Chapter 5

Conclusion

5.1 Conclusions

This paper employs 1402 exchange rates observations as the study sample for each country, from 2006 to 2012. Use linear and nonlinear methods find the appropriate exchange rates rate of return forecasting models for People's Republic of China and Thailand in this special period. And based on copula theory, we analysis the dependence structure of these two countries' exchange rates return in percentage. The empirical investigation shows those followings results:

The results of this study confirmed that the Self-Exciting Threshold Autoregressive Model (SETAR Model) and the Autoregressive-linear model (AR-linear Model) were suggested as the appropriate forecasting models for People's Republic of China's and Thailand's exchange rates return in percentage during 2006 to 2012, respectively. Based on the Empirical Copula approach and Student's t Copula approach, the dependence measures are very small between returns in percentage of People's Republic of China's exchange and Thailand's exchange.

Those results are consistent with the researches of Peel and Speight (1994), Liwe et al. (2003), Liu Wei (2008) and Pisit Leehtam et al. (2011). And similar with the researches of Brooks (1996, 1997).

The results indicate that, on the one hand, the behaviors of these two countries' exchange rates return in percentage are different. Thailand's exchange rates show the linear feature because its economy affected by world's financial crisis serious. On the other hand, it means that the currency of both countries' did not strong enough to challenge.

From macro aspect, different monetary policies and financial system took in these two countries are the main reasons. From micro aspect, in the foreign exchange market the investors' expectations are different. Therefore, government based on their own exchange rates expectation should take a series of workable monetary policies and financial leverage tools to keep their currency value growth sustainable and healthy. And currency investors should take reasonable methods to avoid risks.

This thesis not only helps government modify the monetary policy based on their own need but also guide investors understand the foreign exchange market mechanism. Furthermore, for the overseas students who study in People's Republic of China and Thailand or other countries, the methodology of this thesis will provide a conference when they analysis the exchange rate between their own currency and the local currency. In order to help them realize the arbitrage.

5.2 Recommendation

5.2.1 Policy suggestions

From these results, we have to face the problems as list: First, these two countries' exchange rates are hard to challenge, how can we let them more flexibility when we use monetary policies. Second, if there is another financial crisis break up, how these two countries avoid or decrease the damage. Third, People's Republic of China and Thailand as important international trade partner for each other, how can they strength the cooperation in fiscal apart. Based on these questions we will provide some recommendation of policies for People's Republic of China's government and Thailand's government.

According to the result of the appropriate forecasting models, we found that these two countries' exchange rates return in percentage is different and the currencies of these two countries' are hard to challenge (Table 4.6 and Table 4.7). The government should notice that, exchange rate policy as one of the monetary policy important part. It adjusts one country's currency value in the middle run. People's Republic of China's and Thailand's Central Bank should take the measures which will adjust the exchange rate fluctuation floating degree. These measures will make the exchange rate more flexible and increase the uncertainty of foreign exchange market that will change the currency appreciation unidirectional expectation. The advantages

of these measures are obviously. In the short run it will inhibition the hot money inflows and decrease imported inflation pressure. In the middle run it will guarantee the purchasing power of each country's currency. Thus, it will ensure these two countries' currency value keep the sustainable and healthy increase.

From the result of Thailand's appropriate forecasting model, it shows the linear characteristic in this special period from 2006 to 2012 (Table 4.7). We believe that this result cased by the financial crisis which broke up in 2008. Therefore how can we avoid or decrease the damage from financial crisis will be another main point. The exchange target zone will be a tool help People's Republic of China and Thailand overcome difficulties when financial crisis or economic crisis break up. This measure also helps these two countries maintain the stable international trade settlement, because it avoids the serious exchange fluctuation. ASEAN Ten plus Three (China, Japan and Korea) plan needs each member pay more attention on the region exchange rates, and keep exchange rates fluctuation in a reasonable level. And this measure is different with the fixed exchange rate policy and management floating exchange rate policy. Because if floating range in a reasonable level, governments needn't intervene the foreign exchange market supply and demand and according to the target zone need, each member's government can adjust the target exchange rates.

The policies of managed floating exchange rate regime and target zone are similar with the research of Krager and Kugler in 1993 and Krugman in 1991. These

policies are very useful and workable when we help one country through the financial crisis or economic crisis and keep their own currency flexibility.

From the result of these two countries' exchange rates return in percentage dependence measures is not strong (Table 4.9 and Table 4.10). Different policies and different foreign exchange investors' expectation will be the reasons. When People's Republic of China's currency value in foreign exchange market decreases rapidly, the government should decrease the fiscal expenditure and increase the tax. When the currency value increases rapidly, the government should increase the fiscal expenditure and decrease the tax. These measures based on health and sustainable demand of exchange rates. These fiscal policies also apply to Thailand. People's Republic of China and Thailand can strengthen fiscal policies cooperation, remained the bilateral exchange rates stable. And in foreign exchange market, these methods will eliminate the investors' higher speculate expectations of these two countries' currency.

Furthermore, foreign exchange as the international settlement tool and one of a country's wealth reserves methods, when we import we should use soft currency (weak currency, this currency is unstable) and when we export we should select the hard currency (safe-haven currency or strong currency which was widely used in international trade and reserve) for international settlement. As Schnatz et al (2004), Camarero et al. (2005) and Peel et al. (2005) mentioned, the real exchange rate will

based on one country's own productivity. Therefore, People's Republic of China and Thailand should continuously improve their productivity in the long run. These methods will help us reduce the loss of foreign exchange reserves and adjust the value of their own currency.

5.2.2 Discussions

This paper investigates the relationship between People's Republic of China's exchange rates return in percentage and that of Thailand during 2006 to 2012.

Moreover, in this paper we use statically copulas to measure the dependence structures. But if we switch to the time-varying copulas, we will find that the dependence measures will not constant. We will show part of the time-varying copulas results. And the related theories and the results we will no longer to explain in this paper.

Table 5.1: Time-varying copulas selection based on AIC and BIC

Copula Classes	Log Likelihood	AIC	BIC	ω	α	β			
Time-Varying Normal copula	-6.68	-13.35	-13.35	0.084 (0.0022)	1.1753 (0.0216)	-0.0434 (0.0018)			
Time-Varying rotated Gumber copula	-38.62	-77.24	-77.23	0.7921 (0.0028)	-2.7488 (0.0068)	0.2732 (8.21e-04)			
Copula Classes	Log Likelihood	AIC	BIC	ω^U	α^U	β^U	ω^L	α^L	β^L
Time-Varying SJC Copula	-46.53	-93.05	-93.04	1.8103 (0.0472)	1.5520 (0.0405)	-15.2704 (0.1687)	-21.0822 (0.0267)	9.61e-06 (0.0267)	-6.78e-06 (0.0267)

Source: From computed

Table 5.1 shows the parameters' value of Time-varying copulas. Compare with the first two Time-varying copulas, the Time-varying SJC copula's parameter value separated into two parts. First for the upper tail, we use "U" stands for it. And second for the lower tail which we use "L" stands for it.

From Table 5.1, we still based on AIC and BIC minimum theory, the Time-varying SJC copula is the appropriate Time-varying copula which among all candidate Time-varying copulas. The result indicates that when we use Time-varying copula to analysis the dependence structure, the upper tail will more sensitive than the lower tail. It means the upper tail will change along with time. But the lower tail will keep constant, and its dependence measure will consistent with the parametric static Student's t copula. Figure 5.1 will shows the Time-varying dependence relationship between People's Republic of China's exchange and Thailand's exchange.

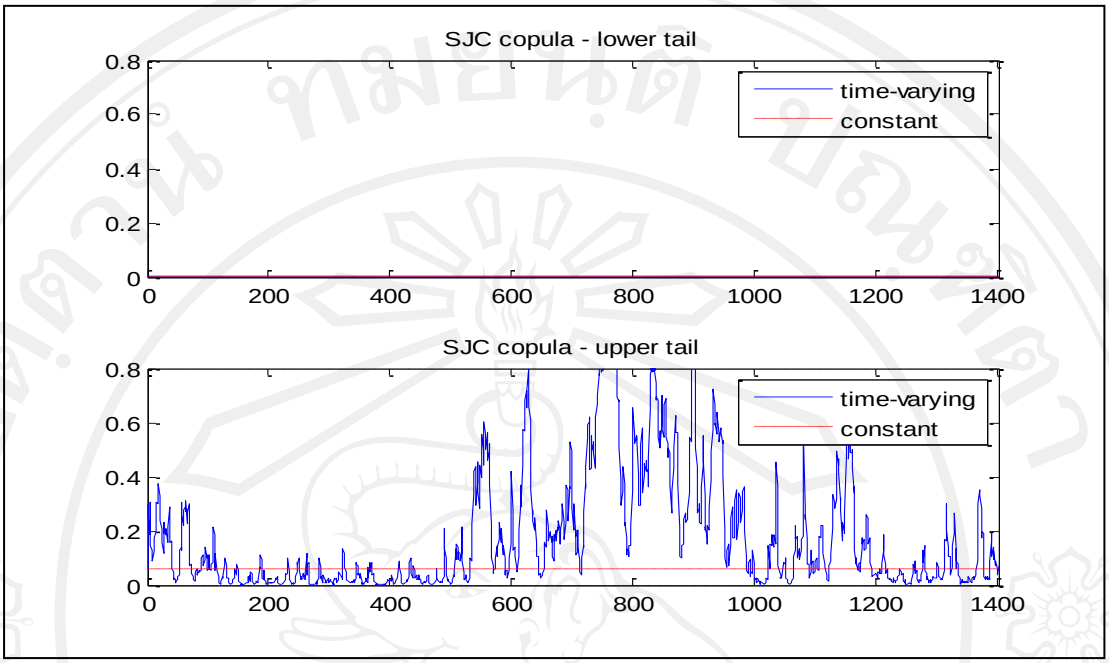

Figure 5.1: Dependence measures based on Time-varying SJC Copula

Source: From computed

From Figure 5.1, we get that the dependence measure is not constant. It will change along with time. From data time interval we find that the highest measure value is almost 80% from 2008 to 2009. Because global financial crisis broke up and quick swept across Asia. In this crisis USD and EUR devaluation rapidly, Chinese currency and other countries' currencies were forced to face appreciation. Chinese currency as one of the important settlement currencies in Asia shows the linkage effect with other Asia countries' currencies.

5.2.3 Future researches

For the further research, we will provide four parts of ideas.

First of all, for data processing not only switch our data in to return in percentage but also we can use Box-Cox or Johnson conversion mechanism let our data smooth and more accurate.

Second, based on linear and nonlinear models we can use out-of-sample-forecasting technique forecast each country's exchange rates in the future. Such as ARFIMA models which belongs long-memory process.

Third, the time-varying copulas can be improved to analysis the relationship between People's Republic of China's exchange rates and Thailand's exchange rates by adding each country's interest rates or other variables. If two or more countries exchange rate dependence measures are very strong, the further research can use Panel-Data to do the Causality test.

Last, some further researches on extreme value copula and the VaR (Value at Risk) analysis, and find the reasonable portfolio for foreign exchanges.