

A REALLY COOL PAPER (AND GRAPHIC) ON ETFS

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📅 December 8, 2016 👤 Wesley R. Gray, Ph.D.

📁 ETF Investing, Uncategorized

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[Zahi Ben-David](#) has an excellent new summary paper on the [state of academic research on exchange traded funds](#) with colleagues [Rabih Moussawi](#) and [Francesco Fanzoni](#).⁽¹⁾

The fact Zahi is a thought leader on ETFs and we are in the ETF business is kinda interesting because Zahi and I were definitely not talking about ETFs when we first met nearly 15 years ago!⁽²⁾

I love the graphic from the paper that outlines how ETF arbitrage works, which also helps investors understand the dynamics of [how ETFs trade in the secondary market](#). See below:

Figure 4. Illustration of the Propagation of Liquidity Shocks via Arbitrage



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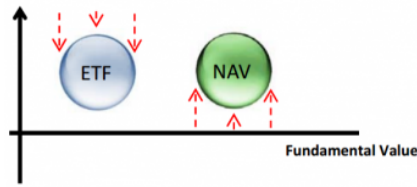


Figure 4c. Initial outcome of arbitrage: the shock is propagated to the NAV, and the ETF price starts reverting to the fundamental value.

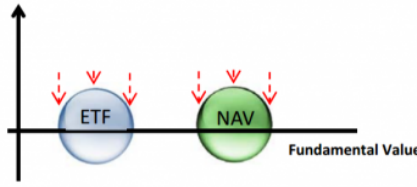


Figure 4d. Equilibrium reestablished: after some time, both the ETF price and the NAV revert to the fundamental value.

Here is the abstract and a [link to the paper](#) if you'd like to dig in:

Over two decades, ETFs have become one of the most popular investment vehicle among retail and professional investors due to their low transaction costs and high liquidity, taking market share from traditional investment vehicles such as mutual funds and index futures. Research has shown that in addition to the benefits of enhanced price discovery, ETFs add noise to the market: prices of underlying securities have higher volatility, greater price reversals, and higher correlation with the index. Arbitrage activity is a necessary component in minimizing the price discrepancy between ETFs and the underlying securities. During turbulent market episodes, however, arbitrage is limited and ETF prices diverge from those of the underlying securities.

We'll be following up with Zahi to get some in-depth answers on his thoughts about the future of the ETF marketplace. Stay tuned!

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1. ↑ We focused on Zahi for this interview, but Rabih and Francesco have some [wonderful](#) research articles at their websites.
 2. ↑ We entered the finance PhD program at the University of Chicago in 2002. I was a 22 year old with no clue and Zahi had years of experience, a wife, 2 kids, and a successful academic career ahead of him.
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found Alpha Architect. Dr. Gray has published three books: EMBEDDED: A Marine Corps Adviser Inside the Iraqi Army, QUANTITATIVE VALUE: A Practitioner's Guide to Automating Intelligent Investment and Eliminating Behavioral Errors, and DIY FINANCIAL ADVISOR: A Simple Solution to Build and Protect Your Wealth. His numerous published works has been highlighted on CBNC, CNN, NPR, Motley Fool, WSJ Market Watch, CFA Institute, Institutional Investor, and CBS News. Dr. Gray earned an MBA and a PhD in finance from the University of Chicago and graduated magna cum laude with a BS from The Wharton School of the University of Pennsylvania.



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