Abstract

The possibility to measure the contribution of agents and exchanges to the price formation process in financial markets acquired increasing importance in the literature. In this paper I propose to exploit a data-driven approach to identify structural vector error correction models (SVECM) typically used for price discovery. Exploiting the non-Normal distributions of the variables under consideration, I propose a variant of the widespread Information Share measure, which I will refer to as the Directed Acyclic Graph based-Information Shares (DAG-IS), which can identify the leaders and the followers in the price formation process through the exploitation of a causal discovery algorithm well established in the area of machine learning. The approach will be illustrated from a semi-parametric perspective, solving the identification problem with no need to increase the computational complexity which usually arises when working at incredibly short time scales. Finally, an empirical application on IBM intraday data will be provided.

Keywords: Structural VECM; Information Shares; Microstructure noise; Independent Component Analysis; Directed Acyclic Graphs.

JEL classification: C32, C58, G14.

Declaration of interest: none