The dynamic version of the Glosten and Milgrom (1985) model of asset pricing with asymmetric information is studied. We will show that there is a unique equilibrium when the next-period value function of the informed trader, who knows the terminal value of the asset, is strictly convex and strictly monotone in terms of the market makers prior belief. A characterization of the bid and ask prices and the informed traders manipulative strategy in equilibrium will be given. Finally, a computational method for simulating the equilibrium will be presented.

There are two standard reference frameworks in the literature. The first is called the "continuous auction framework" first developed by Kyle (1985). The second is the "sequential trade framework" proposed by Glosten and Milgrom (1985). A large amount of research has been done involving the application of these two frameworks. Both frameworks are sufficiently simple and well behaved that they easily lend themselves to analysis of policy issues and empirical testing.

Despite the importance of dynamic trading strategies by informed traders in the literature, characteristics of price dynamics and information transmission have not yet been adequately studied because there is no closed-form solution for equilibrium in the dynamic Glosten-Milgrom framework and it is not yet known if equilibrium is unique either in the Kyle model or the dynamic Glosten-Milgrom model in which strategic informed traders can trade repeatedly. In this paper we will present a model of dynamic informed trading and show that there exists a unique equilibrium when the value functions of the informed traders are monotonic and strictly convex in terms of the market makers prior belief. In addition, we will characterize the equilibrium bid and ask prices and specify the necessary condition for manipulation to occur in equilibrium. Finally, we will present a computational method to solve for the equilibrium and comparative statics from the simulations.

Proving the uniqueness of equilibrium in the general case is a challenging endeavor and this paper opens up the path to it. From the results of our numerical simulation we will make several conjectures. In the end we will present the directions to prove the uniqueness of equilibrium in the general case.