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"A Taxonomy of Automated Trade Execution Systems"
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Computerized trade execution is the final step in the automation of financial trading market operations, whereby traders submit orders through computer terminals, and the host computer determines trades, reporting results back to traders through their terminals. Over fifty automated trade execution systems currently operate worldwide, and at least five international organizations are looking into the regulation and standardization of the trade execution process.

This paper provides a unified technical summary of 53 automated trade execution systems, which are differentiated with respect to geographical location, date of inception, type of securities traded, and extent of global reach and are then described in terms of three classifications.

First, automated systems are classified by an ordered set of trade execution priority rules, 11 of which are identified. The priority assigned to bids and offers for a security governs the place of the order in the queue awaiting execution, and determines the distributional properties of transaction prices, conditional on order flow. A comprehensive view of the nature of automated systems in 16 countries is provided, by security type and over time.

Second, automated systems are classified according to the degree of automation of the price discovery process in order to clarify the diversity of trade-matching algorithms observed in existing automated markets. The level of price discovery has implications for the type and degree of regulatory oversight of automated markets. Trends in the automation of the price discovery process are analyzed by security type, market center, and over time. It is found not only that the number of automated markets is growing over time, but also that the degree of automation of market structure within this class is increasing.

Third, systems are classified by information structure. Regulatory concerns are focused on the type and amount of information provided to different classes of investors and system participants. Informational differences influence price volatility and liquidity of the market. All systems are classified with respect to the types of information they offer to direct system participants. Asymmetries of information between traders working on the system and outside investors, who do not have direct access to the automated market, are explored for a smaller set of markets. The paper examines differences in the provision of information by type of security, differentiating between futures and options trading and stock trading according to the degree to which participants have access to electronic order books.