



Determinants of futures contract success: Empirical examinations for the Asian futures markets

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ABSTRACT

This study examines key factors that influence the success of exchange-traded futures contracts of Asian futures markets. The results show that successful futures contracts benefit from a large and volatile spot market. In addition, a smaller contract size has a positive effect on the futures trading volume, which in turn contributes to the success of the futures contract. For specific institutional factors, the choice of the trading platform and the relative size of exchanges are both important to the success of futures contracts.

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1. Introduction

Futures contracts are one of the most actively traded derivatives used to hedge risk. In the past decade, there has been an exponential growth in option and futures trading volume. In 2008, nearly 17.7 billion contracts of both futures and options were traded throughout the world. To ensure survival, each futures exchange attempts to keep searching for new contracts that will generate sufficient interest to sustain a profitable level of trading volume for the exchange. However, the risk of not being successful is considerable in listing futures contracts for the exchange (Carlton, 1984; Tashjian, 1995; Tashjian & McConnell, 1989).

For most futures exchanges, it is quite difficult to predict the success or failure of new futures contracts. Silber (1981) estimates that between two-thirds and three-quarters of new contracts fail to attract and sustain a profitable level of trading volume. Carlton (1984) analyzes the longevity and competition of US futures contracts between 1921 and 1983 and finds that most futures innovations fail within 10 years of their introduction. Similarly, Kolb (1991) finds that only three of every ten new futures contracts end up as a profitable product on the exchange, suggesting a high failure rate of futures innovations. Therefore, when developing new futures contracts, it is important to understand why futures markets succeed or fail. Countries considering the development of a futures market must be aware of the conditions required for the success of a futures market.

In financial literature, much attention has been paid to theories that explain the success or failure of futures contracts. In previous research, the success of futures contracts has been explained by some well-known observable variables, such as cash

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market size and cash market price variability (Black, 1986; Nothaft, Lekkas, & Wang, 1995; Silber, 1981). Another strain of literature explaining the success or failure of futures focuses on contract design (Black, 1986; Duffie & Jackson, 1989; Lien & Chan, 2002; Lien & Tse, 2006; Tashjian, 1995). Pennings (1998) argues that the specific structure, i.e., the promotion and distribution element of the marketing mix of futures exchanges is also a key factor that affects the success or failure of futures contracts.

In the past two decades, East Asia featured sustained and rapid growth, with impressive structural change and substantial improvement in living standards (Gamra, 2009). Unlike Brorsen and Fofana (2001) who seek to identify factors that contribute significantly to the success or failure of agricultural commodities futures contracts, this study aims at identifying key factors that influence significantly the success of financial futures contracts among the key East Asian futures exchanges that offer similar futures and options contracts. Specifically, we examine the factors that influence the success or failure of futures contracts and explore the effect of the specific structure of futures exchanges on the success or failure of ten futures contracts for six futures exchanges in five East Asian countries, including Taiwan Futures Exchange (in Taiwan), Singapore Exchange (in Singapore), Hong Kong Futures Exchange (in Hong Kong), Korean Options and Futures Exchange (in Korea), Osaka Securities Exchange and Tokyo Stock Exchange (in Japan).

2. Literature review

2.1. Definition of contract success

There are many criteria for the success of futures contracts. Measures that have been used in previous studies include the length of time traded or levels of annual volume of trading. Among them, Sandor (1973) uses the cut-off point of 1000 contracts traded annually to distinguish successful from unsuccessful contracts. In Silber's (1981) study of financial innovation by US futures exchanges between 1960 and 1980, contract success was defined by (1) the number of years a contract was traded and (2) an annual volume that exceeds 10,000 contracts. Carlton (1984) analyzes the longevity and competition of US futures contracts between 1921 and 1983. He defines contract success as a trading volume that exceeds 1000 contracts per day. Black (1986) also uses the Carlton's (1984) criterion to determine whether a futures contract is successful or not. Moreover, Dew (1981) introduces a more stringent criterion, by which a successful contract is defined as one with trading volume that exceeds 10,000 contracts per day. Furthermore, Holder, Tomas, and Webb (1999) examine factors that may determine the winner or loser of competing exchanges. They define a successful contract as one that trades at least 10,000 contracts per month.

While the abovementioned approaches suffer from using an arbitrary cut-off level of longevity or volume to designate futures contract success, Black (1986) suggests that the maximization of trading volume is an exchange's goal; therefore, the success of a contract can be easily quantified by measuring the volume of trading for that contract. Black (1986) also argues that it is much better to design a continuous measure that does not throw away useful information.

2.2. Determinants of contract success

Previous researchers have suggested numerous explanations for the success or failure of various futures markets (Black, 1986; Brorsen & Fofana, 2001; Carlton, 1984; Nothaft et al., 1995; Ross, 1989; Silber, 1981). Extracting from a list of criteria previous literature considered necessary for selecting contracts, we address the following characteristics as important factors to the success of futures contracts.

2.2.1. Size of cash market

Carlton (1984) points out that a large value of the spot market and a large number of potential participants are key reasons for the success of new futures markets. Holland and Fremault (1997) also show that futures volume is positively correlated to the size and volatility of the spot market.

2.2.2. Volatility of cash prices

Brorsen and Fofana (2001) argue that for futures contracts to be successful, cash prices must fluctuate enough to attract hedging needs and speculative interests. Chiou, Lee, and Lee (2010) find that the stock returns in emerging markets are riskier than the ones in developed countries. In addition, the legal and political environment in a country has an impact on the volatility of stock market. Telser and Higinbotham (1977) examine the price variability of 51 commodities classified into three groups—actively traded, inactively traded, and dormant. Results show that variation in average annual and monthly cash prices is highest for the active group, followed by the inactive group, and then the dormant group. Tashjian and Weissman (1995) also show that the volatility of cash prices has a positive effect on futures volume.

2.2.3. Market competition

Hedging is one of the main functions provided by a futures market (Lien & Shrestha, 2008). Economides and Siow (1985) note that if a reliable cross-hedge exists, it would be difficult for a new futures contract to establish liquidity in the face of this competition even if the later contracts provide a better theoretical hedge. Brorsen and Fofana (2001) argue that a cross-hedge is preferred to an own-hedge market, if the cross-hedge market is sufficiently more liquid. They find that such competition contributes significantly to explaining futures contract volume.

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