

Dynamic Spillovers across Sri Lanka's Equity, Forex, Gold, and Oil Markets: A TVP-VAR Connectedness Approach

S.M.N.N. Sarathkumara^{1,*} and J.M.N. Wijekumara²

*Department of Accountancy and Finance, Faculty of Management Studies,
Rajarata University of Sri Lanka, Mihintale, Sri Lanka^{1,2}*

*Corresponding author: naveennirupama@mgt.rjt.ac.lk

Abstract

This study examines return spillovers among Sri Lanka's equity market (ASPI), the LKR/USD exchange rate, gold futures, and crude oil futures using a time-varying parameter VAR connectedness framework with daily data for 2005-2024. Generalised forecast error variance decompositions provide time-varying total, directional, net, and pairwise measures. Results show that the mean Total Connectedness Index (TCI) is 9.99%, and own variance shares range from 87.32% to 92.57%, indicating that own shocks dominate on average while cross-market transmission is present. The TCI series shows pronounced time variation. In most periods, the TCI remains in the 5-15% range. Two major surges are visible. The first occurs in early 2020, when the TCI rises above 60-70% and then declines. The second occurs in 2022, coinciding with domestic currency and funding stress, with values above 40-50% for a limited interval. Between these episodes the TCI reverts toward lower levels, indicating reduced cross-market propagation. Average directional transmission indicates that commodities are the primary sources of spillovers. Crude oil transmits 12.83% of shocks to the system, and gold transmits 12.30%. ASPI and USD/LKR transmit 7.47% and 7.35%, respectively. Net positions at the sample mean are near zero: 0.15 for crude oil, 0.01 for gold, -0.08 for ASPI, and -0.07 for USD/LKR. These values imply mild average transmitter-receiver roles when aggregated, with roles changing during the high-TCI episodes. Pairwise contributions are consistent with these patterns. Shocks from crude oil explain 8.19% of gold's variance, and shocks from gold explain 7.97% of crude oil's variance. Cross-effects between domestic equity and the exchange rate are smaller: USD/LKR accounts for 3.05% of ASPI's variance and ASPI accounts for 2.97% of USD/LKR's variance. The evidence indicates time-varying integration between global commodities and Sri Lankan financial variables at the daily frequency, with commodities exerting greater influence than domestic markets on average. The TCI path dates episodes of elevated connectedness and can support portfolio allocation, currency and commodity hedging, and market surveillance. Future work can examine determinants of TCI peaks, assess robustness and discount factors within the TVP-VAR framework.

Keywords: ASPI, crude oil, gold, LKR/USD, TVP-VAR connectedness