

Treasury Returns Affected by Liquidity and Information Risks, New Study Finds

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(PhysOrg.com) -- Building on a seminal study recognizing the effect of liquidity on U.S. Treasury securities, a new study by a University of Arkansas researcher documents a strong, positive relationship between expected return on Treasury securities and risks associated with the liquidity of the U.S. Treasury market. The study also revealed a strong relationship between return and what is known as information risk - experts' varying interpretations of important announcements about the U.S. economy.

“We provide the first comprehensive empirical analysis of the effects of liquidity and information risks on expected returns of U.S. Treasury bonds,” said Neil Wang, assistant professor of finance in the Sam M. Walton College of Business. “Our study also represents the first attempt to quantify the effect of information risk on Treasury returns, regardless of whether there is a public-information announcement or not. We believe our results provide new insights on the pricing of Treasury securities.”

With the exception of the foreign exchange market, the U.S. Treasury market, which operates 24 hours a day, is the largest and most important financial market in the world. In 2006 its average daily trading volume was approximately \$600 billion. By comparison, the total average daily trading volume of the U.S. stock market in 2006 was \$110 billion.

The Treasury market includes more than \$10 trillion in total securities. In dollar value, less than half is liquid - the amount of outstanding,

marketable U.S. Treasury debt reached \$4.52 trillion in December 2007. In this context, liquidity is defined as bonds that are marketable, or available for trade. A liquid market is associated with stability.

Wang and colleagues Haitao Li at the University of Michigan, Chunchi Wu at the University of Missouri-Columbia and Yan He at the Indiana University Southeast used a large set of transaction data from GovPXX, a new historical database service for U.S. Treasury securities. Armed with data from this service, the researchers estimated the market-wide liquidity factor and probability of information-based trading, a standard measure of information risk based on industry-accepted approaches developed in previous benchmark studies. The researchers then examined cross-sectional relationships between expected Treasury bond returns and sensitivity of the returns to changes in the liquidity-risk factor and information-risk measure.

Specifically, results showed that a 10-percentage change in liquidity risk affected mean excess return of U.S. Treasury securities by around 9 basis points in one year. Excess return is individual Treasury security return adjusted by the total Treasury market return during the same time period. A difference of 9 annual basis points in excess return for the whole Treasury translates into a market gain or loss of \$4.1 billion in one year. A 10-percent change in information risk affected mean excess return by six basis points, which is equal to an annual gain or loss of \$2.7 billion.

Because the U.S. government backs Treasury securities, investors - in this case, foreign nations and large financial institutions - consider the securities to be free of credit risk. Treasury securities typically deliver low yields. Most importantly, from a macroeconomic perspective, rates on Treasury securities traditionally have been used as the standard for interest rates in the U.S. economy and international capital markets. For this reason, Wang explained, it is important to understand factors that

determine Treasury returns.

The researchers' study was published in the February 2009 *Journal of Finance*. An electronic copy is available upon request.

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