Portfolio Risk And Performance

Liquidity and Risk Management

February 1, 2007

AEA Papers and Proceedings

This paper provides a model of the interaction between risk-management practices and market liquidity. Our main finding is that a feedback effect can arise. Tighter risk management leads to market illiquidity, and this illiquidity further tightens risk management.

This feedback between liquidity and risk management can help explain why liquidity can suddenly drop. We show that this "snowballing" illiquidity can arise if volatility rises or if more agents face reduced risk-bearing capacity — for instance, because of investor redemptions, losses or increased risk aversion.

Our link between liquidity and risk management is a testable prediction. While no formal empirical evidence is available, to our knowledge, our prediction is consistent with anecdotal evidence on financial market crises. For example, in August 1998 several traders lost money due to a default of Russian bonds and, simultaneously, market volatility increased. As a result, a key risk metric — the liquidity-adjusted value at risk — of many investment banks and other institutions increased. To bring risk back in line, many investment banks reportedly asked traders to reduce positions, leading to falling prices and lower liquidity. These market moves exacerbated the risk-management problems, fueling the crisis in a similar manner to the one modeled here.

This document is not intended to, and does not relate specifically to any investment strategy or product that AQR offers. It is being provided merely to provide a framework to assist in the implementation of an investor's own analysis and an investor's own view on the topic discussed herein.

This document has been provided to you solely for information purposes and does not constitute an offer or solicitation of an offer or any advice or recommendation to purchase any securities or other financial instruments and may not be construed as such. The factual information set forth herein has been obtained or derived from sources believed by the author and AQR Capital Management, LLC ("AQR") to be reliable but it is not necessarily all-inclusive and is not guaranteed as to its accuracy and is not to be regarded as a representation or warranty, express or implied, as to the information's accuracy or completeness, nor should the attached information serve as the basis of any investment decision. This document is not to be reproduced or redistributed to any other person. The information set forth herein has been provided to you as secondary information and should not be the primary source for any investment or allocation decision. Past performance is not a guarantee of future performance. Diversification does not eliminate the risk of experiencing investment losses.

This material is not research and should not be treated as research. This paper does not represent valuation judgments with respect to any financial instrument, issuer, security or sector that may be described or referenced herein and does not represent a formal or official view of AQR. The views expressed reflect the current views as of the date hereof and neither the author nor AQR undertakes to advise you of any changes in the views expressed herein.

The information contained herein is only as current as of the date indicated, and may be superseded by subsequent market events or for other reasons. Charts and graphs provided herein are for illustrative purposes only. The information in this presentation has been developed internally and/or obtained from sources believed to be reliable; however, neither AQR nor the author guarantees the accuracy, adequacy or completeness of such information. Nothing contained herein constitutes investment, legal, tax or other advice nor is it to be relied on in making an investment or other decision. There can be no assurance that an investment strategy will be successful. Historic market trends are not reliable indicators of actual future market behavior or future performance of any particular investment which may differ materially, and should not be relied upon as such. Diversification does not eliminate the risk of experiencing investment losses.

The information in this paper may contain projections or other forward-looking statements regarding future events, targets, forecasts or expectations regarding the strategies described herein, and is only current as of the date indicated. There is no assurance that such events or targets will be achieved, and may be significantly different from that shown here. The information in this document, including statements concerning financial market trends, is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons.