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"Static and Dynamic Connectedness between Cryptocurrency Uncertainty Index and Financial Markets"

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Static and Dynamic Connectedness between Cryptocurrency Uncertainty Index and Financial Markets.

Abstract:

This study analyzes the dynamic connectedness and volatility spillover effects between cryptocurrency uncertainty indices, significant cryptocurrencies, precious metals and exchange rates of Rupee against cryptocurrencies in Pakistan for the period 2015 to 2023, a TVP-VAR framework was used. These are the 9 variables analyzed under 4 asset categories: UCRY Policy and Price uncertainty indices, Bitcoin and Ethereum, gold and silver, and PKR exchange rates against USD, CNY and GBP. The study measures static and dynamic connectedness, spillovers and net transmitter-receiver roles by applying Generalized Forecast Error Variance Decompositions (GFEVD). Overall, the cross-market integration level, measured by the Total Connectedness Index (TCI) using all samples, is around 45%. The UCRY Policy index reveals itself as the most persistent net volatility transmitter, as regulatory uncertainty in the crypto world spreads to traditional asset markets. Bitcoin and Ethereum show a regime dependent response, picking up volatility when it came in with the crypto boom-bust from 2017-2018, but damping it with the March 2020 shock of COVID. Volatility continues to cling to gold, keeping it safe and sound, while PKR exchange rates continue to be consistent net buyers and Pakistan's structural vulnerability to external shocks. The level of dynamic connectedness rises significantly when the crisis hits, reaching its highest point at 65-70% during the COVID-19 crisis and remaining high structurally after 2020. Results are consistent over different lags, forecast horizons and sub-sample analyses. This research is one of the first pioneer studies to integrate uncertainty measures of cryptocurrencies along with traditional assets in an emerging market scenario, providing helpful guidance to the policy makers, portfolio managers and regulators in financial markets who are concerned with risk management and financial stability in Pakistan.

Keywords: Crypto, Bitcoin, Ethereum, Precious Metals, Gold, Silver, Exchange Rates, Volatility Spillovers, Dynamic Connectedness, TVP-VAR, Systemic Risk, Emerging Markets, Pakistan, Portfolio Diversification, Risk Transmission, Financial Stability, Safe-Haven Assets, Cross-Market Interdependencies

JEL Classification: G10, G11, G15, G17, C32, F31, E44

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