

6.1 Why Automate?

The KPM is an automated market maker. The main strength of an automated market maker relative to its human counterpart derives from its ability to update quotes for dozens of related securities almost instantaneously. This ability reduces adverse selection cost, thereby allowing market makers to provide more competitive quotes to customers.

In today's increasingly electronic and automated trading environment, the market maker's ability to quickly update his/her quotes is increasingly important. The various speeds with which market participants react to the arrival of new information represent a source of informational asymmetry (Foucault et al., 2003; Litzenberger, 2012). In particular, liquidity suppliers who are slow to react to new information can leave their stale quotes vulnerable to being adversely picked off by high-frequency traders (Hendershott and Riordan, 2013). The competition to respond to new information faster than anyone else has become so intense that trading firms want to place their computers the building where the exchange's matching machine is: The time it takes for the light to travel from their computers to the matching machine matters (Litzenberger, 2012). Given this extraordinarily high-frequency trading environment, the automation of the quote-updating process is important for the liquidity supplier to survive.

This adverse selection cost becomes particularly important for a market maker involved in multiple related markets: Quotes need to be consistent with one another to ensure that there is no arbitrage opportunity. With more information to process, the comparative advantage of the automated market maker over the human counterpart can only become more significant (Gerig and Michayluk, 2013).

The KPM is an automated algorithm through which the liquidity supplier can quickly price multiple contingent claims while taking into account a variety of factors. The resulting prices reflect the market maker's risk aversion and ambiguity aversion while ensuring that there is no arbitrage opportunity.

6.2 Other Well-Known Strengths of a Pari-mutuel Auction

First, the ISE is interested in the PDCA mainly because pari-mutuel markets can effectively mitigate counterparty risk (Burne, 2013). The pari-mutuel auctioneer can be thought of as the central clearing counterparty (CCP). In particular, the pari-mutuel auctioneer is the common CCP operating in multiple contingent claims markets. The fact that one auctioneer handles multiple markets