Which is the safe haven for emerging stock markets, gold or the US dollar?

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ABSTRACT

This paper examines whether gold or the US dollar is a safe haven for emerging stocks. By calculating the low-high tail dependence between markets via copulas and the downside risk gains of portfolios, we find that both gold and the US dollar can serve as a safe haven for emerging stocks; that the US dollar is better than gold in most cases, while its superiority in hedging infinitely extreme risks is weakened in the subsample of global financial crisis and the out-of-sample; and that the downside risk gains offered by the US dollar for China and Thailand are very attractive.

1. Introduction

Emerging economies are commodity-dependent and have become increasingly integrated with the rest of the world in recent decades. With substantial fluctuations of commodity prices, increased financial uncertainty, and an ongoing slowdown in the world economy, emerging stock markets are exposed to multiple global shocks. Managing the risks, especially during extreme market conditions, has become urgent. The gold market is traditionally regarded as a sound place of safety against macroeconomic risk (e.g., Erb and Harvey, 2006; Gorton and Rouwenhorst, 2006; Pukthuanthong and Roll, 2011; Batten et al., 2013; Reboredo, 2013). However, this conclusion is not widely reflected by some recent studies on stock markets, especially on emerging stock markets.

Following the rapid financialization of commodities, co-movements between commodity and stock markets are found to be intensified (e.g., Tang and Xiong, 2012; Delatte and Lopez, 2013; Adams and Glück, 2015). As for one particular commodity, gold, Batten et al. (2015) point out that its outstanding over-the-counter (OTC) derivatives account for one fifth of all commodity derivatives in terms of the gross figure in 2013. Also, Bekiros et al. (2017) conclude that the significantly eased investments in gold make gold assets behave more and more like stocks. Regarding emerging stock markets, most studies find that gold cannot serve as a safe haven or is only a weak safe haven (e.g., Baur and McDermott, 2010; Beckmann et al., 2015; Bekiros et al., 2017). These studies highlight the need for alternative safe haven assets for emerging stocks. Given the recent slowdown of emerging economies together with the slump in world commodity prices while an appreciation of the US dollar, we are motivated to expect that the US dollar is a better safe haven asset for emerging stock markets.

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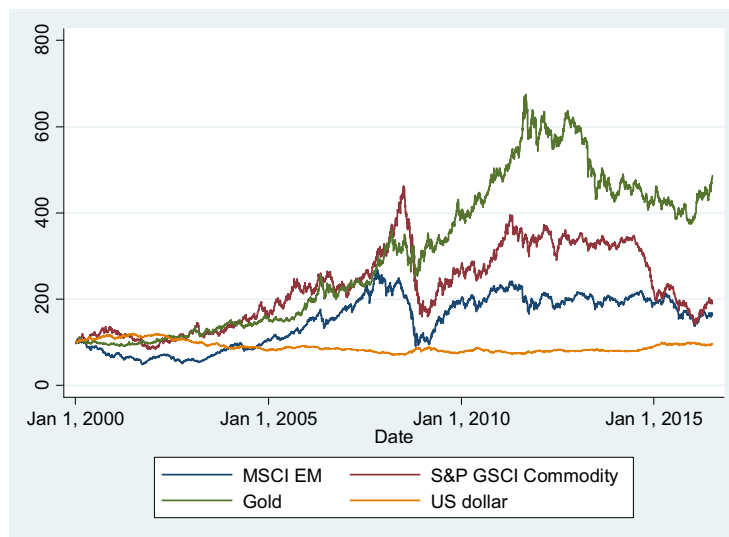
Fig. 1. The price trends of MSCI Emerging market index, Standard & Pool GSCI Commodity index, gold and the US dollar. *Note.* The indices in January 4, 2000 are normalized to 100.

The preceding discussion can be intuitively identified in Fig. 1. In addition to the close co-movements of the emerging stock market index with the commodity index, similar price trends between the emerging stock market index and the world gold spot price are also observed. In contrast to the volatile prices of emerging stocks, commodities and gold, the evolution of the US dollar value is considerably stable—in particular, it slightly increased during the 2001 high-tech bubble collapse and the 2008 global financial crisis. The US dollar value has risen more significantly since 2014, when the emerging stock market index began to slide downward.[1] However, these price trends could not fully exclude the possibility of gold as a safe haven, especially during the global financial crisis, given some inconsistencies between the world gold spot price and the emerging stock index price at the end of 2008 and 2011. Thus, this paper rigorously tests the following questions. Is gold a safe haven at least during some periods? If gold is not a safe haven asset, is the US dollar the better safe haven for emerging stock markets?

According to the definition used in current studies (e.g., Baur and Lucey, 2010; Baur and McDermott, 2010; Reboredo, 2013; Bekiros et al., 2017), the role of an asset as a safe haven with respect to another asset depends on the link between the two assets in times of extreme market movements. If one asset is unrelated or negatively related to the other asset under extreme market circumstances, then the safe haven property is verified. Here, independence and a negative relationship imply a weak and strong safe haven property, respectively. From this viewpoint, accurately modeling market dependence in extreme situations is crucial. In this respect, copulas are known to be an advantageous tool, and lower tail dependence is a measure usually used to determine the safe haven property. However, such an analytical method is inadequate due to the following limitations. First, as the commonly used copulas only capture extreme price movements in tandem, the lower tail dependence of these copulas can only imply patterns of an extremely small value for one asset together with an extremely small value for another asset. Given that the lower tail dependence is a non-zero probability of observing the extreme price co-movements, it can at most show that, in times of extreme events, the two assets are uncorrelated (i.e. the value of lower tail dependence equals to zero), but cannot show that these two assets are negatively correlated. In this way, patterns of an extremely small value for one asset together with an extremely large value for another asset cannot be detected, and the strong safe haven property fails to be verified. Second, Reboredo and Ugolini (2015) suggest that the tail dependence of copulas offers information about extreme risks but at the limit, given that tail dependence is obtained by making the confidence levels infinitely close to one or zero. From this viewpoint, tail dependence only implies the ability to hedge infinitely extreme risks, but cannot indicate the ability to hedge extreme risks at various confidence levels.

To overcome the preceding limitations, our paper contributes to the literature by rotating the commonly used copulas to capture the low (in emerging stock)-high (in gold/the US dollar) tail dependence (such opposite extreme price movements are of interest to investors holding long positions in emerging stocks), and then the strong safe haven property of gold/the US dollar can be detected. Compared with modeling the dependence structure between emerging stock returns and negative gold/US dollar returns, such a method is more flexible in real risk management practice. Simultaneously, based on the dependence structure implied by the optimal copula function, the downside risk gains provided by gold/US dollars for emerging stocks are calculated at various confidence levels, which are regarded as another dimension for detecting the safe haven property. In this way, the hedging ability of gold/the US dollar is more comprehensively examined, and direct implications for risk management are provided.

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[1] In Fig. 1, the U.S. dollar index is a measure of the value of the US dollar relative to the value of currencies of the majority of the U.S.'s most significant trading partners (including the Euro, Japanese yen, Canadian dollar, British pound, Swedish krona and Swiss franc). This index is similar to other trade-weighted indices, and the Euro holds the most weight, followed by the Japanese yen.