

THOMSON REUTERS INDICES LIQUIDITY FILTER

The Thomson Reuters Liquidity Filter Examined

WHAT IS LIQUIDITY?

A market with very low transaction costs is characterized as *liquid* while one with high costs is *illiquid*. It is difficult to measure these costs as they depend on many factors, such as the size of a trade, its timing, the trading venue and the counterparties. Moreover, the information needed to calculate transaction costs is often unavailable. Therefore, a wide range of substitute measures are used to evaluate liquidity.

HOW IS LIQUIDITY MEASURED?

Since liquidity is difficult to measure, various proxies are used:

- **TRADING VOLUME:** An indirect but widely-used measure, it is simple and available. (Fact: More active markets tend to be more liquid.) But trading volume is correlated to volatility which can impede market liquidity.
- **BID-ASK SPREAD:** This measures the cost of executing a small trade. Usually calculated as the difference between the bid or offer price and the bid-ask midpoint. It can be calculated quickly, with data widely available in real time. But bid and offer quotes are good only for limited quantities and time periods and the spread just measures the cost of executing a single trade of a certain size.
- **QUOTE SIZE:** The quantity of securities tradable at the bid and offer prices. It accounts for market depth and complements the bid-ask spread. Market makers often do not reveal the full quantities they will transact at a given price so the measured depth underestimates the true depth.
- **TRADE SIZE:** Quantity of securities traded at the bid and offer prices, reflecting any negotiation over quantity. This makes trade size an alternative depth measure. It can underestimate market depth because the quantity traded is often less than the quantity that could have been traded at a given price.
- **PRICE IMPACT COEFFICIENT:** This considers the rise (fall) in price that typically occurs with a buyer-initiated (seller-initiated) trade. Useful for large trades or a series of trades.

Most of the academic research on liquidity over the past 20 years shows that price impact (meaning price change or return) together with the bid-ask spread and depth measures, such as trade size or quote size, provides a good picture of liquidity – substantially better than volume alone. A drawback of this tripartite measure is that depth measures outside of G7 countries are difficult to come by.

THE THOMSON REUTERS INDICES LIQUIDITY FILTER:

The rationale for the Thomson Reuters liquidity filter is based on the academic results noted in above: Price change or return together with the bid-ask spread and depth measures provide a good picture of liquidity. The same papers state that if only one proxy is used to measure liquidity, price is the better proxy versus bid-ask spread alone or depth measures alone.

THE THOMSON REUTERS LIQUIDITY FILTER: PRICE IS A BETTER PROXY

Price impact together with the bid-ask spread and depth measures provides a good picture of liquidity. Volume is not a preferred measure for Thomson Reuters Indices.

A single return value on its own is of little use in determining liquidity. A time series of returns values is needed because the price movement of an illiquid security is considered *sticky*, i.e. there will be periods when it changes very little or not at all. In addition, the response of the same security to the broader market's price movement tends to be idiosyncratic.

Using appropriate statistical techniques, the Thomson Reuters liquidity filter can find those stocks that exhibit the aforementioned idiosyncratic behavior and stickiness and label them *illiquid*. Therefore, the Thomson Reuters liquidity filter uses the agreed upon "best" single liquidity proxy – price – and the observed behavior of each security versus the market to separate liquid stocks from non-liquid stocks.

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