

Key Determinants of Liquidity in the Thai Bond Market

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Executive Summary

This paper represents a joint collaborative effort between the Bank of Thailand and the Bank for International Settlements (Asian Representative Office)² in improving research on bond markets in Thailand. In particular, this paper aims at identifying the determinants of liquidity in government bond markets in Thailand and comes up with policy recommendations, which would be helpful for the authorities in their future plans to develop the Thai bond market.

The Thai bond market has seen significant growth in the years following the Asian financial crisis in 1997. Authorities have recognized the importance and the need for deep and liquid bond markets and the role it plays in enhancing financial market resilience during times of stress. Markets for government securities also play an important role in providing a basis for a robust and efficient financial system as a whole. While steps have been taken to ensure that basic infrastructure in the bond market has been put in place, the lack of liquidity in the bond market has remained a major obstacle to market development. Not surprisingly, this lack of liquidity has made investors reluctant to trade bonds actively, with a large number of market players holding government bonds to maturity, in order not to incur daily mark-to-market losses.

This paper identifies and analyzes the key determinants of liquidity in the Thai bond market, measured by bid-ask spreads on government bonds. We draw upon these determinants to find ways to improve liquidity in the secondary market. The paper attempts to determine what policy actions the government and central bank can take to ensure that these key determinants are achieved, providing recommendations for the authorities' role in creating an environment which best facilitates a liquid secondary market.

An empirical analysis is conducted by estimating bid-ask spreads, controlling for the effect of trading volumes and yield volatility, using data between September 1999 and October 2004. Higher volume is expected to be associated with lower bid-ask spreads, an indication of better market liquidity, while an increase in volatility – which effectively poses higher risks – needs to be compensated directly through a higher bid-ask spread, and less liquidity. We also add a dummy variable to account for the market's perceived change in policy direction that came about with the change in central bank governor in May 2001, as well as other various effects on the bid-ask spread that cannot be captured by trading and volatility variables.

We conduct estimation based on the most traded issue in the Thai bond market, the LB08DA issue, which on average accounts for up to 20% of trading volume each year. Using an EGARCH specification appropriate for analyzing

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² Mr. Robert McCauley and Mr. Eli Remolona, from the BIS, have acted as advisors on this project and have visited the Bank of Thailand on numerous occasions to provide consultation on this project.

financial time series, we find that trading volume has a significant negative effect on spreads. Yield volatility, on the other hand, has a significant positive effect on spreads.

Given that yields depend on a number of other variables, assuming a constant volatility may be inappropriate in modeling yield volatility. We look at various specifications determining yield volatility, accounting for local market effects as well as spillover effects from international markets – particularly the US Treasuries market. Using an EGARCH model to estimate yield volatility allows the variance of the error term to change with the passage of time. We estimate volatility using historical yields of the LB08DA issue (THY08) based on lagged values of itself, as well as lagged yields from the US Treasuries market, given that the market closely monitors movements in the US Treasuries market in their pricing and trading decisions. We then replicate these steps at the aggregate level for data across all government bonds with maturity greater than 1 year, and find broadly similar results.

From our results we draw implications for policy, both for the Ministry of Finance in its capacity as an issuer of bonds, as well as for the Bank of Thailand in its role in safeguarding financial system stability. Given the positive effect of yield volatility on spreads, authorities should attempt to mitigate yield volatility, through improving tools and instruments for risk management, such as through creation of a vibrant derivatives market would allow effective hedging of interest rate as well as credit risks, while well-functioning private repurchase markets and short-sale transactions could help reduce yield volatility.

Given the negative effect of trading volume on spreads, we look further into the determinants of trading volume, breaking it down into its effects from free float/outstanding amount of bonds in the market, whether or not an auction occurs in that year, time to maturity, etc. We find that both *issue size* and *frequency of auctions* contribute significantly to trading volume, supporting arguments for reopening of issues and possibly focusing issuance on a few liquid tenors along the curve. The amount of bonds actually available for trade in the market (excluding bonds held by the central bank and insurance companies, the majority of which are buy-and-hold), namely the *free-float amount*, also makes a positive and significant contribution to trading.