Understanding Volatility
Understanding How Electronic Day Trading Has Protected Liquidity in a High Volatility Stock Market - The Complementarity Principle

Several prominent economists and mathematicians have addressed the random nature of the stock market. In 1900, Bachelier published a paper in the Annales Scientifique de L’Ecole Normale Superieure that changes in stock prices on the Bourse, the French stock market, follow a 'random walk' and fit a bell shaped curve. This model is the basis for modern portfolio theory. This simplistic model has been challenged and re-defined by Dr. Pieczenik in his chapter in The Electronic Day Trader by Marc Friedfertig and George West p.123 (2) and even more recently by the mathematician Benoit B. Mandelbrot, the father of fractal theory. In February’s Scientific American p.70, Mandelbrot points out the problem, "The mathematics underlying portfolio theory handles extreme situations with benign neglect it regards large market shifts as too unlikely to matter or as impossible to take into account. … An inescapable analogy is that of a sailor at sea. If the weather is moderate 95 percent of the time, can the mariner afford to ignore the possibility of a typhoon?" Portfolio management theory is based on Nobel laureate Markowitz’s (1) theory of profit being inversely related to risk. Risk is directly related to volatility in portfolio management theory. Lowering the covariance or correlation coefficient among the different equity investments can lower volatility in portfolio theory. This lack of interdependence in price movement among investments leads to lower risk and therefore higher utility and profits. This is the logic behind all diversified mutual fund portfolio management. If you diversify among financial instruments with zero correlation in price and fluctuation, then you lower the risk of any one instrument putting your total investment at risk. This strategy supplies liquidity when the market is normally distributed and not asymmetric.

The Black-Scholes equation, the basis of derivative calculations of volatility, also assumes the market is 'normally' distributed. However, in October 1987 a typhoon Mandelbrot predicts hit the NASDAQ market and the market makers didn’t pick up their phones. Liquidity disappeared. How can liquidity be supplied when the market is asymmetric? In an asymmetric market, one can supply liquidity if one creates a portfolio that is opposite to the diversity portfolio. A strategy where the portfolio is geared to relative strength and relative weakness and that 'ride' the fluctuations will create liquidity when the classical portfolio managers walk away from the table. Ironically, it is the day traders (2), who trade directly and electronically, that supply the liquidity at these times of asymmetry, volatility and crisis. They make their money when the volatility is high and the correlations within groups are high. That is they will trade relative strength in strong groups. Since they turn over their capital about 100 times a day, and they have a margin of about 10 to 1 if the trades are not carried overnight, they have an amplification of 1000 fold on their day capital. If you assume there are at least 1,000 to day traders that are internet linked and follow similar strategies, that's an amplification of 1 million fold. Given an average trade is 1000 shares you are talking about 1 billion shares a day. This is in the ballpark of what we are seeing. Each of these variables can fluctuate 10 fold but the principal point is that 1 billion shares is an enormous amount of liquidity dedicated to the counter principle that volatility is directly proportional to the profit made i.e. momentum and basket trading. This principle of homogenous trading exactly complements the
diversity principle of portfolio management theory. This complementarily of trading strategies is the reason the stock market didn’t go into an October 1987 spiral this last August. As the portfolio managers and derivative managers panicked, the momentum traders came in to ride the wave down thereby creating an enormous short position that forced the market back up with a very powerful bounce. This created more momentum on the upside and then the diversity portfolio managers came in again. The stock market and NASDAQ has a new buffering mechanism that evolved just in time to protect the liquidity in the market. The Internet evolved just in time to create a combustion engine independent commerce. Electronic computer trading evolved just in time to create a new source of instantaneous capital that supplies liquidity at necessary moments. The electronic day trading liquidity is much like a Van de Graaf generator. Very high voltage but very little amperage. Diversity capital has lower voltage but much higher amperage. A new concept of 'the velocity of money' has to be introduced to explain the 'capital force' that balances the 'inertial force' of diversity capital. The 'pressure' of day trading capital exactly balances the counter pressure of diversity capital. We believe this complementary liquidity principle which we have just proposed is a sound basis for 'buffering' liquidity in the future global markets. An equivalence complementarily principle where there is an equality between the diversity capital per unit time and the momentum capital per unit time. That is at the end of the trading day the amount of capital and shares traded by diversified portfolios will equal the amount of capital and shares traded by homogenous traders (electronic day traders). Therefore, an attempt to regulate one without regulating the other can create an artificial asymmetry in market liquidity that is not correctable. Where risk adverse money used to go to bonds if diversity strategies didn’t pay off, now there is other electronic capital that can buffer these risk situations. For example, no such capital balance exists in the real estate market. State pension funds invested in real estate do not offer the liquidity of day trading. For example, Bernard Spitzer, Eliot Spitzer's father, invested in one of the Neal Bush’s Silverado Bank properties in New York, the Harkness Plaza. This property required extreme political manipulation to rescue the pension money invested in its purchase. It was part of a RICO suit involving the FDIC, Neal Bush, Iranians, and some secret investors. It was in court for ten years and it is still not resolved. Real estate has no capital buffering system and very low liquidity. As best selling author Marc Friedfertig wrote (2) 'Liquidity does not just mean a rapid turnover; it means a rapid turnover at a fair value. Anyone could immediately sell a Rolls Royce on the street for a dollar, but this would not constitute a fair price and therefore does not represent true liquidity. By the same token, real estate may sit for many expensive years before buyers appear who are willing to pay fair value.' The irony here is that Eliot Spitzer, who is mathematically deprived, as the Attorney General, is now going to investigate electronic day trading. He should be investigating real estate political manipulations, that at least requires no understanding of mathematics. Electronic day trading is what saved this market from cracking in the last large dip. It will continue to do so only if those that are mathematically deprived are kept away from the market. Imagine what would have happened to the Stock Market if Neal Bush were not just a director of Silverado Bank but Secretary of the Treasury. It’s still possible. A reviewer, February 3, 1999,