Do ETFs Increase Stock Volatility?

By Editorial Staff *Wed, Sep 3, 2014*

Authors of a new study, published by the National Bureau of Economic Research, found that a one-standard-deviation increase in ETF ownership of a stock raises its daily volatility and turnover by about 16%.

Money has flooded into exchange-traded funds (ETFs) over the past decade, but there's been little analysis of whether or how this development may affect the performance of securities markets.

In a new paper, "Do ETFs Increase Volatility?" (NBER Working Paper No. 20071), authors Itzhak Ben-David, Francesco Franzoni, and Rabih Moussawi discover that the stocks that are held within such funds experience substantially higher intraday and daily volatility than stocks without substantial ETF holdings.

The authors suggest that the arbitrage between ETFs and their underlying securities adds a whole new layer of trading to stocks that are held within ETFs, and fosters the propagation of trading shocks that occur in the ETF market. As a result, the non-fundamental volatility of the underlying securities increases.

ETFs, which are low-cost index funds that can be traded like stocks (and change price throughout the trading day, instead of being priced once a day, like traditional mutual funds) were first introduced in the 1980s. They began to gain popularity in the 1990s.

Since the turn of the century, ETFs have experienced explosive growth. By 2012, there were more than 1,600 ETFs worldwide, and at the end of 2013 these funds had more than $2.5 trillion of assets under management. At one point in 2010, exchange-traded products accounted for 40% of all trading volume in U.S. securities markets.

To study how ETFs affect securities markets, the authors combine data from the Center for Research in Security Prices, Compustat, Bloomberg, OptionMetrics, and Form 13F filings. They focus on a sample of ETFs that hold U.S. stocks and that were listed on U.S. exchanges over the period 2000 to 2012.

The researchers explore the effects of ETF ownership on volatility by examining variations in ETF ownership of different stocks, and variation in the divergence between the prices of ETFs and their associated baskets of underlying securities, as well as associated fund flows.

Exploiting the fact that ETF ownership of a stock changes if that stock switches between being included in the Russell 2000 and Russell 1000 indexes, they found that a one-standard-deviation increase in ETF ownership of a stock raises daily volatility and turnover by about 16%. Since much of the variation they study in ETF ownership of stocks is arguably independent of the inherent volatility of the stocks, the authors conclude that rising ETF ownership affects volatility.

The research suggests that the more the prices of ETFs and the prices of their underlying component securities diverge, and hence the greater the arbitrage opportunity, the greater the turnover and volatility of the stocks held in the ETF. The authors also find that increased stock volatility results from the flows into and out of ETFs. The price impact of ETF arbitrage appears to decay after a few days, which is consistent with claims that ETFs add noise to security prices.