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Wine and Music: Diversification with Investments of Passion

Introduction

Classic cars, stamp collections, art – it is not unusual for high-net-worth individuals to create a sophisticated asset class out of a personal hobby. This study will examine two such "investments of passion," fine wine and music, for portfolio diversification benefits.

Method

Fine wine is represented by the Liv-Ex Fine Wine 100 Index ("LIVX"), and music is represented by the Hipgnosis Songs Fund (LSE: SONG). SONG is a publicly traded company whose securities are backed by royalties to music copyrights owned by the fund. Diversification benefits are measured based on return and risk to each investment.

Wine	Music
• Return: Monthly changes in Liv-ex Fine Wine 100 Index from 7/2001 to 12/2019 • Risk: Variance	• Return: Daily changes in price for SONGS from 7/2018 to 1/2020 • Risk: Variance

Diversification is measured by examining the portfolio Sharpe ratio (S_P), or risk-adjusted returns, by combining each asset with the S&P 500. The portfolio Sharpe ratio depends on portfolio variance (σ_P^2) which is related to the covariance between the asset and the S&P 500 (ρ_{AB}).

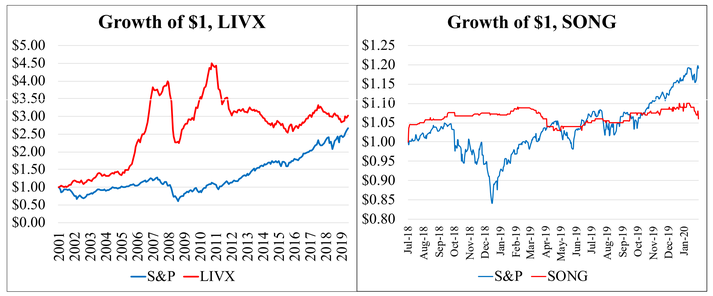
Modern portfolio theory shows that low covariance indicates portfolio diversification potential. The risk free rate is estimated by annualizing returns to one-month Treasure bills from the Fama-French data library.

$$S_P = \frac{R_P - R_f}{\sigma_P}$$

$$\sigma_P^2 = w^2\sigma_A^2 + 2w(1-w)\sigma_A \cdot \sigma_B \cdot \rho_{AB} + (1-w)^2\sigma_B^2$$

Results

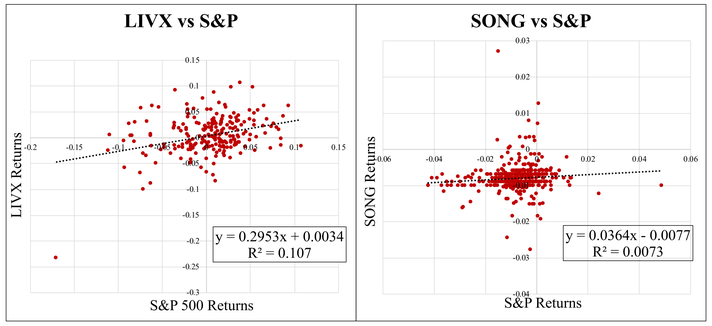
The following graphs show the price action of fine wine and music:



LIVX appears to be much more volatile than the S&P. In 2008, the wine prices crashed after jumping up with the housing bubble. In 2011, the "Bordeaux Bubble" popped after the Chinese government cracked down on corrupt gift-giving that was pervasive during the 2009-2011 bull market.

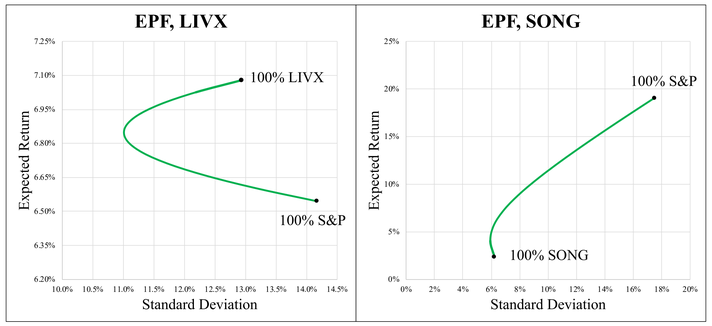
SONG appears to be insulated from the market. The most significant price movement was on day one, with a 3.5% increase. This is nearly 9 standard deviations away from the average daily return over the rest of the sample period. Day one returns are attributed to IPO mispricing and are excluded for the rest of the analysis.

LIVX appears to be much more volatile than the S&P, while SONGS seems to be less so. A regression on excess returns and the S&P 500 gives:



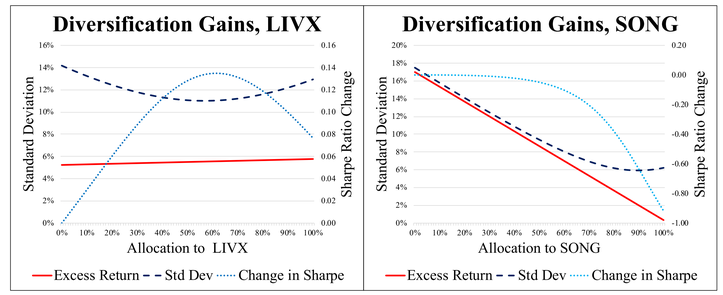
	LIVX	SONG	S&P (LIVX)	S&P (SONG)
E.A.R.	7.1%	2.4%	6.5%	19.1%
σ	12.9%	6.2%	14.2%	17.5%
$\rho_{Asset,S\&P500}$	0.33	0.04	n/a	n/a
CAPM β (R^2)	0.295 (10.7%)	0.036 (0.73%)	n/a	n/a

NOTE: SONG β fails to test for statistical significance at a 95% confidence level.



Both Efficient Portfolio Frontiers potential diversification benefits from including either wine or music in a diversified portfolio. Note the inversion from a typical frontier for LIVX; the S&P is on the bottom right with LIVX on the top left. This means that LIVX dominates the S&P on a risk-adjusted basis if an investor had to choose one or the other. This is due to the subnormal performance of the S&P over the sample period. If the long-term average S&P performance is used, 9.8% EAR, the EPF reverts to normal.

The following graphs demonstrate diversification benefits by measuring the change in the Sharpe ratio as incremental amounts of wine and music are added to the portfolio:



By combining wine and the S&P 500, the Sharpe ratio is maximized when 62% of the portfolio is allocated to LIVX. This seems unrealistic, but is expected due to the subnormal performance of the S&P. When looking at the long-term average performance of the S&P, suggested allocation to LIVX drops to a more reasonable 38%.

By combining music and the S&P 500, the Sharpe ratio is maximized when 5% of the portfolio is allocated to SONG. The increase in overall Sharpe is minimal, indicating that the benefit may not even overcome rebalancing transaction costs. However, the suggested allocation is heavily dependent on the risk-free rate. The model includes a 2.06% risk-free rate, but if it were to drop to 1.5%, for example, suggested allocation to SONG would be 23%.

Conclusion

Investments of passion can provide more than just personal benefits when included in a diversified portfolio. Depending on prevailing market conditions, such as returns in the equity markets and the risk-free rate, an investor looking to maximize his or her risk-adjusted returns may benefit from an allocation to wine or music.

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