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Is wine a good choice for investment?

Elie Bouri[a,*], Rangan Gupta[b], Wing-Keung Wong[c,d,e], Zhenzhen Zhu[f]

[a] USEK Business School, Holy Spirit University of Kaslik, Lebanon
[b] Department of Economics, University of Pretoria, South Africa
[c] Department of Finance, Asia University, Taiwan
[d] Department of Economics and Finance, Hang Seng Management College, Hong Kong
[e] Department of Economics, Lingnan University, Hong Kong
[f] School of Statistics, Shandong University of Finance and Economics, China

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ABSTRACT

We extend our understanding on the role of wine investment within a portfolio of different assets (US/UK equities, bonds, gold, and housing) by considering a rich methodology based, among others, on the mean-variance and stochastic-dominance approaches. The main findings suggest that wine is the best investment among all individual assets under study, and investors prefer to invest in with-wine portfolios than without-wine portfolios to gain higher expected utility when short selling is not allowed. However, investors are indifferent between portfolios with and without wine when short-selling is allowed. In addition, with-wine portfolios generally either dominate individual assets or investors are indifferent in choosing between individual assets. Interestingly, the with-wine portfolios first-order stochastically dominate housing in both the long-only and short-allowed strategies, pointing towards market inefficiency. Finally, we reveal that investors prefer the low-risk with-wine portfolios to the equal-weighted portfolios but are indifferent between the high-risk with-wine portfolios and the naïve portfolios for both long-only and short-allowed strategies. Our findings can be used by investors in their investment processes, and reveal the possibility of earning abnormal returns when wine is included in the investment.

1. Introduction

The potential role wine investment[1] might play in equity and bond portfolios has long attracted the attention of the financial media, investors, and scholars, who are always looking for alternative investment assets uncorrelated with stocks and bonds. Wines have been found to have diversification benefits (Sanning et al., 2008 and Fogarty, 2010; Kourtis et al., 2012; Bouri, 2015; Aytaç et al., 2016), due to the uniqueness of the factors that affect their price formation. These include weather, year of vintage, grape composition, acidity, reputation, aging, and production technology (Hadj et al., 2008; Roma et al., 2013; Storchmann, 2012). However, Fogarty and Sadler (2014) and Dimson et al. (2015) argue that the presence of fine wines in a portfolio leads to trivial diversification benefits. Importantly, most of the prior studies have assumed that wine returns are normally distributed, and thus built their findings on the first and second moments of the return distribution, as in the mean/variance paradigm of Markowitz (1952).

* Corresponding author.
E-mail addresses: eliebouri@usek.edu.lb (E. Bouri), rangan.gupta@up.ac.za (R. Gupta), wong@asia.edu.tw (W.-K. Wong).

[1] The development of the UK-based London International Vintners Exchange (Live-ex) has played a significant role in making wine investment more accessible to individual investors and in enhancing the liquidity and transparency of the wine market. It has also paved the way for the industrialization of the art of investing in fine wines, given that several Liv-ex indices serve as leading wine benchmarks for numerous wine investment funds (Coffman and Nance, 2009).

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They have also specified the investors' risk preference or utility functions explicitly, i.e., by assuming a quadratic utility function, where investors exhibit increasing relative risk aversion. Given that the returns on fine wines are not normally distributed (e.g., Masset and Henderson, 2010; Bouri, 2014, 2015), the importance of considering the entire return distribution – rather than restricting the analysis to just the trade-off between risk and return – has emerged. The fact that wine returns are possibly skewed and leptokurtic also suggests that investors may place utility on higher moments and that the investors' utility function is not quadratic but somewhat sophisticated. In this sense, investors prefer to have downside protection while they look for a better return.

To address these shortcomings in the wine literature, we constructed optimal portfolios with and without fine wines, and examined their performance using a stochastic dominance (SD) approach. We considered a wide variety of assets that included US and UK equities, bonds, gold, and house prices, while most of the prior studies limited their analyses to stocks and bonds. Such an in-depth analysis would extend our existing knowledge on the role wine investment could play in portfolio choice. In particular, employing the non-parametric approach of the SD is new to the wine literature and, importantly, allows us to incorporate information on the entire distribution, rather than focusing just on the first and second moments. Masset and Henderson (2010) look beyond the mean/variance paradigm and take into account the skewness and kurtosis in their examination of the benefits of equity portfolio diversification with fine wines. However, the authors limit their analysis to a parametric method and specify investors' risk preference explicitly. Interestingly, the SD can analyze any return distribution without any restriction and go beyond mean, variance, skewness, and kurtosis to incorporate information on all moments in the distribution. This requires no particular assumption regarding the specific form of investor utility function and employs some general restrictions such as non-satiation and risk aversion.

Overall, our analyses indicate that wine is an optimal investment choice.

2. Literature review

In addition to being affected by demand from emerging markets (Bouri and Azzi, 2013) and global equity prices (Faye et al., 2015), wine prices are affected by the name of the producer, the weather, year of vintage, grape composition, acidity, reputation, aging, and production technology (Hadj et al., 2008; Roma et al., 2013; Storchmann, 2012). Interestingly, the tangibility of fine wines makes it, like real assets, eligible to perform well in inflationary periods, when traditional assets tend to perform poorly (Roseman, 2012). Burton and Jacobsen (2001) show that wine outperforms US bonds and that wine returns are negatively related to stock market rises. Relying on the mean/variance paradigm, Fogarty (2007) points to the benefits resulting from adding wine investment to a portfolio consisting of stocks and bonds. Using the Capital Asset Pricing and the Fama-French three-factor models, Sanning et al. (2008) argue that fine wine can serve as a hedging asset against equity movements, mostly because wine returns have a beta close to zero. Fogarty (2010) indicates that wine investment can still provide a shy diversification benefit, despite wine returns being lower than the returns on standard financial assets. Masset and Weisskop (2010) show the benefits of adding fine wines to a standard portfolio of stocks and bonds, through an analysis of risk and return, while accounting for the effect of the economic downturns of 2001–2003 and 2007–2009. The authors also indicate that market returns on fine wines outperform those on stocks and bonds during stress periods. Masset and Henderson (2010) use data from 1996 to 2007 and highlight the risk-reduction benefits of wine investment diversification. The authors also compute optimal portfolios that include equity, wine, and art, accounting for the four moments of the return distribution. Kourtis et al. (2012) report that fine wines are not only uncorrelated with conventional assets but are favorably taxed. Bouri (2015) provides evidence that wine investment can offer the highly appreciated benefits of portfolio diversification during a time of crisis. Aytaç et al. (2016) indicate that adding wine to equity and bond portfolios makes them more efficient, while adding gold has no significant effect. However, Dimson et al. (2015) show that, for the period 1900–2012, the return on wine investment exceeded those on bonds, art, and stamps, but not that on equities. They also report a positive correlation between wine investment and equities, which could potentially hinder any diversification strategy.

The above concise literature review highlights important issues. First, although the relationship between fine wines and traditional financial assets is shown to be weak or negative in many cases, there is no general consensus about the importance of including wine investment in a portfolio. Second, using correlation coefficients and the asset pricing models cannot explain wine returns correctly (Sanning et al., 2008). Since wine returns depart from normality, any specific assumption about the utility function to describe the investor's preferences is unrealistic. Furthermore, given that investors often have sophisticated preferences, it emerges that there is a need to optimize their decision-making using full information, rather than just the first and second moments. Accordingly, it is very suitable to apply a non-parametric approach like the SD. Against this background, in this paper we applied an SD-based approach on a relatively broader set of assets, to capture the stylistic facts of wine returns. We allowed short selling and examined a multitude of portfolios, which included US and UK equities, bonds, gold, and house prices. By doing so, we undertook a more realistic and practical analysis of wine portfolio choices to market participants who have sophisticated risk preferences.

3. Data and methodology

3.1. Data

Our dataset covers the monthly period of 1990:06 to 2016:04, with the start and end dates being determined by the availability of data on wine prices. Besides wine prices, our dataset includes stock prices, house prices, gold prices, and government bond yields.