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## Identifying safe haven assets for equity investors through an analysis of the stability of shock transmission



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### ABSTRACT

Our analysis takes the perspective of an equity fund manager who seeks a potential safe haven asset to protect her portfolio during market downturns. We employ a regime-switching framework, within which we separate common and idiosyncratic shocks, to assess the suitability of gold, 10-year and 1-year U.S. Treasury bonds. We find evidence in favour of choosing either gold or the longer-dated bond as our safe haven asset. Both deliver risk reduction benefits as equity markets plunge. In contrast, the 1-year bond is not suitable as its vulnerability to contagious idiosyncratic shocks more than offsets its ability to hedge against common risk factors.

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## 1. Introduction

As financial asset prices plunged in the midst of the recent financial crisis, the subject of 'safe haven assets' once again came into sharp focus in the minds of investors and financial commentators alike.

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Safe haven assets are essentially risk diversifiers that are held to improve the risk–return tradeoff of asset portfolios in times of market turbulence. Their role in the portfolio is to alleviate the effects of an adverse shock to the main asset class held by the fund manager. The most-sought-after safe asset would exhibit negative correlation during bear market episodes and positive correlation during bull markets.

There are several definitions of a safe haven asset in the existing literature.<sup>1</sup> A broad definition is an asset with low market risk and high liquidity that is sought when investors become nervous of market losses. This is similar to the definition employed by [Kaul and Sapp \(2006\)](#) where a safe haven is any asset that investors are drawn to in uncertain times. A more easily quantifiable metric comes from [Baur and McDermott \(2010\)](#) and [Baur and Lucey \(2010\)](#) who define a safe haven as one that has a zero or negative correlation with the risky portfolio during market downturns. Building on these insights, we propose a more stringent definition that requires both the first- and second-order moments of the candidate safe haven asset to be insulated from negative shocks in another market.

Our empirical analysis employs a regime-switching framework and takes the perspective of an equity fund manager who seeks to identify potential safe haven assets to protect her portfolio. [Chan et al. \(2011\)](#) also analyse asset market linkages using a regime-switching methodology, focusing on the changing relationships of assets from three different classes between two regimes. Our aim is similar but we adopt a model to facilitate a much finer disaggregation of the risk sources by decomposing asset returns into common and idiosyncratic factors. This is particularly useful here as an equity investor who takes a long position in a safe haven asset is exposing themselves to a common shock as well as idiosyncratic shocks. As all three shocks are allowed to transit independently between two regimes, it yields eight distinct regimes and allows us to present a richer analysis of asset relationships across different asset market conditions. The stability of the transmission of both common and idiosyncratic shocks across regimes is analysed within a unified framework. To complete the analysis, we assess the relative importance of common and idiosyncratic shocks in determining asset return comovements. We investigate the joint behaviour of equity with three potential safe haven assets, namely gold, long-term U.S. Treasury bonds and a 1-year Treasury bill.

The choice of our candidate safe haven assets stems from a trawl of the extant literature, which is reviewed in the next section. Much of the early literature, e.g. [Fleming et al. \(1998\)](#), focused on the stock–bond relationship and the findings are generally in favour of government bonds providing the equity investor with a ‘safe’ alternative in times of crisis. A more recent strand of the literature has turned the attention towards gold, e.g. [Baur and McDermott \(2010\)](#) and [Baur and Lucey \(2010\)](#). Much of this has been sparked by the outstanding performance of gold immediately prior to and during the most recent financial crisis of 2007–2009. Indeed, headlines in the popular media seem to have already conferred safe haven status on gold, e.g. in 2008, the *Financial Times*<sup>2</sup> stated “Gold set to cement safe haven status” while in 2011, *CNBC*<sup>3</sup> asked “Is gold the only safe haven investment left?”

Thus, against this backdrop, we re-examine this issue with an aim to identify which of these potential safe haven candidates actually offers the best protection against adverse asset price movements to an equity investor. The rest of the paper is organised as follows. Section 2 reviews the relevant literature on the stock–bond and stock–gold relationships. Section 3 outlines the econometric model used and describes the data. Section 4 reports our empirical findings, while our concluding remarks are contained in Section 5.

## 2. Literature review

### 2.1. The stock–bond relationship

Much of the early literature on safe haven assets concentrates on the stock–bond relationship. [Fleming et al., 1998](#) and [Scruggs and Glabadanidis \(2003\)](#) find that the bond market variance is

<sup>1</sup> [McCauley and McGuire \(2009\)](#) compile a number of these definitions.

<sup>2</sup> Available at: <http://www.ft.com/intl/cms/s/0/9d002228-8eb9-11dd-946c-0000779fd18c.html>

<sup>3</sup> Available at: <http://www.cnbc.com/id/44193266>

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