Spiders: Where Are the Bugs?[1]

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One of the clearest trends in asset management is the rapid increase in the amount of individual and institutional money invested in indexed products. By far the most popular index which investors want to replicate is the S&P 500 index. While many academic studies have examined the characteristics of two instruments frequently used to replicate the S&P, index funds and futures, very little has been written about the newest way to replicate the S&P 500 index: Standard and Poors Depository Receipts (SDPR) commonly referred to as Spiders. The importance of Spiders can be seen by the fact that at the end of 1999 there were 19.8 billion dollars invested in Spiders and that in 1998 *daily* shares traded in Spiders exceeded any other stock except Compaq and daily dollar volume was the highest of any share traded. This is all the more surprising given the fact that Spiders have not been around very long.

There are three major reasons why this analysis is useful. First, the principal advantage of Spiders versus index funds is that they can be purchased and sold at prices which exist at any time during the trading day. As we will show, low-cost index funds produce higher returns than Spiders. Given that investors can use either vehicle, the difference in return gives a measure of the value of immediacy. The value of immediacy is an important issue in the literature on market microstructure. Second, since Spiders

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have become an important investment vehicle in terms of both trading volume and dollar value outstanding, their performance and characteristics are of interest by themselves. Third, the organizational form of Spiders is seen as the prototype for index funds of the future, and thus it is important to understand both their performance and the affect of the organizational structure on that performance.

Before analyzing Spiders, we will briefly review their history and important characteristics. Each Spider represents an ownership interest in the SPDR Trust. The Trust as stated in the prospectus holds all of the common stocks in the S&P 500 composite stock price index and is intended to provide investment results that, before expenses, generally correspond to the price and yield performance of the S&P 500 Index. Spiders are traded on the American Stock Exchange and can be bought and sold like any stock at any time during the day. One Spider has a price equal to approximately 1/10 of the price of the S&P Index. The initial deposit creating Spiders was made on January 22, 1993. The Spider was organized as an investment trust and has a mandatory termination date of January 22, 2218[3]. Any trust is governed by a trust agreement and there are certain aspects of the trust agreement governing Spiders which are important to understand. First, Spiders charge an expense ratio to holders of the Spider. This has historically been 18.45 basis points per annum. Second, a specific mechanism exists for changing the number of Spiders outstanding. Investors can create or delete Spiders in minimum units of 50,000 shares by engaging in transactions in kind plus getting or receiving certain sums of cash. For example, investors can turn in a bundle of stock matching the S&P Index plus cash equal to the accumulated dividends less management expenses and receive Spiders in return. Investors can do so for a payment of $3,000 (regardless of the size of the transaction).

There is another peculiar aspect of Spiders that arises from their organizational form. Spiders pay out the dividends the trust receives on the stocks that it holds quarterly; on the last business days of April, July, October and January (though the ex-dividend day of the trust occurs in the previous month). What is unusual is that the dividends the trust receives from the underlying stock is held in a non-earning account between the time it is received and the time it is paid out.

3 There are several circumstances, none of which in our judgement is ever remotely likely, that cause the trust to dissolve earlier.