ABSTRACT
HEDGING AND SAFE-HAVEN AMID HEIGTHENED UNCERTAINTY:
QUANTILE ANALYSIS OF PRE-COVID, POST-COVID AND RUSSIA-
UKRAINE WAR PERIOD

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The magnitudes of US economic policy uncertainty (USEPU), geopolitical risk (GPR), global financial uncertainty (GFU), trade policy uncertainty (TPU), and the implied volatility (VIX) index increase during COVID-19 pandemic and the Russia-Ukraine war in 2022. Previous studies have neglected individual and collective impacts of these indices on various asset classes during severe economic downturns. This study aims at examining hedging and safe-haven properties of commodities (gold, oil), equities (S&P 500, S&P US REIT), foreign exchange rates (Great Britain Pound/GBP, Euro/EUR, Japanese Yen/JPY, Chinese Yuan/CNY), and cryptocurrencies (Bitcoin/BTC, Ripple/XRP) against the indices. The analysis covers pre-covid (October 1, 2013, to March 10, 2020), post-covid (March 11, 2020, to February 23, 2022), and Russia-Ukraine war (February 24, 2022, to January 6, 2023) period. OLS results reveal significant effects of USEPU, GPR, GFU, and TPU on logarithm first difference of asset returns. Quantile regression results show consistent positive hedging relationships between specific asset classes and specific indices. Oil and JPY are safe haven assets against USEPU, while CNY, BTC, and XRP are against GPR. The quantile connectedness results show increased connectedness during bearish and bullish markets, as well as low volatility transmission from asset returns to uncertainty measures, implying a diversification of assets Gold, oil, equities, foreign exchange rates, and cryptocurrencies all offer potential diversification opportunities during normal periods. Overall, this study demonstrates the importance of uncertainty factors in determining asset returns, during heightened uncertainty, such as the post-covid and Russia-Ukraine war. The findings of the study are critical for portfolio optimization and risk management. It reveals the propagation of tail risk in the portfolio system and suggests reconsidering safe-haven assets during market downturns. Future research should look into spillovers in different assets using quantile regression and the quantile system of connectedness, with VIX and GFU combining as a promising financial uncertainty proxy.

Keywords: hedging properties, safe-haven properties, uncertainty, spillover, OLS regression, quantile regression, quantile connectedness.

ABSTRAK
HEDGING DAN SAFE-HAVEN DITENGAH PENINGKATAN
KETIDAKPASTIAN: ANALISIS KUANTIL PADA PERIODE PRA-
COVID, PASCA-COVID, DAN PERANG RUSIA-UKRAINA

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Selama pandemi COVID-19 dan konflik Rusia-Ukraina tahun 2022, besaran indeks ketidakpastian kebijakan AS (USEPU), risiko geopolitik (GPR), ketidakpastian keuangan global (GFU), ketidakpastian kebijakan perdagangan (TPU), dan indeks volatilitas CBOE (VIX) mengalami peningkatan. Penelitian terdahulu tidak membahas dampak individu serta kolektif kelima indeks tersebut terhadap beragam kategori aset selama perlambatan ekonomi. Penelitian ini bertujuan menguji sifat hedging dan safe-haven aset komoditas (emas/GOLD, minyak bumi/OIL), keuangan (S&P500 dan S&P US REIT), nilai tukar mata uang asing (Pound Inggris/GBP, Euro/EUR, Yen Jepang/JPY, Yuan Tiongkok/CNY, dan cryptocurrency (Bitcoin/BTC, Ripple/XRP) terhadap kelima indeks. Analisis mencakup periode pra-COVID (1 Oktober 2013 hingga 10 Maret 2020), pasca-COVID (11 Maret 2020 hingga 23 Februari 2022), dan konflik Rusia-Ukraina (24 Februari 2022 hingga 6 Januari 2023). Hasil OLS mengungkapkan pengaruh signifikan USEPU, GPR, GFU, dan TPU terhadap imbal hasil aset. Regresi kuantil menunjukkan hubungan hedging positif yang konsisten antara beberapa kategori aset dengan indeks tertentu. Sifat safe-haven OIL dan JPY teruji pada USEPU, sedangkan CNY, BTC, dan XRP terbukti pada GPR. Hasil uji keterhubungan kuantil (*quantile connectedness*) menunjukkan peningkatan koneksi antar berbagai variabel pada pasar bearish dan bullish, serta rendahnya transmisi volatilitas dari imbal hasil terhadap besaran kelima indeks yang berimplikasi pada diversifikasi aset. Secara umum, penelitian menunjukkan adanya hubungan antara beragam indeks ketidakpastian dengan imbal hasil berbagai aset. Hasil penelitian dapat dijadikan acuan dalam optimasi portofolio dan manajemen risiko sekaligus menggarisbawahi pentingnya pengujian ulang sifat hedging dan safe-haven beragam aset pada saat pasar melesu. Studi ini menyarankan pengaplikasian teknik regresi kuantil dan keterhubungan kuantil guna mempelajari lebih lanjut dampak spillover beragam aset terhadap indeks VIX dan GFU selaku proksi terhadap ketidakpastian keuangan.

Kata kunci: sifat hedging aset, sifat safe-haven aset, ketidakpastian, spillover, regresi OLS, regresi kuantil, keterhubungan kuantil.