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Predicting the equity premium with the demand for gold coins and bars

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ABSTRACT

In this paper, we propose novel predictor variables for forecasting stock market returns. We investigate the predictive power of the demand for gold coins and bars as a proxy for the risk premium consistent with the safe haven property of gold. The gold demand variables reflect the behaviour of retail investors and thus also represent a new class of predictors. Our analysis shows that the demand for gold is positively correlated with future stock returns and enhances the predictive power of the dividend yield and other variables.

1. Introduction

There is a large literature on the predictability of the equity premium. Common predictor variables are the dividend yield (e.g. Fama and French, 1988) and other valuation ratios as well as macroeconomic variables such as interest rates (see e.g. Welch and Goyal, 2008, for a list of variables). Most papers focus on post-1945 data, and the debate on whether or not stock market returns are

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predictable is ongoing (e.g. Campbell and Thompson, 2008; Cochrane, 2008; Welch and Goyal, 2008). Recent studies either focus on the improvement of out-of-sample performance (Rapach et al., 2010; Johannes et al., 2014), the study of regional or international markets (Korniotis and Kumar, 2013; Rapach et al., 2013), or new predictors that have not been studied before. Bakshi et al. (2012) suggest the Baltic Dry Index as a proxy for real economic activity and Cooper and Priestley (2013) propose the world's capital to output ratio as a predictor. Our paper contributes to this latter branch of the literature.

A variable will add to predictability if it captures time variation in risk premia or expectations of future dividend growth rates. In this paper, we propose a new predictive variable intended to capture risk premia, the demand for physical gold. We expect an increased demand for gold coins and bars to indicate a higher risk premium. Our expectation is based on the safe haven property of gold (Baur and McDermott, 2010; Coudert and Raymond-Feingold, 2011), which implies that increased demand for gold is correlated with higher levels of risk or risk aversion.

Despite the fact that the demand for gold seems to be an almost natural candidate as a proxy for the risk premium, there are no studies that use gold demand figures in attempts to predict stock market returns. The same applies to the literature on the safe haven effect of gold, which does not use actual gold demand but prices to test for its existence. One reason may be that the global aggregate demand for coins and bars is only available at a quarterly frequency from 2002.

We use the quarterly coin and bar demand figures as well as two proxies that are available from the 1980s at a monthly frequency: sales of American Eagle gold coins and spreads between quoted prices of gold bars and the official gold fixing price. Since there exists a large variety of gold coins, Eagle gold coins can only serve as a proxy for the general coin demand, but the sales data are available over a longer period and at a higher frequency. The use of the price spread is motivated by the observation that during periods of increased physical gold demand, bar and coin dealers are often not able to fully satisfy the demand leading to a situation in which coins or bars are sold at a premium.[1]

The empirical analysis confirms our hypothesis that estimates of the demand for gold enhance predictions of expected equity returns, i.e. the larger the gold demand, the larger the expected equity return.

The remainder of the paper is structured as follows. Section 2 describes the data, with a focus on the gold demand series. Section 3 presents the empirical results and Section 4 summarizes the findings and concludes.

2. Data and descriptive analysis

Gold bar spreads are based on the official (London AM) price of gold bullion in US dollar per Troy ounce and gold bar prices (midpoint of bid and ask for 1 kg) from UBS Zurich in Swiss francs converted into US dollars. All data are from Datastream and end in June 2014. The gold bar quotes are available from January 1983. In order to select series that are synchronized, we enquired at Datastream and matched the series accordingly.[2] We then define the spread as the ratio of the gold bar price to the gold fixing, both in US dollars, minus one. Datastream also provides prices for coins, but the ratios of the gold coin prices to the gold fixing are significantly more volatile than the bar spread and appear to contain a relatively large number of outliers. For example, the daily spread of Gold-Vreneli coins has a standard deviation of 6.46% compared to 0.72% for gold bars.

Global aggregate demand for coins and bars (in tonnes) is retrieved from the publication "Gold Demand Trends", available on the web pages of the World Gold Council. Data on sales of American

[1] The article "Germans lead gold rush frenzy" (Financial Times, 18 May 2010) describes coin shortages and coin spreads that have risen from two to eight per cent. A recent episode is described in a World Gold Council Media Alert (18 April 2013): "We are already seeing shortages for bars and coins in Dubai, whilst premiums in Mumbai are at $26/oz and $6 in Shanghai, indicating that buyers are willing to pay more than current spot prices for the metal".

[2] The Datastream code for gold bar prices is SFGOLDB; the code for the official London AM gold price series is GOLDBLN. For the Swiss franc/USD exchange rate, we use TDCHFSP from its initiation in 1989 and U$SFFR2 for the pre-1989 period.