

## THE ROLE OF LIQUIDITY IN ASSET PRICING

Jose Luis Miralles Marcelo

María del Mar Miralles Quirós

*Department of Finance and Accounting, University of Extremadura,  
Av. Elvas s/n 06071 Badajoz (Spain)*

The question whether liquidity affects asset returns remains unresolved thus far. This issue is important since a vast literature exists in the area of market microstructure of financial markets which argues that liquidity has a first order effect upon asset returns. The absence of conclusive results in previous empirical research suggests that asset pricing and liquidity have not been properly addressed in the standard literature. It still remains an open question whether liquidity is priced as a systematic source of risk or as a desirable characteristic of an asset. Another important question is the cause of time variation in market-wide liquidity.

Following this current strand of research, we generate an illiquidity factor using the Fama and French (1993) orthogonal approach and analyze whether it enters the stochastic discount factor as an additional state variable.

Because of the absence of consensus in empirical research about the most appropriate liquidity measure, we apply the Amihud (2002) illiquidity ratio that shows the price response associated with one euro of trading volume. The advantage of using this measure is two-fold. First, it has a strong theoretical appeal. Hasbrouck (2004) finds that this measure appears to be the best among the usual proxies employed to capture Kyle's lambda. Second, the data on illiquidity rates is relatively easy to obtain over a long period of time and markets.

Our results for the Spanish market indicate that time varying expected excess returns can be explained by an illiquidity-based CAPM model.

To explain the cross-sectional variation in illiquidity, we propose to adapt the Acharya and Pedersen's (2005) model in two different models. Acharya and Pedersen (2005) derived a liquidity-adjusted capital asset pricing model in which an asset's expected return depends on the market return, on its relative illiquidity cost, and on the relative market illiquidity. Our idea is to separate those liquidity effects in two different models. A comparative analysis of both models allows us to show if liquidity is priced as a systematic source of risk or as an asset specific characteristic.

For the empirical estimation of these models, we use the Fama and MacBeth (1973) method, running cross-sectional regressions on several portfolios that take into account the pre-estimation of the betas. Using Spanish data, we may conclude that liquidity is priced as a systematic source of risk.

Finally, most recent papers indicate that these results are based on the inventory costs supported by market makers. However, the Spanish stock market is an example of a limit order market without market makers. If we show that the aggregate illiquidity is a key

ingredient of asset pricing with Spanish data, we might look for an alternative explanation.

For that reason, we analyze the macroeconomic sources of systematic illiquidity risk. The idea behind this analysis is that the existence of liquidity co-movement across individual stocks suggests that some underlying economic forces are responsible for the dynamics of the systematic component of liquidity.

Using a vector autoregression approach, we study the dynamic relation between market-wide illiquidity and various macroeconomic variables. Our results indicate that default spread is particularly important in explaining illiquidity variations. We conclude that market-wide illiquidity could be an economic sentiment indicator that captures the systematic risk associated with macroeconomic variables.