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Interfamily competition on index tracking: The case of the vanguard ETFs and index funds



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Abstract

We provide evidence on the debate of 'Exchange traded funds (ETFs) versus Index Funds' using data of ETFs and index funds belonging to the same investing family. Data used involve the Vanguard funds and results indicate that ETFs and index funds present, on average, similar return and risk records. In addition, the risk of ETFs and index funds is similar to the risk of the tracking indices. However, the return of these alternative investing tools is slightly inferior to the return of benchmarks. Moreover, a positive relationship between return and risk is revealed. Further research demonstrates that ETFs and index funds are fully invested in their benchmarks. As a result, the tracking error for both ETFs and

index funds is low. Finally, the tracking error is found to be positively affected by expenses.

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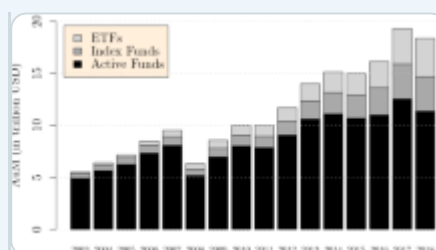
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Notes

1. We also gathered the closing trading values of ETFs from Nasdaq.com in order to estimate their percentage return and risk. Results were not significantly different than those derived from the net asset values. Therefore, in the subsequent sections of the study, we perform the analysis of ETFs' and index funds' performance and risk only in net asset values terms.
2. We examined the significance of the difference between the estimations of TE_1 and TE_3 via t -test. t -test value is equal to 7.93 implying significance at the 1 per cent level. The value of t -test is not reported in [Table 4](#).
3. In the next section, we provide evidence on the direct relationship between tracking error and expenses.
4. The value of t -test for the significance of the difference between TE_1 and TE_3 was 5.05, reflecting statistically different tracking error's estimations at the 1 per cent level.
5. For example, the MSCI Emerging Markets Index exhibits the higher average

daily return among all the benchmarks equaling 11 b.p. The relevant returns of its trackers, which are the VWO ETF and the VEIEX index fund, are equal to 10 b.p. for both the ETF and the index fund. In parallel, the expense ratio of the VWO ETF is equal to 0.30 per cent being the highest expense ratio among all the expense ratios of the sample's ETFs. This is also the case for the VEIEX index fund that has an expense ratio equal to 0.45 per cent. This expense ratio is the highest expense ratio among all expense ratios of index funds.

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