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Momentum strategies with stock index exchange-traded funds

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ABSTRACT

Previously reported momentum profits may not be available to individual investors who have more trading constraints. Therefore, I examine the profitability of momentum strategies with international iShares and US sector exchange-traded funds (ETFs) traded on the NYSE. The index ETFs provide individual investors easy access to international stock markets and US sectors for asset allocations. Using cross-sectional momentum strategies, in contrast to prior research, I find that momentum profits are insignificant for the late 1990s–2014 period. Few country and industry ETFs yield positive results using time series momentum, and the overall performance is worse than the buy-and-hold strategy. Time series momentum offers significant profits during the 2008 global financial crisis, but the profits decline sharply for the post-crisis period.

1. Introduction

The profitability of momentum strategies (buying past winners and selling past losers) over an intermediate holding period is one of the most resilient market anomalies. Few financial issues have

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drawn more controversies and interests than these strategies from both academia and the financial industry. Using data from 1965 to 1989, Jegadeesh and Titman (1993) show that US stocks with the best performance over the past 3–12 months continue to outperform the worst-performance stocks over the next few months. Evidence from international stocks and other asset classes has also been extensively provided by many papers.

Financial theories have not yet conclusively explained why momentum exists, although initial underreaction and delayed overreaction of stock prices are the most cited explanations. Some papers apply momentum strategies *across* asset classes. Of particular interest, Chan, Hameed, and Tong (2000) report significant momentum profits by reallocating funds across different international stock indices. Doeswijk and van Vliet (2011) find significant momentum profits using global sector indices.

In this study, I use 23 country exchange-traded funds (ETFs), 22 international iShares plus the US index ETF, traded on the New York Stock Exchange (NYSE) to examine the momentum profitability. International iShares of Barclay Global Investors have grown in popularity because they allow US investors to diversify their holdings in different countries. The sample countries are similar to those in Chan et al. (2000), but they use stock indices. As they point out, individual investors may not be able to implement their strategies because short selling is restricted and stock index futures are not available in some countries. Indeed, individual investors may not be able to exploit the momentum profits reported in prior research.

Focusing on domestic sector asset allocation, I also examine momentum profits using 14 US sector ETFs, consisting of the nine Sector SPDRs Funds that partition the S&P 500 and five other sector ETFs. I use the terms "industry" and "sector" interchangeably in this study, although industry generally describes a much more specific group of companies. Moskowitz and Grinblatt (1999) show that once US stock returns are adjusted for industry effects, momentum profits from individual stocks become insignificant. Buying stocks from past winning industries and selling stocks from past losing industries offer higher profits than individual stock momentum strategies. An important benefit ETFs provide to individual investors is ease of entry. ETFs can be sold short with no constraints and purchased on margin. See, e.g., Gastineau (2010), Li and Zhao (2014), and Tse and Martinez (2007). This is important for investors hoping for quick entry to capitalize on the market's upward and, particularly, downward momentum. ETFs also avoid the rolling over mechanism for futures contracts.[2] Nevertheless, using 1-month to 12-month returns over the periods of January 1997–December 2014 for the country ETFs and January 1999 to December 2014 for the US sector ETFs, I find the Jegadeesh–Titman momentum strategies do not offer significant profits. Replicating the approach of Chan et al. (2000) with weekly data using country ETFs, I still find no significant profits.

Andreu et al. (2013) have also used similar ETFs in cross-sectional momentum. They find an average excess return of 5% per annum and conclude that investors may use ETFs to benefit from momentum effects in country and industry portfolios. However, the excess returns are not statistically different from zero. As Andreu et al. (p. 140) point out, "from a statistical point of view, [their] empirical results are not strong enough to establish country and industry momentum effects using ETFs." They explain that "this is mainly due to the relatively short sample period that these country and industry ETFs have been available to investors." The sample period used by Andreu et al. ends in December 2009 and they consider 16 country ETFs and nine US sector ETFs. Thus, my updated data sample with a longer period (5 more years), a larger number of ETFs (7 more country ETFs and 5 more sector ETFs), and different weighting systems in forming the winner-loser portfolio (including the proportional weights used in Chan et al., 2000) may clarify the results of Andreu et al.

The momentum strategies of Jegadeesh and Titman (1993) and all the previously mentioned papers depend on the *relative* performance of securities or asset classes in the cross-section. Moskowitz, Ooi, and Pedersen (2012) show that momentum strategies can be used in the time series based on the past performance of the securities only: buying (selling) if the past 1–12 months offer positive (negative) returns. They report significant time series momentum in the equity index and other futures markets. Andreu et al. (2013) do not examine time series momentum. The recent period used in the current

[2] Because futures contracts expire in a year and only the nearby contracts are liquid, investors must rollover to the nearby contracts every three months for index futures.