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I. Introduction; A critical mind

The exchange rate system shifted to floating exchange rate system mainly on developed country around 1973. On the other hand, a lot of developing countries maintained fixed exchange rate system. The reason that developing countries maintained fixed exchange rate system is that promotes export by taking stability of exchange rate, and also that was because it is benefit for capital inflow from overseas countries. In addition, returning to fixed exchange rate system is found with process of EU currency unification.

Otherwise as the experience of Asia currency crisis showed the country has shifted to floating exchange rate system. The reason is that because fixed exchange rate could not be able to prevent sudden movements of exchange rate.

In economic theory, one does assert floating exchange rate system intercept disturbance from overseas countries to domestic economy and on the other hand does assert floating exchange rate system does not always intercept disturbance from overseas countries to domestic economy by putting assumption for analysis it.

In practical movement and theoretical side, an answer for adoption of exchange rate system of whether fixed exchange rate system is desirable or floating exchange rate system is desirable is not shown definitely yet.

In this thesis, we consider floating exchange rate system has effect to intercept disturbance from overseas for Korean economy from such a point of view for analyzing relation of exchange rate system with economic stability empirical.

The Korea has used adjustable fixed exchange rate system from 1980’s. However, it shifted to floating exchange rate system since December of 1997 as of the monetary crisis. Accordingly we divided two periods (before 1980’s and after 1980’s) as follows to analyze it.

II. Research manner · Contents

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The features in the analysis of this thesis are as follows.

At first, we consider relation between the exchange rate system and economic stability (GDP) by using of time series analysis (mainly, SVAR model).

Usually the VAR model is a explaining model with the predetermined endogenous variable without considering the mutual-dependence relation between these predetermined endogenous variable in the same time. As of this problem, in this paper, we use SVAR model restricting the long-term relation between variables definite.

A Structural VAR model is represented as follows.

\[ X_t = A_0X_t + A_1X_{t-1} + \ldots + A_pX_{t-p} + e_t \]  \hspace{1cm} (1)

where \( X_t \) = column vector or endogenous variable, \( A_0, A_1, \ldots, A_p \) are coefficient matrix of \( n \times n \) to show mutual-dependence relation between variables in each period. \( e_t \) = column vector of disturbance terms of structure form. We suppose \( A_0 \) to be 0. We suppose \( r \) to be 0. In analysis of a Structural VAR model, constraint condition between variables is necessary. Various methods exist in the constraint, but here we suppose long term constraint between variables.

In the second, we analyze relation between exchange rate system and economic stability for Korea economy in empirical analysis.

We suppose long term constraint between variables written as follows.

\[
\begin{bmatrix}
  a_{11}(1) & 0 & 0 \\
  a_{21}(1) & a_{22}(1) & 0 \\
  a_{31}(1) & a_{32}(1) & a_{33}(1) \\
  a_{41}(1) & a_{42}(1) & a_{43}(1) & a_{44}(1)
\end{bmatrix}
\]

where \( a_{ij}(1) \) is a coefficient to represent long term relation of each variable. \( a_{ij}(1) \) shows a change of Japanese nominal exchange rate to U.S. \( a_{2j}(1) \) shows a change of American GDP. \( a_{3j}(1) \) shows a change of quantity of American currency. \( a_{4j}(1) \) shows a change of Korean GDP. For example, we show the influence that a Japanese nominal exchange rate to U.S. gives to American domestic income with \( a_{21}(1) \). In addition, the notation such as \( a_{11}(1) \) shows influence of change of oneself. We are similar as follows. It is similar with this kind of notation.

Concrete contents of that constraint are as follows.

2. American domestic income gives influence to a quantity of American currency, Korean
income.

③ A quantity of American currency gives influence to Korean income.

④ Korean income does not give influence to a quantity of Japanese nominal exchange rate to U.S., American domestic income, and American currency.

0 in matrix means that will not be affected in a long term.

III. Conclusion

In this paper, we did empirical analysis for Korean economy from viewing of relation of exchange rate system to economic stability as one method to grope for the optimal exchange rate system. And, as a result of impulse response analysis, the next result was provided mainly on stability of Korean GDP.

(i) In response of Korean GDP for a change of Japanese nominal exchange rate to U.S. a change by a shock in floating exchange rate system is smaller than that of fixed exchange rate system.

(ii) In impulse response of Korean GDP for a change of American GDP, a change by a shock in floating exchange rate system is smaller than that of fixed exchange rate system.

(iii) In impulse response of Korean GDP for a change of quantity of American currency, a change by a shock in floating exchange rate system is smaller than that of fixed exchange rate system.

In addition, it was shown that floating exchange rate system let Korean GDP change more stably than that of fixed exchange rate system as a result of variance decomposition of forecast error.

In this thesis, we analyzed economic stability (GDP) as a thing of one grope of the optimal exchange rate system. However, we need expansion of more analysis. The one of them is problem of real exchange rate. In addition the second one is that, in this paper, we analyzed mainly the current balance in the balance of payment, but a problem of balance of capital account exists when we think about currency crisis. These are future problems.

Main references