PORTFOLIO RISK AND PERFORMANCE

Liquidity and Risk Management

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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.

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