environment before the underlying managers are able to report their returns. For example, let's go back to the demo portfolio displayed in Exhibit 1 and assume it's an allocator's portfolio. The allocator has returns available for their managers through the end of 2018. It's now a month into the new year, and the allocator wants to know how their portfolio is holding up in January given the strong market reversal. In particular, they want to understand which factors and managers are driving portfolio performance in order to anticipate performance questions and/or prioritize conversations with managers.

The homepage of Venn displays an estimated cumulative return chart for the YTD 2019 period. Since the allocator has provided portfolio returns up until December 31, 2018, Venncast will estimate the portfolio's performance from that date to today.

Exhibit 3 | Venncast YTD Estimated Performance for the Demo Portfolio
Source: Venn Analysis, February 2019.
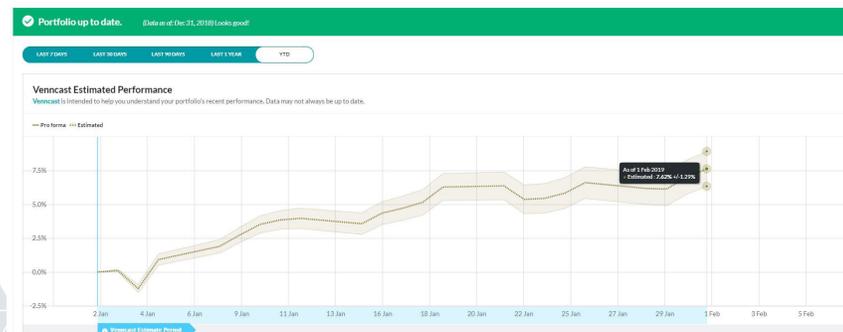
Venncast estimates that the portfolio has posted positive returns YTD 2019 (through the end of January) of ~8% with error bands of ±1.3%. An allocator can dig into this further by exploring attribution from two angles: factors and investments (i.e. funds/managers).

First, they can analyze this estimated portfolio return from a factor perspective: which factors are contributing to this ~8% positive performance? To begin this analysis, they'll need to understand which factors this portfolio is exposed to. Venn's factor summary within pro forma analysis estimates that the portfolio has two meaningfully positive factor exposures: Equity and Small Cap, as displayed in Exhibit 4.

Exhibit 4 | Demo Portfolio Factor Exposures
Source: Venn Analysis, February 2019. Time period: January 2016 - December 2018, monthly data.

How are these two factors performing YTD? The allocator can use Venn's Factor Insights page to explore the daily factor performance. As displayed in Exhibit 5, both factors have posted positive returns this year. Therefore, it's likely that the portfolio's strong exposures to these factors have contributed positively to the overall portfolio's performance this year.

Exhibit 5 | Equity and Small Cap Factor Performance
Source: Venn Analysis, February 2019. Time period: January 1, 2019 - January 31, 2019, daily data.

Venncast provides estimates at the investment level as well, which are displayed on Venn's homepage. This allows allocators to analyze which specific funds are contributing to their portfolio's positive performance. Exhibit 6 shows the top 5 performing investments in the demo portfolio for the YTD period.

Exhibit 6 | Venncast YTD Estimated Performance for Investments in the Demo Portfolio
Source: Venn Analysis, February 2019.

Top 5 Investments

| Name	Last 7 Days Return	+/-	Last 30 Days Return	+/-	Last 90 Days Return	+/-	YTD Return ▾	+/-
Wells Fargo Emerging ...	3.2%	0.2%	14.2%	3.1%	18.6%	3.5%	18.9%	3.5%
DFA US Small Cap Valu...	-0.7%	0.3%	9.9%	4.2%	-1.3%	4.7%	17.4%	4.7%
DFA US Large Cap Valu...	0.8%	0.2%	10.6%	2.6%	0.6%	2.8%	14.7%	2.8%
DFA Commodity Strate...	0.2%	0.1%	6.9%	2.2%	1.8%	2.5%	11.5%	2.5%
Invesco Balanced-Risk ...	0.1%	0.2%	5.9%	3.7%	0.9%	4.1%	10.3%	4.1%

5 investments were excluded from this table. ⓘ

Three equity[8] funds are at the top of the list: Wells Fargo Emerging Markets, DFA U.S. Large Cap Value, and DFA U.S. Small Cap Value. This is unsurprising, as these investments are meaningfully exposed to the Equity factor (as indicated on each fund's tearsheet), which, as demonstrated earlier, has done well this year. The next two funds on the list are commodity-oriented[9] funds: DFA Commodity and Invesco Balanced-Risk Commodity.

Even though there was no Commodities exposure at the aggregate portfolio level, commodity performance is having an impact at the investment level. An allocator can look at the Commodities factor on the Factor Insights page to confirm its positive performance YTD. As shown in Exhibit 7, this factor has also delivered positive performance so far this year.

Exhibit 7 | Commodities Factor Performance
Source: Venn Analysis, February 2019. Time period: January 1, 2019 - January 31, 2019, daily data.
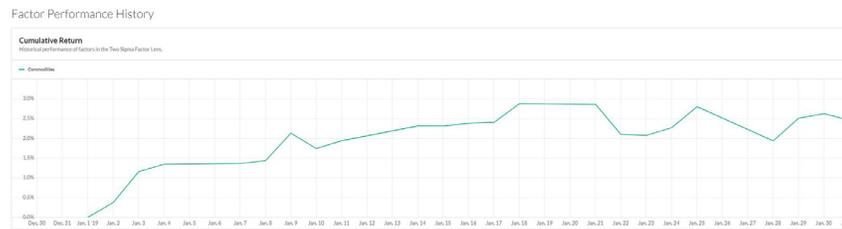
Finally, there are several investments in the demo portfolio that do not have available Venncast estimates because of their large residual risk component.[10] An example is the Merger Institutional fund within the Alternatives sub-strategy of the demo portfolio. While this fund's risk can partly be explained by factors (as displayed from the output of the fund's tearsheet in Exhibit 8), a large component of the risk is unexplainable by the Two Sigma Factor Lens. This investment, along with others in the portfolio that have a high residual, may contribute to the ±1.3% error bands around the portfolio Venncast estimate.

Exhibit 8 | Merger Institutional Factor Contributions to Risk
Source: Venn Analysis, February 2019. Time period: January 2016 - December 2018, monthly.
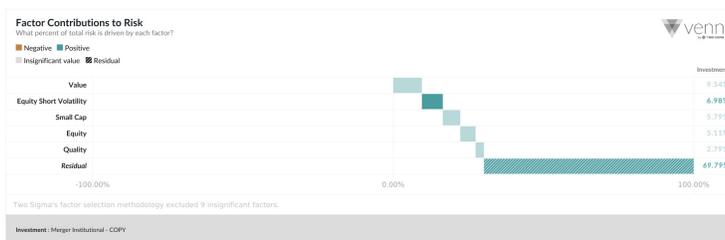
In summary, Venncast estimated that the portfolio is expected to have delivered ~8% (±1.3%) positive returns. Venn expects these returns are coming from

8 These funds fall within the equity category per the following sources: Wells Fargo's Fund Strategy, the DFA U.S. Large Cap Value Fund's Morningstar Category (U.S. Fund Large Value), and the DFA U.S. Small Cap Value Fund's Morningstar Category (U.S. Fund Small Value).
9 These funds fall within the commodity category per each fund's Morningstar Category (Commodities Broad Basket).
10 Venncast does not provide performance estimates for investments with residual risk greater than 40%. As with portfolios with residual risk above that threshold, it is difficult to provide a reasonable Venncast estimate for such investments because less of the investment's risk and return is captured by the Two Sigma Factor Lens.

exposures to the Equity and Small Cap factors, which have both delivered positive performance so far in 2019. Further, the investment-level breakdown indicates that the funds contributing most to that performance are those that provide exposure to those factors in addition to Commodities.

Conclusion

To conclude, Venn recognizes that, although Venncast performance estimates are just that - estimates - they can provide a reasonable method to approximate performance. It may be a helpful tool in understanding current portfolio performance, especially for portfolios with investments that report returns on a less than daily frequency.

Visit Venn today to view your portfolio's Venncast performance estimate.

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