

A Multi-Agent Smart E-Market Design at Work for Shariah Compliant Islamic Banking

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Abstract : Though quite fast on growth, Islamic financing at large, and its diverse instruments, is a controversial matter among scholars. This is evident from the ongoing debates on its Shariah compliance. Arguments, however, are inciting doubts and concerns among clients about its credibility, which is harming this lucrative sector. The work here investigates, particularly, some issues related to the Tawarruq instrument. The work examines the issues of linking Murabaha and Wakala contracts, the reselling of commodities to same traders, and the transfer of ownerships. The work affirms that a multi-agent smart electronic market design would facilitate Shariah compliance. The smart market exploits the rational decision-making capabilities of autonomous proxy agents that enable the clients, traders, brokers, and the bank buy and sell commodities, and manage transactions and cash flow. The smart electronic market design delivers desirable qualities that terminate the need for Wakala contracts and the reselling of commodities to the same traders. It also resolves the ownership transfer issues by allowing stakeholders to trade independently. The bank administers the smart electronic market and assures reliability of trades, transactions and cash flow. A multi-agent simulation is presented to validate the concept and processes. We anticipate that the multi-agent smart electronic market design would deliver Shariah compliance of personal financing to the aspiration of scholars, banks, traders and potential clients.

Keywords : Islamic finance, share'ah compliance, smart electronic markets design, multiagent systems

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