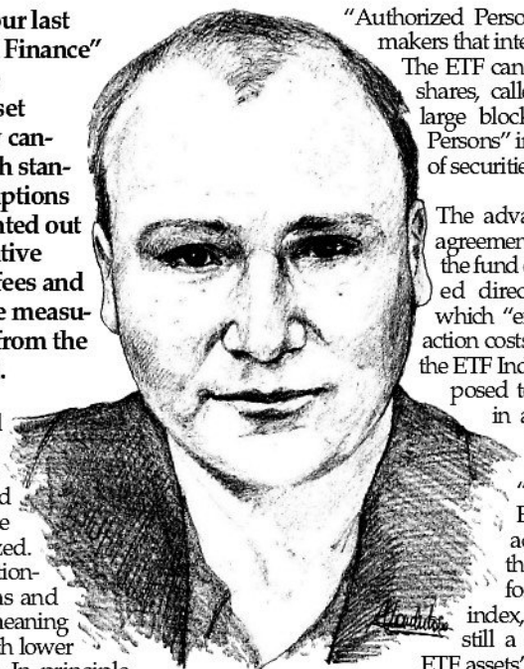
Research in Finance

The changing landscape of the ETF Industry

We argued in our last "Research in Finance" page that the Architecture of the Asset Management Industry cannot be understood with standard rationality assumptions in Economics. We pointed out that there exists a negative relationship between fees and abnormal performance measured by residual alpha from the Carhart 4-factor model.



In a rational neoclassical equilibrium expected alphas of investment funds should be equalized with fees so that after fee performance is equalized. Strangely, a negative relationship between fund alphas and fund fees are observed, meaning that investment funds with lower fees have higher alphas. In principle, alpha is supposed to measure skills and the value added of asset managers and this leads to a situation where the less skilled funds charge higher fees. Moreover, the average alpha for US Mutual Funds after correcting for risk exposure to the Carhart 4-factors is -0.66% (Lettau and Madhaven (2018)).

Consistent with a new view on market mechanisms, the Adapative Markets Hypothesis (Lo(2017)) the market is neither irrational nor rational but adapts like a biological organism. The Asset Management Industry first, some 20 years ago, started to innovate by creating so-called Exchange Traded Funds (ETFs, henceforth). The first US-ETF was actually created by State Street in 1993 and tracked the S&P500 index. It took some time till ETFs were popularized. Basically, ETFs were supposed to replicate indexes in a much cheaper way for investors and they could be traded on a regular basis on exchanges. ETFs, however, are not just Mutual Funds that track an index in a cheaper way.

Even though ETFs hold a portfolio of assets, they do not trade directly with markets to buy and sell the assets. Instead, the managers or sponsors of the fund have a legal contract with so-called "Authorized Persons", typically market makers that interact with the markets. The ETF can thus issue or redeem shares, called Creation Units, in large blocks with "Authorized Persons" in exchange for baskets of securities or cash.

The advantage of this sort of agreements is that the assets of the fund do not need to be traded directly on the markets, which "externalizes" the transaction costs of the ETF. Typically, the ETF Industry was and is supposed to track global indices in a much cheaper way. We quote Lettau and Madhaven (2018)): "There are also active ETFs that are akin to active mutual funds in that they seek to outperform a benchmark index, but to date they are still a small frction of total ETF assets". This is how the ETF industry is basically perceived.

In this regard, a recent paper by Easley *et al.* (2018) seems highly interesting. The authors generalize the model of fund management developed by Berk and Green (2004) and further elaborated by Berk and von Binsbergen (2015), in order to analyze the economic forces affecting the forms of active and passive fund management. The main analytical determinants of the Fund Manager earnings are the benchmark return, the decline of returns due to size, the amount earned from skill, the cost per unit of invested capital and the fixed costs of operating the fund. Typically, it is assumed that an active fund's performance is declining with size.

Well-informed investors can also invest in purely passive funds that still would cost a few basis points per year. In a rational equilibrium with well-informed investors, the return after fees on an active investment fund should be equal to the return after fees on a passive investment fund. This implies that the analytical determinants alluded to above, condition the size of the funds and thus the industrial organization of the fund industry in equilibrium. The typical industry parameters are such that active funds have a higher amount earned from skills but the decline in performance is faster with size. It can be shown that this leads to an equilibrium size for active funds that is smaller than for passive funds.

Those mechanisms explain the development of the size of the ETF Industry. Easley *et al. (2018)* also introduce so-called Passive-Aggressive Funds that have intermediary ranges of abnormal performance from manager skill and declining performance with size. They argue that the rise of "smart-beta" ETFs, leveraged ETFs as well as industry ETFs fall into that category. In order to test how active the ETF Industry is, they analyze US ETFs from 2000 until 2017. The degree of activeness of funds is typically measured using two types of measures. First, a measure based on holdings of the fund compared to the benchmark, called the "Active Share" (Cremers and Petajisto (2009)). The second measure is the "tracking error", which measures the standard deviation of the fund returns with respect to the benchmark. Cremers and Petajisto (2009) use those measures to characterize the activeness of the fund industry along two dimensions.

A completely passive fund would have a low active share and a low tracking error. The more active funds can be classified in three groups. First, a fund that makes some bets but those bets are highly correlated can have a low active share and a high tracking error. Those funds are called "Factor Bets". Second, funds that hold similar holdings of industries than the benchmark but stock pick within industries have high Active Shares but due to the diversification affect across industries have low tracking error. They are called "Diversified Stock Picks". The third category called "Concentrated Stock Picks" is selecting across industries and thus has a high tracking error and a high Active Share. The analysis of Easley *et al.* (2018) indicates that most of US ETFs belong to the "Diversified Stock Picks" and "Concentrated Stock Picks" category and hence are actually active funds. Most ETFs have "Active Shares" of more than 50% and tracking errors above 6% per annum. The funds classified as "Very Active", namely having an "Active Share" greater than 75%, make up 84% of the ETF population!

Easley *et al.* (2018) also analyze the cumulative fund flows into funds from 2000 to 2017. Interestingly, they find out that very active ETFs benefited from the highest cumulative inflows whereas mutual funds belonging to the same category were subject to the highest cumulative outflows. This means that market adaptations led to new forms active ETFs at the disadvantage of active mutual fund, a story consistent with Adaptive Market Hypothesis. It would be interesting to analyze the European Fund Industry in that perspective. Moreover, from a policy perspective, what would that trend imply for service providers of the fund industry and especially for the Luxemburgish Financial Center in the long term? Interesting applied research questions to follow-up on.

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Bourse de Luxembourg

Actions luxembourgeoises	Devise	au 28/02	au 31/01	Var	Plus haut	Plus bas
Aperam	EUR	28,72	26,70	7,57 %	29,31	22,17
ArcelorMittal	EUR	20,25	20,20	0,27 %	21,66	17,14
BlueMarHoldings	EUR	5,00	-	-	5,00	4,50
Brederode	EUR	58,90	57,80	1,90 %	61,90	50,30
EDIFY act. ord.	EUR	52,00	51,00	1,96 %	53,00	49,40
ImmoLux-Airport	EUR	250,00	224,00	11,61 %	252,00	218,00
Luxempart	EUR	54,50	51,50	5,83 %	55,00	47,20