



Prof. Francesco Franzoni

Francesco Franzoni is Professor of Finance at the Università della Svizzera italiana (USI) and holds an SFI Senior Chair. He obtained his PhD in Economics from MIT and directs the Institute of Finance at USI. His research concentrates on institutional investors, such as hedge funds and ETFs, and their effect on asset prices.

Do Exchange-Traded Funds Increase Stock Volatility?

Exchange-traded funds (ETFs) have become increasingly popular over the past two decades. The share of market cap ownership by ETFs in the S&P 500 universe rose from 0.1 percent in 2000 to 7.1 percent in 2015—the amount of assets under management by ETFs is currently more than twice that managed by index mutual funds. ETFs' increased popularity relative to traditional index funds is largely driven by the increased access they provide to liquidity and diversification. One could, however, wonder whether the ease of trade that makes ETFs' success leads to unintended consequences for the underlying securities in ETF baskets.

SFI Professor Francesco Franzoni, together with Itzhak Ben-David, Ohio State University, and Rabih Moussawi, Villanova University, contribute to the literature with their paper “*Do ETFs Increase Volatility?*”, forthcoming in *The Journal of Finance*. Their results show that increases in ETF ownership increase the non-fundamental volatility of securities since liquidity shocks propagate through arbitrage channels.

What are ETFs?

ETFs are investment companies whose objective is to replicate the performance of an index, similarly to index mutual funds. Yet unlike index funds, ETFs are listed on an exchange and traded throughout the day. ETFs are similar to futures in the sense that they track an index, but unlike futures ETFs do not involve a rollover of the expiring contract. Overall, ETFs offer a cost-effective and liquid way for investors with uncertain trading horizons to track an index.

How are ETFs created?

ETFs are traded in the secondary market by retail and institutional investors. However, unlike closed-end funds, new ETF shares can be created and redeemed by certain institutional investors—called “authorized participants”—and such transactions constitute the primary market for ETFs. Arbitrage opportunities may arise when the price of ETF shares, determined by the supply and demand in the secondary market, diverges from the value of the underlying securities. For example, in the case where an ETF trades at a premium relative to the underlying securities, authorized participants have an incentive to buy the underlying securities and to sell the newly created ETF shares on the secondary market.

How do ETFs impact the market?

Empirical data, covering ETFs listed on US exchanges between 2000 and 2015, show that because arbitrage-driven investors buy and sell ETFs, and simultaneously sell and buy the underlying shares, demand and supply shocks are transferred from the ETFs on to the underlying securities and volatility increases. According to some industry participants, 50 percent of the volume in the S&P 500 tracker is related to arbitrage. Research results show that a one standard deviation increase in ETF ownership leads to an increase in the volatility of S&P 500 stocks of up to 16 percent. Further estimates show that such increases in stock volatility are hardly imputable to the improvement in price discovery brought about by ETFs.

What are the implications of ETF-driven increases in stock volatility?

The increase in stock volatility brought about by ETFs is partly non-diversifiable and therefore represents, especially for investors with a short trading horizon, a form of systemic risk. Data supports the fact that ETF ownership may deserve a risk premium; empirical estimates suggest that portfolios of stocks with high ETF ownership display positive alphas of about 50 bps.

What should investors be aware of?

Recent events have shown that the behavior of exchange-traded products, of which ETFs are a sub-category, does not always comply with investors' expectations. For example, the collapse of the exchange-traded note “XIV”, which provided the inverse of the return of the VIX, shows that some of these instruments bear high risks and can lead to extreme losses.

In conclusion, ETFs have brought desirable diversification to investors' portfolios at low cost and are overall a welcome innovation in financial markets. As all forms of financial innovation, however, they may have unintended consequences. Investors, as well as regulators, should pay special attention to the risks involved in such financial instruments to prevent them from becoming toxic.





Swiss Finance Institute Practitioner Roundups



Giordano Lombardo

Giordano Lombardo is the Chairman of Rationis Srl. He is a former CEO and Group CIO of Pioneer Investments, former Head of Asset Management at Unicredit, and former Chairman of Assogestioni, Italy's AM industry association. He is a trained economist with 30 years of experience in the asset management industry, having started his career as an analyst and portfolio manager.

ETFs: The Importance of Investor Education

Exchange-traded funds (ETFs) have probably been the biggest success story of the investment management business over the last 25 years. With more than USD 3 trillion of AuM they are one of the fastest growing segments of the industry, with an outlook for continued, strong future growth. Like all success stories, ETFs attract both enthusiastic support and harsh criticism. The main rationale in their favor is market access at low cost. ETFs have made it possible to invest in a wide range of asset classes, from mainstream equities and bonds to less traditional classes such as precious metals, emerging markets, volatility, or alternative assets. They are available at the price of index funds and are also exchange-traded, and therefore cheaper to run and distribute than mutual funds.

Criticisms—old, and new

The criticisms have focused on suitability for retail clients, complexity, and trading costs. ETFs sometimes cover esoteric assets that are unfamiliar to retail investors. Some ETFs ("synthetic ETFs") provide exposure through swaps or notes, involving portfolio structures and counterparty risks. ETFs offering exposure to leveraged and inverse returns or volatility are particularly complex. Investing in ETFs involves trading commissions, bid-ask spreads, and sometimes significant price gaps to net asset values, especially when the underlying assets are less liquid. The study by SFI Prof. Franzoni et al. adds another critical point concerning ETFs—namely, the increase in volatility of the underlying securities due to the trading activities of ETF arbitrageurs. This effect is little known even by professional investors and raises some questions regarding how these instruments might effectively be used.

The strategic and tactical use of ETFs

There are two ways in which professional investors can utilize ETFs, tactical and strategic. Examples of a tactical use of ETFs include investing excess cash in order to remain fully market-exposed or using them to respond to short-term market conditions. For those engaged in such investments the increase in volatility brought about by ETFs is definitely relevant, because of these investors' short-term horizon. It is possible that within short time periods the increased volatility introduced by ETFs' inclusion influences the

outcome of the intended strategy. In theory this effect should be less relevant for long-term strategic users of ETFs, since there should be more time for fundamental price discovery regarding the underlying securities. In reality though, even the strategic use of ETFs involves challenges and opportunities.

Let's take an example of a strategic application—a smart beta product used to replace an actively managed fund to get exposure to a specific factor risk premium (e.g., mid-cap value). The challenge: the proliferation of indexes and smart beta strategies could generate "crowded trade" effects on single securities, since most of the products tend to follow similar rules to generate factor exposures. These "crowded trades", in turn, would amplify the volatility effects studied by SFI Prof. Franzoni et al., causing a less efficient implementation of the factor strategy itself. Looking at the opportunities, the ETF inclusion effect generates an "ETF risk premium" with a specific alpha associated. This enables investors to capture additional sources of alpha, either by investing in the securities most affected by the inclusion effect, or—on the contrary—by investing in the securities not included in crowded ETF trades, therefore offering a more stable return profile over time.

In sum, the study of SFI Prof. Franzoni et al. contributes to the debate as to whether the proliferation of (quasi-) passive instruments produces more market inefficiencies. The study also emphasizes the importance of investor education concerning ETFs given their specific and not well understood complexities. And this not only in relation to retail investors: while significant professional resources are dedicated to the analysis of and research into active managers, fund buyers and investment consultants spend considerably less effort analyzing passive or rule-based instruments like ETFs. Here too then, the old motto, *caveat emptor*, rings true.

