A Study on Indicator System of Financial Monitoring and Prewarning System

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Accompanying with the rapid development of financial globalization, financial unrest and monetary crisis become more and more frequent. The Asian financial crisis, which began at 1997, affected the world economics seriously, and the reason causing the crisis also exists in China to some extend. When we generalize this painful lesson, the monitoring of financial operation and the prewarning of financial risk become an important research subject that created more and more attention. Refer to the popular methods of international financial circle, it is necessary to establish a practical financial monitoring and prewarning system, and set a suit of scientific and effective indicator system.

1. The classification of financial monitoring and prewarning indicators

It can be classified as financial monitoring, prewarning, and evaluation indicators from the contents; be classified as national, regional, and endemic indicators from the levels; and be classified as leading, timing and lagging indicators. However, the premature prewarning indicators must be leading indicators.

2. The selection of financial monitoring and prewarning indicators

Using qualitative and quantitative methods, it includes two stages that are initial selection and screening. First, it selects multiple financial statistical indicators, and then uses the following screening methods:

(1) Range clustering method. Its calculation formula is:

$$D_{ik} = \sqrt{\frac{1}{m} \sum (X_i - X_k)^2}$$

(2) Cyclic matching method. It is to compare each indicator with the basic cycle mode, calculate the matched data, and collate by classification.

(3) K-L information content method. The formula to calculate the K-L information content is:

$$I(P, Q) = E(\ln P / Q) = \sum P_i \ln P_i / Q_i$$

We compare the results come from the above three methods, and access the indicators in the intersection.

3.   Financial monitoring and prewarning indicator system

The principles of setting indicator system are scientific, sensitivity, practicability, feasibility, and correlation. According to those principles, the author sets the indicator system from the screening indicator set as follows:

(1) real GDP growth rate;

(2) actual exchange rate arise;

(3) inflation fluctuation rate;

(4) go down rate;

(5) actual interest rate arise;

(6) bad loan rate of climb;

(7) export rate of decline;

(8) foreign exchange reserves slip;

(9) the ratio of deposit to loan;

(10) financial crime rate.

Reference

[1]   Qui Peiqun, Financial Monitoring and Prewarning System, Shaanxi People Press, 1996

[2]   Gao Wei, The Discuss on Setting Financial Risk Prewarning Indicator System, Jiangshu Statistics, NO.1, 2000

[3]   Zhou Xinhui, The Study on Financial Crisis Prewarning System, Financial Research, NO.2, 1999

[4]   IMF: "Financial Crises:characteristic and indicators of Vulnerability", Annual Report, May 1998