



Research Paper

**Safe Havens in Uncertain Conditions: Examining Risk
Transmission Among Bitcoin, Gold, Dollar, and Fixed Income
Funds in Iran in the Presence of Geopolitical Risk-TVP-VAR
Model Approach¹**

Vahid Omid², Negin Maghsoudi³

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INTRODUCTION

Today, with the emergence of numerous uncertainties, investments by individuals and economic actors have become associated with increased risks. In these circumstances, portfolio formation becomes essential to mitigate potential losses. Moreover, investment decision-making and asset selection for portfolio construction present significant challenges. Consequently, extensive research has been conducted to identify and introduce safe-haven assets. These studies have yielded varying results, with gold, dollars, cryptocurrencies, and stocks identified as potential safe havens.

Reasons for choosing gold as a safe-haven asset include its status as a hedge against stocks and its role in risk mitigation within this market (Hosseinzadeh, 2019; Shahzad et al; 2020). Conversely, Mukoni et al. (2022) do not consider gold and

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2. Assistant Professor, Department on Economics and Administrative Sciences, Qom University, Qom, Iran.
Corresponding Author. Email: V.omidi@Qom.ac.ir.

3. M.A. Student, Department on Economics and Administrative Sciences, Qom University, Qom, Iran.
Email:Neginmaghsoudi91@gmail.com

digital currencies as strong safe-haven assets against the uncertainty resulting from the COVID-19 pandemic. Additionally, Shahzad et al. (2019) found that gold's safe-haven role varies over time. Currency market fluctuations have shown similarities to gold returns (Khojasteh et al; 2022), and due to the moderate positive correlation between gold and the dollar, gold is perceived as a hedge for this asset (Ruberto, 2013).

Bitcoin is chosen as a safe-haven asset due to its role as a weaker risk hedge compared to gold, making it suitable for some countries' stock indices, including Canada. Procumpai and Stappermote (2023) introduce Bitcoin as a weak safe-haven asset against stocks, characterized by near-zero correlation and portfolio diversification.

Regarding stocks as assets, Meshir et al. (2021) note that during the global COVID-19 crisis, investors shifted towards more conservative portfolios comprising stocks, insurance, gold, bank deposits, and mutual funds (Vohra et al; 2022). Furthermore, currency assets have been identified as strong safe-haven assets for the Tehran Stock Exchange (Amiri et al; 2023).

The purpose of this study is to examine safe-haven assets, such as gold, Bitcoin, dollars, and the overall stock market index, under uncertain conditions and to analyze their risk transfer capabilities in the presence and absence of geopolitical risks.

METHODOLOGY

In this research, the Time-Varying Parameter Vector Autoregression (TVP-VAR) model has been employed. The distinguishing feature of this model is its treatment of parameters as time-varying, which makes it preferable to standard Vector Autoregression (VAR) models. Among the TVP-VAR models, the R² Connectedness approach was selected due to its ability to differentiate between immediate and delayed effects. This allows for the clarification of how a shock propagates through the network, both immediately and over time. Consequently, more informed recommendations can be provided to investors and policymakers.

FINDINGS AND DISCUSSION

The estimations using the TVP-VAR approach were conducted using R software. The optimal lag of 2 was determined using the AIC, SC, and HQ criteria. Subsequently, in the immediate state, the assets with the greatest influence on other assets were



identified in the following order: gold, the overall stock market index, the dollar, and Bitcoin. Furthermore, in this state, the most susceptible assets to influences from others were gold, Bitcoin, the dollar, and the overall stock market index, respectively. In the immediate state, the assets with the greatest influence on geopolitical risk were, in order: the overall stock market index, gold, the dollar, and Bitcoin. Additionally, the assets most susceptible to geopolitical risk were, in order: gold, the overall stock market index, the dollar, and Bitcoin.

In the delayed state, the assets with the greatest influence on, and susceptibility to, other assets were, in order: gold, Bitcoin, the overall stock market index, and the dollar. In this state, the assets with the greatest influence on, and susceptibility to, geopolitical risk were, respectively: gold, the overall stock market index, the dollar, and Bitcoin.

CONCLUSION

In this study, the TVP-VAR method was employed over the period from May 11, 2021, to July 29, 2023, to: 1) investigate safe-haven assets under economic uncertainty; 2) rank the most influential and susceptible assets among others; and 3) rank the most influential and susceptible assets to and from geopolitical risk.

The research results indicate that in all three states—immediate, delayed, and overall—gold has been the most susceptible asset. When a shock is applied to the network and immediately transmitted to the portfolio, gold exhibits the highest susceptibility among other assets. Moreover, in both immediate and delayed states, the most influential assets are, in order: gold, Bitcoin, the overall stock market index, and the dollar. In the overall state, the most influential assets are the dollar, gold, the overall stock market index, and Bitcoin. The ranking of influential assets from this perspective is crucial. If investors lack the financial capacity to invest in gold, alternative options are suggested.

Based on the obtained results, the following recommendations can be made for investors and policymakers:

- Gold is considered a safe-haven asset in this study. Subsequently, Bitcoin, the overall stock market index, and the dollar can be introduced as safe-haven assets after gold. Therefore, considering that gold has been the most influential asset in both immediate and delayed states, it is advisable for investors to consider gold as a strong safe-haven asset.



- If investors lack the financial capacity to acquire gold, investment in Bitcoin, the overall stock market index, and the dollar is recommended.

Keywords: Safe-haven Assets, Risk Transfer, Uncertainty, Geopolitical Risk, TVP-VAR Model.

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