

CHAPTER VI

CONCLUSION

From 1989 through 1996, Thai monetary authorities introduced many financial liberalization policies because of the trend toward financial liberalization all over the world. They retained, however, some controls and restrictions in order to maintain their dominant role and keep monetary autonomy. If the policies used to deregulate the market have been sufficiently effective, we would expect that the measurements of market integration should be increasing whereas the measurements of market segmentation should be dropping. However, the effectiveness of the removal of existing controls and restrictions is widely questioned. Therefore, the question of whether the Thai market is more integrated to the rest of the world motivates my study.

To answer that question, I propose empirical tests in the Thai equity markets and money markets. Chapter 3 investigates the view of market integration which states that assets with identical risk should have identical return. The study assesses the investment barriers to investing in the Thai markets from the viewpoint of foreign investors who invest in the Thai equity market. These barriers come from two sources: direct and indirect barriers to investment. An example of the first type is foreign ownership restrictions such that certain sectors have limits imposed on direct ownership of equity. Restrictions of the second type are exchange and capital controls that affect investment in markets, for instance, differences in accounting disclosure requirements.

The tests of international capital market integration which combine the single latent-variable test and the asset pricing model with investment barriers of

Black (1974) and Stulz (1981) are empirically estimated using GMM method. In addition, I propose the procedure to acquire the appropriate data set to use when testing for international market integration according to the concepts outlined by Errunza and Losq (1985). These researchers assumed the inability of a class of investors to trade in a subset of securities due to some institutional constraint. However, in our study, investors refrain from trading in a subset of securities not because of their inability but because of their preferences.

In this framework, foreign investors are not interested in all stocks in the local market. Domestic equity is segmented by expected ownership so that some stocks are purchased for investment by foreign investors whereas some stocks are not. According to this specification, the test of international market integration should be constructed by comparing the set of domestic assets preferred by foreign investors against foreign equities, instead of comparing national indices against each other. I propose a procedure to identify characteristics of stocks in each group no data that describes foreign portfolio holdings is readily available. To make the comparison, I have to make an extra assumption that the characteristics of stocks preferred by mutual funds will also be preferred by foreign investors since they both are institutional investors. For this study, foreign investors are Japanese investors, Hong Kong investors, Singaporean investors, UK investors, and US investors.

From the estimation, the model with investment barriers can explain the excess returns in the Thai market quite well in all systems. Consequently, the models cannot be rejected. Hence, τ_j s can be interpreted as investment barriers. If τ_j equals zero, the markets are fully integrated whereas τ_j would be significantly

positive to reflect the level of market segmentation. I find that the barriers to investment during 1993 to 1995 perceived by investors from Hong Kong, Singapore, and Japan are lower than those measured in the period of 1988 to 1992. In addition, investment barriers during 1993 to 1995 are insignificantly different from zero which implies complete integration between the Thai market and these countries' markets. However, the investment barriers faced by UK and US investors are higher in the second sub-period (1993-1995) relative to the first sub-period (1988-1992), implying the evidence of more segmented market.

The findings are also consistent with the trend of increased regional capital markets integration among Asian stock exchanges. The evidence also shows that investment barriers for Japanese investors were highest in the period of 1988 to 1992. The unequal barriers faced by foreign investors across countries have been due to various factors, with some factors more important than others across different countries. Unfortunately, the results from the UK and US systems are not as we expected. The barriers faced by these two countries' investors are increasing. One explanation is that the investment barriers faced by UK and US investors may not be binding; investors from the UK and the US can access the Thai market in other ways or investors can adjust unrestricted parts of their portfolios to offset limitations so that the estimated investment barriers may be mistaken.

In this chapter, I also conduct the robustness check by changing the source of domestic stocks preferred by foreign investors from the portfolios of mutual funds to the list of stocks that have non-zero trading volume on the Alien Board. The results are consistent with the previous finding that the barriers to investment

perceived by investors in Hong Kong, Singapore, and Japan are lower in the second sub-period than the first sub-period whereas the opposite is true for UK and US investors.

Finally, in Chapter 4, I explored the alternative view of market integration which states that if a market is integrated, global factors should play a dominant role in pricing an asset. The study assessed how the openness of the domestic interest rate determination have evolved from 1980 to 1996. I applied the model developed by Edwards and Khan (1985) with the extension to allow the degree of openness to vary though time. In the Edward and Khan model, a financial system in semi-openness (such as Thailand) can be defined as lying between two extremes. One is the fully open economy with no restrictions to capital flows. Being in such an environment should lead to convergence of risk-adjusted nominal rates of return on financial assets issued in different countries. Thus domestic rates are solely explained by uncovered interest rate parity. The other extreme is the case of a fully closed economy. In such an economy, domestic rates are influenced by domestic money market disequilibrium.

From the author's point of view, the parameter ψ will serve as a weight to measure the degree of openness. The index ψ will approach unity, reflecting the strength of country integration with the rest of the world. With ψ equal to zero, the country is completely closed; external factors have no role in determining the domestic rate. To extend the model, I suggest that degree of openness should be time-variant. However, I propose that the weight ψ cannot represent the degree of openness since it is a state variable that is unobservable. We have to infer the

degree of openness from the information we have. This notable point is done using the Markov Switching technique.

Before proceeding with the Markov Switching technique, I replicate the original model of Edwards and Khan (1985) for Thailand. I discover the expected sign of the estimated coefficients. The weight ψ also shows evidence of a highly opened market. Although the results cannot be used to answer our question (because the "degree of openness" measurement cannot be correctly interpreted), the results at least shed some lights to our study of how Thai interest rate are determined. Thus, I propose a way to represent the appropriate measurement of the degree of openness as well as propose a way to allow the degree of openness in the model to vary with time. The Markov-switching technique is used to examine the behavior of interest rates and the liberalization as a change in regime between segmentation and integration. In this framework, the degree of openness is measured as the probability of being in the integrated regime for each period.

Above all, the model is flexible enough to allow cycling back and forth between the integrated and segmented states. It also allows the possibility of the single shift to apply to the real case since the liberalized policies generally are permanent changes. The results confirm that there are two different regimes observed from the data. There is also evidence that the probability of remaining within a state is high, implying the sort of "long swings" consistent with changes in the states resulting from permanent changes in policies governing the integration of markets. The most interesting finding is the probability of being in an integrated regime (regime 1) for each period. This measurement is very low in the early 1980s before sharply increasing in 1989. The degree of openness closes to unity in

1992. The upward trend of the openness parameter in the study closely matches with the financial policy reforms implemented in Thailand.

A. Discussion of Policy Implications

Given the need for capital flow, various restrictions to foreign investors have been removed. As a result, the Thai securities market should move toward more integration with other markets. The findings confirm this statement, showing that values for risky investments vary depending on the nationality of a prospective investor since the barriers to investment differ across an investor's country and also across assets. Even though various restrictions have been relaxed to stimulate foreign investment, the indirect investment (such as unfamiliarity of foreign investors toward some assets) generate significant segmentation. This evidence has implications for regulators and policy makers that price differentials will exist whenever foreign barriers are significant and effective. Therefore, if they intend to liberalize the market in order to increase capital flow, they have to seek to remove the effective barriers that are explicitly important to foreign investment.²² Although it may become optimal to remove the restrictions on share ownership in our framework, such removals will have an effect only on the subset of assets which we refer to as eligible assets. The reason behind this is that even though there are legal restrictions on ownership limits, foreign investors still do not invest in the assets considered as ineligible assets in our study. As a result, I indicates

²² *In our market setting, while regulation of ownership restrictions are almost always equally binding for firms in the same industry, evidence exists showing unequally binding barriers imposed to those firms. Thus, the unequal barriers will affect the share price and explain why eligible assets are generally traded at a premium relative to the ineligible assets.*

that besides relaxing the legal constraints, policy makers should provide more benefits to attract foreign investment. Furthermore, the evidence on the preferences of foreign investors toward some characteristics (such as large firm size and long period of listing) suggests that good information flow and privatization of large well-known companies may attract foreign investors.

The results of this study also support the view of increased regional market integration, since the investment barriers faced by the Hong Kong, Singapore, and Japan investors have been decreasing. This is consistent with the trend in goods markets in which the volume of trading has increased. The implication of the regional market integration is that the region economic problems occurring in one country may spread throughout the region. The evidence supporting this idea has already happened. One should notice that the Asian economic problems during 1997 started from the Thai financial problem. Within a short period of time, Thai problems led to problems in other countries within the same region.

Stylized evidence from recent market integration suggests that integration expands markets in terms of participants, listed firms, market value, and the capital flow necessary for integration. However, policy makers might be concerned that increasing integration as found in our study will lead to lower diversification benefits, and in turn, might reduce the international investment for stocks in the Thai equity market. I would argue that these concerns are not convincing since with the more integrated market in which barriers to investment are decreasing, foreign investors will face lower costs for diversifying their portfolios to include Thai securities, yielding higher benefits.

In addition, the study implies that domestic interest rates were influenced by both domestic monetary conditions and external factors. Filter probabilities and the parameter estimates from the two-state model provide a consistent and convincing case that the behavior of domestic interest rates has been driven by changes in the economic policies of the authorities.

Although monetary policy still plays a role in stabilization policy, its importance has been decreasing. As a result, policy makers may be concerned about the impact of international integration on the volatility of domestic interest rates, since, typically, the volatility is viewed to have a positive correlation with the openness measurement. I found evidence to the contrary.

The volatility of domestic rates in the integrated market is lower than the volatility in the segmented market. Another implication is the evidence of increasing integration in equity and money markets can be expected to further facilitate the flow of funds. Therefore, investors, regulators, and policy makers should practice and be ready to use global-asset allocation strategies.

Finally, since our sample period ends before the 1997 financial crisis. It would be interesting to see that what would happen during this period. The model developed in this study should be good enough to use for the post-crisis period. I believe that Thai market would remain in the integration state since various restrictions have been removed to deregulate our market in order to satisfy the standard of the International Monetary Fund (IMF). However, this issue needs to be studied in the future.