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Single-stock futures: Evidence from the Indian securities market

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ABSTRACT

Although single-stock futures (SSFs) are useful multi-purpose stock derivatives, they have not received much attention in developed markets. We analyze SSFs in the Indian market to understand their contribution in price leadership. The findings indicate that trades in the stock market contribute more to price discovery than trades in the SSF market (72% and 28%, respectively), while quotes in the SSF market are more price innovative than quotes in the stock market (39% and 61%, respectively). Our analysis suggests that while stock and SSF trade returns have predictive ability for each other, in the case of quotes, only SSF quotes have predictive ability for stock and SSF returns.

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1. Introduction

Single-stock futures (SSFs) represent a significant development in stock-related derivatives. It is of academic interest as to why SSFs, as a derivative product, have not gained widespread acceptance in most markets, particularly in developed markets. We analyze the Indian securities market for evidence about the role of SSFs and their effectiveness in terms of price discovery, information share, and stock returns.

SSFs traded on the National Stock Exchange of India (NSE) have grown substantially since their inception in 2001. As to why other markets have struggled to generate interest among investors for SSFs, see, [Fung and Tse \(2008\)](#), among others, for a review of SSFs traded in a number of international exchanges. A single-stock futures contract provides a way to take advantage of arbitrage, speculative, and hedging opportunities, while reducing trading pressures on the underlying markets. Without futures contracts on individual stocks, arbitrageurs and investors must trade in the underlying assets, or trade options and index products.

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Manaster and Rendleman (1982) show that stock option prices contain additional information compared to stock prices at the closing price level. This difference occurs due to the trading costs, the absence of tick rule governing short sales of options, and the lower margin requirements of options. The SSF has similar characteristics in terms of trading opportunities. It is a linear and efficient instrument for short-selling a stock. It further enables a cleaner hedge relative to options with potential tax advantages. In this context, it becomes imperative to explore whether SSFs contain additional information in trades or quotes as do option prices.

The US typically has the most vibrant markets for stocks and derivative products. Passage of the Commodity Futures and Modernization Act of 2000 made SSFs legal in the US by repealing the Shad-Johnson Accord. On November 8, 2002, two exchanges, OneChicago and the Nasdaq Liffe Market (NQLX), started SSF trading. Single-stock futures offer a cheap and flexible way to gain equity market exposure for a wide range of purposes, such as hedging, speculation, and financial engineering, yet SSF trading is relatively infrequent in the US, the largest and the most sophisticated securities market in the world.

Research so far has concentrated on developed and mature markets for SSF trading. We look at the Indian market, where we find remarkable progress in SSF trading. Since their launch in November 2001, SSFs have shown incredible progress, making the NSE the most vibrant SSF market in the world. In 2004, the NSE traded more than 25 million SSF contracts. SSF trading is also successful in the Johannesburg Stock Exchange and Eurex. Markets in the developed economies such as Sweden, Denmark, Spain, Italy, Greece, Australia, USA, UK, Euronext.liffe, Hong Kong, and Bulgaria have SSF trading but that trading is not significant. The Futures Industry Association (July/August 2006) reports the NSE as the 13th-largest derivatives exchange by volume, and the NSE has the largest trading volume in SSFs worldwide, making it the largest global exchange for single-stock futures. In the first four months of 2006, the worldwide volume in SSFs was 84.5 million contracts. India's NSE, the largest global exchange for single stock futures, contributed 35.4 million contracts in total volume.

Studies show that SSF trading improves market efficiency. Ang and Cheng (2005) find that SSFs have a stabilizing influence on a market. SSFs, with lower trading costs and higher leverage provide better relief for arbitrageurs than for speculators. In a study of stock futures trading in Australia, Lee and Tong (1998) conclude that SSF trading offers many of the benefits associated with derivatives trading without increasing volatility or instability in the market. A coincidental increase in volume in the underlying stock market has made stock brokers less wary of losing market share and profits to the SSF market.

Our research investigates the success of SSFs in the Indian market and analyzes price discovery mechanics. We examine the most comprehensive sample of stocks and stock futures available over a 12 month period (252 trading days). We also examine the information linkage between the SSFs and their stocks.

Our findings suggest that trades in the stock market perform better in terms of price discovery and information share than do trades in the SSF market. This result is contrary to previous findings asserting that derivative products account for more price discovery and information share. However, both the stock and SSF trade returns have predictive ability for each other. Our quote analysis suggests that quotes on the SSF market lead quotes from the stock market in contributing to price discovery, and that SSF quotes have predictive ability for both stock and SSF trade returns. Both markets are mutually dependent and neither market simply free-rides on the other. More than 93% of the contracts traded in the SSF market are for single-contract trades.¹ This suggests the healthy participation of retail investors in the SSF market.

One plausible reason for the success of SSFs on the NSE could be the absence of an efficient or active stock-lending mechanism in the equity market. A competing hypothesis is that the first two of the three markets (the equity market and the stock-lending market) appear to act as hidden markets for the third — the SSF market. In the case of India, the equity and SSF markets came first, and so the SSF market may be seen as a supplement to the stock-lending market. In the case of the US, the equity and the stock-lending markets developed first, so together they act as a complement to the SSF market. This hypothesis further theorizes that even if the third market is introduced later on, it will not necessarily develop or, expand as the other two markets would continue to offer a hidden market. That may explain the lackluster response to SSFs in the US or other developed markets that have vibrant stock-lending markets.

¹ Sometimes, institutional investors can place single-contract trades to conceal their identities.

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