4. SUMMARY POINTS AND FUTURE ISSUES SUMMARY POINTS

The Economics of High-Frequency Trading: Taking Stock Albert J. Menkveld1,d

1. Transaction costs decreased substantially. In the decade of migration to electronic trading and HFT arrival, transaction cost decreased by over 50% for both retail and institutional investors.

2. HFT market-making reduces transaction cost. If HFTs enter limit-order markets with only a speed advantage, they hurt trading. If they enter with an informational advantage they benefit trading by endogenously becoming market makers. If both, then the outcome depends on the strength of both forces. The evidence is that HFTs are extremely fast and well informed. As predicted, they are important price quote submitters (i.e., market makers). A calibration finds HFT entry to have a modest positive welfare effect.

3. HFT preying on large orders increases transaction cost. If HFTs have an ability to predict institutional order flow, then they might extract rents by preying on these orders. The evidence suggests that HFTs are mostly market makers for large institutional orders, and only prey on them when they are extremely large and execute through a long series of child trades.

4. An HFT run game on public signals increases transaction cost. In continuous-time markets HFTs, both the ones with quotes outstanding and those without, race to the market on a public signal. The market makers run to update their stale quotes; the bandits run to take them out. This run game comes with an arms race that raises transaction cost. Exchange redesign could reduce this cost.

5. HFTs facilitate venue competition. Cross-market arbitrage by HFTs effectively connects buyers and sellers across venues. HFTs thus make venue competition possible with more innovation and lower trading fees as a result.

6. Quote flickering as a by-product of healthy HFT competition. Quotes flicker when HFTs play mixed strategies in equilibrium. They resubmit randomized price quotes in order to avoid being undercut. The evidence is indicative at best. Quote uncertainty has increased over time and is episodic in nature.

7. HFTs might operate in productive intermediation chains. An HFT intermediation chain could reduce information asymmetry and thus benefit trade. The evidence suggests such chains are prevalent.

8. HFTs serve an investor need for continuous rebalancing. Faster trading adds opportunities to rebalance for investors. The additional marginal utility this yields is unlikely to offset the marginal cost of an HFT arms race.

9. Bottom line: I believe economic benefits outweighs costs. Electronic markets and HFTs arrived and coincidentally transaction costs declined for investors. This suggests the identified economic benefits of HFTs (market making, venue competition, more trading opportunities) outweigh their economic costs (large-order predation and run games). Market quality might be further improved by exchange redesign to stimulate the economic benefits of HFT and reduce their costs (e.g., 22 Menkveld In press manuscript for the Annual Review of Financial Economics, Volume 8. through frequent batch auctions). Fisher Black’s automated stock exchange arrived, reduced costs, but might not be in its best possible shape yet.