

# The Effects of Off-Balance-Sheet Financial Derivatives on Banks' Risk

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## ABSTRACT

The international financial environment is fast changing and the local banks compete intensively. The demand for financial manipulation and hedging causes financial derivatives to become one of niche businesses of the banks. The Basel Accord assumes the off-balance-sheet activities to increase the bank risk and gives the weights. The rates of the weights range from 0 % to 100 % to risk-based capital. However, the findings of many empirical studies on the relation of off-balance-sheet activities and bank risk reveal their negative relationship instead. The main purpose of this research is to analyze the effects of off-balance-sheet financial derivatives on banks' risk. The measures for risk include beta risk, equity risk, and implied volatility in this study. The sample consists of exchange-traded and OTC banks that are involved with the financial derivatives from 1998 to the third quarter of 2003. The regression models take into account the cross-section and time series effects simultaneously in the panel data methods so as to examine the influence of trading financial derivatives on the risk of banks. The results show that negative relationship exists between financial derivatives and bank risk ; that is, involving with off-balance-sheet financial activities reduces the risk of banks. The results also imply that the assumption that the Basel Accord sees the financial derivatives could increase the bank risk is probably unreasonable. Therefore, bank regulators should rethink the effects of financial derivatives on bank risk when assigning the weights to risk- based capital. On the other hand, based on the capital gap management, the best way to improve the deposit-loan structure is to take advantage of interest rate swap, futures, options, and asset securitization. Information disclosure and financial supervision is worthy another thought.

Keywords : Banking, Off-balance-sheet activities, Financial derivatives, Implied volatility

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