

# Portfolio Diversification Benefits of Investing in Stamps

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In recent years, investments in collectibles, such as wine and art, have received increased attention. However, very little research has been done on investments in stamps. This is remarkable, because there are more than 30 million stamp collectors worldwide and there is an active trade in stamp collections, which are sometimes sold for very high prices.<sup>1</sup> One reason for the lack of research is that it is difficult to construct a reliable index of stamp prices. There are millions of different stamps with prices that range from a few pennies to a few million pounds. An additional problem is that the prices of stamps are not only determined by their scarcity, but also by their quality. The value of a rare stamp in excellent condition is much higher than that of the same stamp in poor condition (see Taylor [1983]). This article examines the benefits of investments in stamps to both U.K. and U.S. investors.

We use the Stanley Gibbons 100 index that was introduced by the British stamp dealer of that name in November 2002. We study historical stamp returns and investigate whether it makes sense for investors to add stamps to a stock portfolio. We find that for a British (U.K.) investor the returns on the stamp index are lower than for stock indexes such as the FTSE 100 or the FTSE 350. However, a regression of the excess returns on the stamp index against the excess returns of stock market indexes yields a significantly positive alpha.

This implies that stamps offer diversification possibilities for stock investors. In addition we study returns for American (U.S.) investors. Since the index is denominated in British pounds, an American investor would have a joint investment in stamps and in British pounds. The unhedged returns for an American investor are somewhat higher than the returns on stocks. This is driven by both exchange rate effects and the fact that, in the period under consideration, the American stock indexes performed worse than their British counterparts. The regression of the excess returns on the stamp index shows positive alphas for American investors. It can therefore be concluded that stamps offer diversification possibilities to both British and American investors.

A disadvantage of stamp investments, which is not captured in our regression analysis, is that there are substantial transaction costs associated with buying and selling stamps. Since most auctions charge a round-trip fee of about 20% of the purchase price, investments in stamps only make sense if they are held for longer time periods.

## PREVIOUS LITERATURE ON INVESTMENTS IN COLLECTIBLES

A number of previous articles have studied investments in stamps and other collectibles, such as art and wine. Most studies

on art investments agree that purchases of art are not attractive for pure investment purposes. Baumol [1986] finds that returns on art investments are below the returns on long-term government bonds. Renneboog and Van Houtte [2002] also find that, in a mean-variance framework, art investments are inferior to equity investments. A question that is probably even more interesting is whether it makes sense to add art to an equity portfolio. In other words, does an investment in art lead to diversification benefits? Goetzmann [1993] argues that this is not the case. For the period 1715–1986, he finds a strong correlation between an art index and an index of the London Stock Exchange. He interprets this as evidence that the demand for art increases with the wealth of art collectors. Renneboog and Van Houtte [2002] confirm the results of Goetzmann [1993]. They also find that art yields limited diversification potential.

The findings on wine investments are mixed. An early study by Krasker [1979] on storing wine concludes that wine is not a good investment because the estimated return to investing in wine in the period 1973–1977 was not significantly different from zero. Burton and Jacobsen [2001] conclude that between 1986 and 1996 wine only would have yielded a nominal return of 8%. Therefore they conclude (page 349) that *wine should not be saved, but savored*. However, Sanning, Shaffer, and Sharratt [2006] find that wine returns are above those predicted by the Capital Asset Pricing Model. Furthermore, they conclude that investment-grade wines benefit from low exposure to market risk factors, and therefore offer a valuable dimension of portfolio diversification.

Taylor [1983] uses transaction prices realized in auctions at the Robert A. Siegel Auction Galleries, Inc., of New York for the period January 1963 to June 1977 to study the return on a portfolio of five frequently traded United States stamps. He finds a mean return of 14.5% per year. In a regression in which the excess returns on the stamp portfolio are regressed on the excess returns of a stock market index, he finds that both the alpha and the beta are not significantly different from zero. This would indicate that stamps do not offer significant diversification possibilities for stock investors. These results change, however, when prices from the published Scott catalogue are used instead of auction prices. In that case, alpha becomes positive, indicating possibilities for diversification. Cardell, Kling, and Petry [1995] study auction prices of 43 different American stamps. They find an average nominal return of 7.60% over the period from 1947 to 1988. They also find

that stamp returns are inversely related to systematic factors that drive stock and bond returns. This leads to the conclusion that stamps are a good hedge for stock investments.

## THE SG 100 INDEX

The index for stamp investments that we use is the Stanley Gibbons 100 index. This index is developed by Stanley Gibbons (SG), a large stamp dealer based in the United Kingdom. This company also is responsible for the publication of a large number of different stamp catalogues. The index was launched on October 25, 2002. It is based on actual prices for 100 of the world's most frequently traded stamps. These include items from the three major collecting areas: 1) Great Britain; 2) the British Commonwealth; and 3) "foreign" countries such as China, the United States, Japan, and European countries. The index is weighted toward the most frequently traded and higher value stamps. Each October it is reassessed by Stanley Gibbons. The index is published each month in the *Gibbons Stamp Monthly*, a philatelic magazine published by Stanley Gibbons. Given that Stanley Gibbons is based in the United Kingdom, and that British stamps are the most sought after,<sup>2</sup> the basis for the index is the British pound.

Stanley Gibbons also publishes two other stamp indexes: the GB 30 Rarities Index, which includes scarce stamps of Great Britain, and the British Commonwealth 30 Errors & Rarities Index, which includes scarce Commonwealth stamps. These two indexes are not suitable for our purpose, since they are only updated annually, and were only launched in September 2004.

## METHODOLOGY AND DATA DESCRIPTION

We use the SG 100 index to study whether stamp investments lead to diversification benefits when added to equity investments. Since the index is denominated in British pounds we first look at the returns for a British investor. We calculate returns on stamps and on two British stock indexes, the FTSE 100 and the FTSE 350. Returns for American investors are also studied. For that purpose the returns on the three major American indexes—the S&P 500, the Dow Jones Industrial and the Russell 3000 index—are compared with unhedged returns on the SG 100 index.

The data on the SG 100 index are provided by Stanley Gibbons. The stock returns are acquired from

Datastream. We also need risk-free returns for the British and American markets, which we derive from Datastream; the same source is used for the exchange rates between the U.S. dollar and the British pound. The British risk-free returns are measured as the 1-month U.K. Treasury Bill discount rates. The American risk-free returns are measured as the 1-month U.S. Treasury constant maturities rate.

The next step is to run a Capital Asset Pricing Model regression of the monthly stamp index excess returns on the excess returns of the stock market indexes. The excess returns on the stamp and stock indexes are calculated as the difference between the index returns and the risk-free returns. The regression equation has the following form:

$$(R_{SG100,t} - R_{F,t}) = \alpha + \beta(R_{M,t} - R_{F,t}) + \epsilon_t$$

where  $R_{SG100}$  is the return on the Stanley Gibbons 100 index;  $R_F$  is the risk-free rate and  $R_M$  is the return on the selected stock market index. If the alpha ( $\alpha$ ) from the regression is positive, we can conclude that stamps offer diversification possibilities.

## EMPIRICAL RESULTS

Exhibit 1 includes return statistics for the SG 100 index and the British FTSE 100 and FTSE 350 indexes for the period from November 2002 to November 2006.

As can be seen from Exhibit 1, the nominal returns on the stamp index are lower than the returns on the stock indexes. The average monthly return of the stamp index is only 0.58%, while the average return on the FTSE 100 and FTSE 350 indexes are respectively 1.11% and 1.24%. The stamp returns also are less volatile than the stock returns. The standard deviation of the monthly stamp returns is only 0.77%, compared to 2.94% and 2.98% for the FTSE 100 and FTSE 350, respectively.

Exhibit 2 includes return statistics for the SG 100 index and the three American stock market indexes for the period from November 2002 to November 2006.

As can be seen from this exhibit, the unhedged returns on the stamp index beat those on the three American stock market indexes. This is different from the British results—a difference partly caused by exchange rate fluctuations, since in the period of consideration the British pound went up compared to the U.S. dollar. In addition, the American stock market indexes performed somewhat worse than the British stock market indexes.

The most important question in our study is whether stamps offer diversification possibilities. Exhibit 3 presents the regression results for the Ordinary Least Squares (OLS) regression of the monthly excess stamp index returns on the monthly excess returns on the FTSE 100 and FTSE 350.

The Ljung-Box first-order autocorrelation test shows that there is no significant autocorrelation effect, since all

## EXHIBIT 1

### Stock and Stamp Return Statistics for British Investors

This exhibit presents monthly returns for the stamp index, two British stock indexes, and the British risk-free rates, as measured by the 1-month U.K. treasury bill discount rate.

Index	Mean	Median	Standard deviation	Minimum	Maximum	Number of observations
<b>Raw returns</b>						
Stanley Gibbons 100 Index	0.58	0.25	0.77	0.00	2.78	48
FTSE 100 index	1.11	1.65	2.94	-9.40	9.00	48
FTSE 350 index	1.24	1.47	2.98	-9.10	9.31	48
Risk-free rate	0.36	0.38	0.04	0.28	0.40	48
<b>Excess returns</b>						
Stanley Gibbons 100 Index	0.22	-0.12	0.78	-0.40	2.50	48
FTSE 100 index	0.75	1.31	2.94	-9.73	8.71	48
FTSE 350 index	0.88	1.13	2.98	-9.42	9.01	48

## EXHIBIT 2

### Stock and Stamp Return Statistics for American Investors

This exhibit presents monthly returns for three American indexes and unhedged U.S. dollar returns for the stamp index. The risk-free rate is measured as the 1-month U.S. Treasury constant maturities rate.

Index	Mean	Median	Standard deviation	Minimum	Maximum	Number of observations
<b>Raw returns</b>						
<b>Stanley Gibbons</b>						
100 Index	1.10	1.24	2.62	-4.40	7.96	48
S&P 500	1.02	1.26	2.62	-5.87	8.24	48
<b>Dow Jones</b>						
Industrial	0.89	1.04	2.71	-6.09	7.02	48
Russell 3000	0.97	1.21	2.74	-5.82	8.03	48
Risk-free rate	0.20	0.15	0.13	0.07	0.43	48
<b>Excess returns</b>						
<b>Stanley Gibbons</b>						
100 Index	0.90	1.05	2.64	-4.62	7.88	48
S&P 500	0.83	0.96	2.62	-5.98	8.14	48
<b>Dow Jones</b>						
Industrial	0.69	0.74	2.71	-6.20	6.94	48
Russell 3000	0.78	1.13	2.74	-5.92	7.94	48

the p-values are above 10%. Therefore we can use OLS standard errors in order to compute the t-statistics. Both regressions show that the beta is not significantly different from zero. This is consistent with our expectations that the stamp market is largely uncorrelated with the stock market. More importantly, alphas are significantly positive on the 10% level. Depending on the stock index, the

stamp index achieves monthly returns of 0.229% or 0.237% above those predicted by the Capital Asset Pricing Model. This means that stamps offer diversification possibilities and investing in them can improve the performance of the British investors. In other words, adding stamps to an equity portfolio pushes up the efficient frontier. One disadvantage of stamp investments is

## EXHIBIT 3

### Regression Results for British Investors

This exhibit presents regression estimates for the OLS regression of monthly excess returns on the Stanley Gibbons 100 Index on monthly excess stock index returns. t-statistics are in parentheses. Q(1) denotes the Ljung-Box first-order autocorrelation test, with p-values in parentheses. Asterisks indicate the 10% significance level.

Independent variable	Alpha	Beta	R squared	Number of observations	Q(1)
FTSE 100 excess returns	0.229* (1.95)	-0.014 (-0.36)	0.003	48	2.252 (0.13)
FTSE 350 excess returns	0.237* (1.99)	-0.020 (-0.53)	0.006	48	2.168 (0.14)

the short-selling restrictions on this market. However, it does not present a problem in this case, since the alphas are positive. Therefore it is not optimal for investors to take a short position in stamps.

The same regressions, but for American investors, are repeated in Exhibit 4.

The results for the American investors are somewhat stronger than those for British investors. The alphas all are significantly positive at the 5% level and range from 0.835% to 0.850%, meaning that there are also diversification possibilities for American investors that invest in a British stamp portfolio. The betas are not significantly different from zero.

Exhibit 5 shows how adding stamps to a broad portfolio of American stocks, in this case represented by the Russell 3000 Index, changes the Capital Market Line.

The new Capital Market Line lies above the old Capital Market Line, showing that investing in stamps can considerably reduce risk and improve returns of the investment portfolio.

## CONCLUSION

This study shows that stamp investments offer diversification possibilities for both British and American investors. However, as with other collectibles, the buying

and selling of stamps entails a fairly large amount of transaction costs. Most auctions charge a fee of about 20% divided between buyers and sellers. In some cases, the entire fee is charged to the buyer; in others, to the seller. The most common method is to charge 10% to the buyer in the form of a mark-up on the hammered-down amount and to charge 10% of the proceeds to the seller. Most auction houses also charge a small fixed cost per lot to the buyer, the seller, or both. These transaction costs must be taken into account before the potential diversification benefits can be judged. Given the smaller importance of transaction costs for long-term investors, stamps are probably more suitable for this category of investors.

## ENDNOTES

The authors thank Michael Hall of Stanley Gibbons for the data on the SG 100 index as well providing additional information on the index. In addition, they thank Alan Goodacre for his helpful comments and Vivien Alexander for her editing assistance. The usual disclaimer applies.

<sup>1</sup>See "FT Money: The Stamp of Approval," *Financial Times*, October 2, 2004. According to Huang [2001], many Chinese investors trade stamps as securities. Therefore, the stamp market in China is known as "The Second Stock Market."

<sup>2</sup>See e.g., "They've Got It Licked: A First-Class Collection," *The Independent*, October 21, 2005.

## EXHIBIT 4

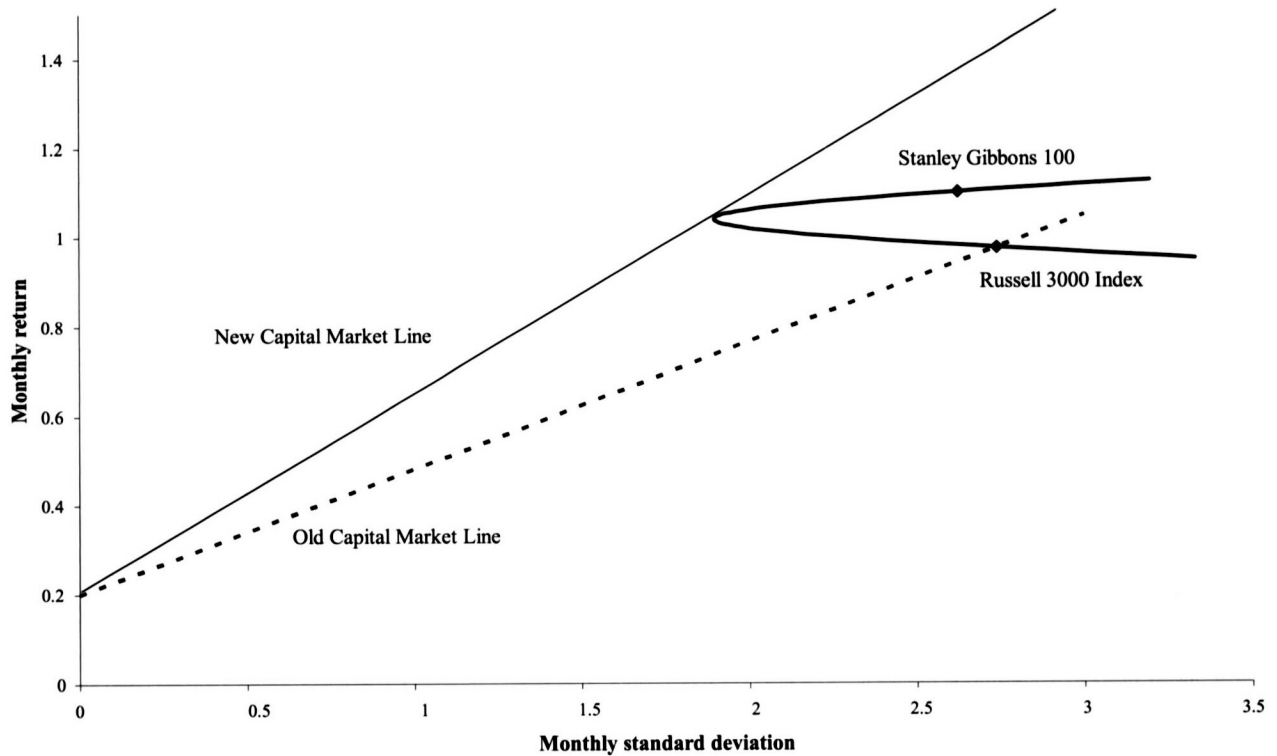
### Regression Results for American Investors

This exhibit presents regression estimates for the OLS regression of monthly excess on Stanley Gibbons 100 Index on monthly excess stock index returns. t-statistics are in parenthesis. Q(1) denotes the Ljung-Box first-order autocorrelation test, with p-values in parentheses. Asterisks indicate significance levels: \* -10%, \*\* -5%.

Independent variable	Alpha	Beta	R squared	Number of observations	Q(1)
S&P 500 index	0.835** (2.07)	0.080 (0.54)	0.006	48	0.033 (0.86)
Dow Jones Industrial	0.850** (2.15)	0.074 (0.52)	0.006	48	0.036 (0.85)
Russell 3000 index	0.843** (2.11)	0.075 (0.53)	0.006	48	0.030 (0.86)

## EXHIBIT 5

### The Capital Market Line With and Without Stamp Investments



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## OPTIMIZING BENCHMARK-BASED PORTFOLIOS WITH HEDGE FUNDS 35

IVILINA POPOVA, DAVID P. MORTON, ELMIRA POPOVA, AND JOT YAU

Hedge funds typically have non-normal return distributions marked by significant positive or negative skewness and high kurtosis. Mean-variance optimization models ignore these higher moments of the return distribution. This article introduces a new stochastic programming model which incorporates Monte Carlo simulation and optimization to examine the effects on the optimal allocation to hedge funds given benchmark related investment objectives such as expected shortfall and semi-variance. The results show that a substantial allocation—approximately 20% to hedge funds is justified. Specifically, the return distributions of portfolios constructed using the stochastic programming model skew to the right relative to those of the optimal mean-variance portfolios, resulting in higher Sortino ratios.

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