

# **Dealer Quotes, Order Flow and Indirect Foreign Currency Utility in a Multiple Dealership Market**

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The paper proposes a model of multiple dealer forex trade, where the equilibrium order flow pattern is derived as a function of shadow prices (marginal utilities) of FX holdings across market participants. The shadow valuation can be heterogeneous (due to differences in preferences, endowments or asset payoff information), giving rise to non-zero trades in equilibrium. The Nash equilibrium of the one period inter-dealer game is obtained as a steady state Nash equilibrium of a differential game between the same players.

Our model employs the joint view of the active order of one party and the state of the other party. An order can have a big or a small price impact, depending on the marginal currency valuation by the order-receiving market maker. This marginal valuation can have a low (prompting the dealer to reduce position), high (expand position) or neutral (not to change position) level. If the received order is big enough to cause a move from this neutral level, then the order evidently has a price impact. This is because the market maker would change his quotes in order to induce the corresponding subsequent trades with other market users. Conversely, if the received order results in a shift of the originally non-neutral marginal valuation towards the no-trade value, the price impact is negligible, since the market maker has no need to “invite” additional trades by shifting quotes. Altogether, we replace a one-dimensional picture of order flow impact on prices with a two-dimensional one, where the price change is a function of both incoming order and the current marginal valuation.

Two variants of the model are constructed, one for the direct and the other for brokered trading mechanism. In the latter, the dealer cannot fully determine the market user order by means of his own pricing schedule, even if he takes the market user demand as given. The non-dealer investor in the brokered market is only given access to the standing pricing schedule. Therefore, the market user cannot herself split orders; this is done by the broker, based on the totality of dealer quoting parameters. Altogether, the presumed single transparent price advantage of the brokered market has a cost: we show that the ability of investors to adjust their marginal foreign cash utility by FX trade is limited compared to the direct market. We also find that, under both trading mechanisms, hot potato trades are non-zero even if the dealers are perfectly symmetric.

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