



# Intraday Volatility Q&A

## with Albert Menkveld

Markets Media Senior Reporter **Riley McDermid** gets an expert opinion on what volatile conditions can tell us about market health from **Albert Menkveld**, an associate professor of finance at VU University Amsterdam and intraday volatility specialist.



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**Markets Media:** Why did you start studying the topic of intraday volatility, and do you think those same reasons hold true today? Where do you think that field of study will be in a few years and why?

**Albert Menkveld:** I started studying volatility 10 years ago when I was a public relations spokesman for KLM Royal Dutch Airlines. Its shares traded in Amsterdam and in New York at that time. In fact, the NYSE generated almost half of total volume, which led the CEO to ask us where price discovery really took place. In other words, which market ultimately determined the value of the company? If that turned out to be the NYSE, the company considered refocusing communication efforts on New York. This question about price discovery or fundamental volatility intrigued me and has dominated my research agenda since. Now, another major component of volatility is transitory price changes and this is what I am working on right now.

**MM:** After a bruising few months of volatile trading this fall, how did intraday volatility differ from past periods, if at all? Were those changes in any way surprising or different than what you may have expected?

**AM:** Nobody foresaw the huge increases in volatility over the last few weeks or months. Markets started to discover that the fundamental value of many securities was lower than what was previously assumed. It began with the valuation of mortgage securities, which were revised downwards in a significant way. All of this produced a lot of fundamental volatility. After this, I am not surprised by the huge spikes and the gradual increase in fundamental volatility, given the type of information that was given to the market. The government started discussing a \$700 billion bailout, which turned out to be the start of a series of drastic measures. Such intervention changes the way a market functions; it redistributes wealth across taxpayers now and in the future and across taxpayers and institutions in the current economy. I am not at all surprised this has caused prices to change a lot. What is not immediately obvious is that transitory volatility went up as well. Thus, it seems that volatility in our markets, if followed from day to day, has grown disproportionately, and that it is driven by more than fundamental price changes.

**MM:** In that case, where does this transitory volatility come from? And how could it affect the market going forward?

**AM:** One important source of such volatility is that market intermediaries need to be compensated for matching buyers and sellers of a particular security who typically do not arrive at the same point in time. That is, these intermediaries might buy from sellers in the morning and sell their inventory to buyers in the afternoon. In between these transactions, they are exposed to price risk over this inventory, as the fundamental value of the security might change.

To compensate for this risk, they essentially make prices overshoot, which causes transitory volatility. They only stand ready to buy from sellers at prices below fundamental value and to sell to buyers at prices above fundamental value. Prices thus overshoot based on buying or selling pressure from liquidity demanders. Generally, these effects were thought of as negligible in size and short-lived. They exist perhaps on a transaction by transaction level, but should wash out when security prices are studied at a daily level. But, that is not what we are finding, particularly in current times.

If permanent volatility is high, think of the intermediary. He is matching buyers and sellers, which is more risky because fundamental prices change a lot. So, he requires more compensation. In addition, it is harder to find the opposite side of the market, which reduces his ability to offload inventory. This is why we see a tremendous amount of transitory volatility in markets these days. Prices overshoot substantially. For the future, I expect transitory volatility to come down as fundamental volatility reverts back to average levels.

Another important reason for the large compensation demanded by these intermediaries is that they are low on capital levels themselves and they are therefore less willing to take large positions in a security. Sometimes we even see these guys operate on negative capital levels. But, with the bailout and fresh money being poured into the financial industry, there is going to be more capital available for providing these services, which is another reason why I expect temporary volatility to come down.

**MM:** Algorithms have been blamed for a lot of market volatility during the last six months. Do you agree with that assessment, or do you think perhaps it has been a red herring?

**AM:** I consider it to be a red herring. I believe that we as humans are responsible and we blame the machines. It is the humans who put the machines out there! Algos essentially use sophisticated mathematical technology to predict where the liquidity supply is going to be, both in terms of time and in terms of venue. In order for a computer to do this, it needs to have a history that repeats itself. This is key. Because there is no time in history that we have seen the markets behave like this, you cannot learn about these market circumstances from past data; therefore, a computer is not able to help you in optimally executing a trading strategy. In these markets you just have to go back to human judgment. Algorithms need a steady and repeated market in which to operate. But once the markets are settled, I expect algos to continue to grow and support trading strategies. As a matter of fact, in one of our studies we find that in normal circumstances they improve liquidity supply and I therefore consider algos to be generally good for market quality.



**MM:** With global markets changing and evolving almost daily, what in your opinion will the market be seeing in terms of volatility in coming months?

**AM:** I think that one thing that we know about volatility, and that my colleague Robert Engle, the Nobel laureate, first found in his research, and continues to study in his newly established Volatility Lab, is that volatility is a mean reverting process. So, basically, markets could exhibit high volatility for months, and low volatility for months, but they always revert back to a steady mean. We therefore know that today's elevated volatility will come back to a long-term volatility level. It is true, though, that long-term volatility levels may also change over time, but such changes are small relative to the temporary swings in volatility. ○

**Albert Menkveld** is an associate professor of finance at VU University Amsterdam. In 2002, he received a Tinbergen doctorate from Erasmus University Rotterdam. He spent 18 months of his doctorate as visiting scholar at Wharton and Stanford on a Fulbright scholarship. He visited NYU-Stern in 2004-2005 and will be there again in 2008-2009. Menkveld has been published in various journals, including the *Journal of Finance*, *Journal of Business & Economic Statistics*, and *Journal of Financial Markets*. In 2007 he received the Pierson medal, or the "Dutch Bates Clark," from the Royal Dutch Economic Association. In 2004 he received a VENI grant from the Netherlands Organization for Scientific Research (NWO) to fund his three-year research agenda, in 2003 he was awarded a Lamfalussy scholarship by the European Central Bank, and in 2001 the Josseph de la Vega Prize by the Federation of European Exchanges. In 2004 he became a member of the academic council of the *Autorité des Marchés Financiers*, or the "French SEC."