Efficiency and Stability of Korea's FX and Currency Swap Markets

According to the covered interest parity (CIP) theory, the swap rate is determined, under certain assumptions, at the same level as that of the interest rate differential between two countries, and if the market works efficiently, it immediately regresses back to an equilibrium level through interest arbitrage transactions when it deviates from a CIP condition. Korea's FX swap and currency swap markets, however, have persistently experienced an excessive gap between the swap rates and the interest rate differential, and this phenomenon has worsened since the second half of 2007. This raises doubts about the efficiency of the swap market due to the fact that there exist opportunities for making excess profits through interest arbitrage transactions. This may also serve as a factor undermining the stability of the financial system, since anxiety in global financial markets can spread through the swap market to the domestic market in accordance with the strengthening integration of domestic and overseas financial markets.

This paper examines the characteristics of arbitrage profits occurring in the FX and currency swap markets, analyses factors causing changes in arbitrage profits, and diagnoses the efficiency and stability of Korea's swap market to suggest what should be done to enhance the stability of the financial system.

In Korea's FX and currency swap markets, arbitrage profits seem to increase during periods of financial instability in line with the decoupling of swap rates from interest rate differentials, and this implies that arbitrage profits include a risk premium. This also suggests that arbitrage transactions can be lured by arbitrage profits only when they exceed a certain level once transaction costs and risk premiums are taken into account. Meanwhile, the rapid increase in arbitrage profits since the second half of 2007, when the subprime mortgage problem worsened seriously, can be explained by the rise in risk premiums upon the shift from a period of financial stability to one of financial uncertainty.

Whether or not arbitrage transactions generate excess returns is examined in this paper to analyze the efficiency of the Korean swap market. According to random walk and cointegration tests of simple arbitrage profits and those adjusted to exclude credit and liquidity risk premiums, excess returns were generated during the period under review in simple arbitrage profits, while not being maintained in risk-adjusted arbitrage profits. In this respect, it is analyzed that, even when the swap market continues to see arbitrage profits, the market remains efficient if it takes proper account of risk premiums.

Meanwhile, there seem to be some risk factors with the potential to destabilize the financial system, although the swap market works effectively. According to the measurement of how sensitively arbitrage profits respond to external shocks, the ability of the swap market to absorb shocks started to decline from 2006 and it has dropped particularly since the second half of 2007 when it was impacted directly by the liquidity problems of global financial markets. Furthermore, an analysis of the correlation between the bond and swap markets shows that the two markets affect each other at times of financial instability, which implies that external shocks may spread from one to the other market and even link the two in a downward spiral.

As the correlation between domestic and overseas markets has recently been getting stronger by way of the swap market, securing the stability of Korea's swap market is essential for financial system stability. To this end, it is important to strengthen domestic banks' capacity to secure foreign currency funds so that they can provide the swap market with funds without problem even during financial turmoil. From a medium- and long-term perspective, it is also important to nurture domestic financial institutions that can serve as swap banks. From a short-term perspective, however, it should be taken into consideration that domestic banks can make contracts with international financial institutions to obtain liquidity at times of financial instability. Furthermore, domestic banks need to make efforts to expand their global business by entering foreign markets, for instance, so that they can hedge foreign exchange positions without conducting foreign currency borrowings or swap transactions.