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Warning Indicators Suggest the Downturn of the Chinese Economy

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An analysis of China's business cycles designed to forecast recessionary periods has revealed that the probability of a Chinese recession will reach 100 percent in September 2008. This is the result of inflation, the sense of overheating of the stock market and a slowdown of the U.S. economy. Although this estimation result may vary somewhat depending on the methodology used, it is certain that the Chinese economy has reached a warning zone, it is clear that the Chinese economy has reached a warning zone. A more detailed report of this study will be released in a JCER discussion paper¹.

Peaks and Troughs of the Chinese Economy are Determined by Growth Rate Cycles

Although there are many analyses on the Chinese economy, there are few papers on its business cycles. First, I will explain Chinese business cycles.

China's official statistics on its business cycles is the composite index (CI), released by the China Economic Monitoring and Analysis Center (CEMAC), a branch of the National Bureau of Statistics of China. This composite index comprises leading series, coincident series and lagging series, and is a composite of indicators sensitive to business conditions. Its major difference from the Japanese composite index is that while the Japanese CI basically identifies "classical cycles," that is changes in the levels of economic activities, the Chinese CI identifies "growth rate cycles." While the former is a composite of the level of each indicator (some indicators are changes from the previous year), the latter is a composite of the change from the previous year of each indicator.

In China, high growth is the normal state and a chart of economic activities level can be represented only by an upward curve. It is impossible to identify peaks and troughs. Therefore, it is reasonable to assume that short-term business cycles can be identified by growth rate cycles.

According to CEMAC, there have been three turning points in the Chinese economy in recent years: a peak reached in May 1993, a trough reached in April 1999 and a peak in March 2004. It implies the present economy is still on a downward trend. Okamoto (2007) identified new peaks and troughs in addition to the officially announced turning points by applying the Bry-Boschan procedure to the coincident CI released by CEMAC. Okamoto's analysis reveals that the Chinese economy is now in an expansionary phase after having reached a trough in February 2005.

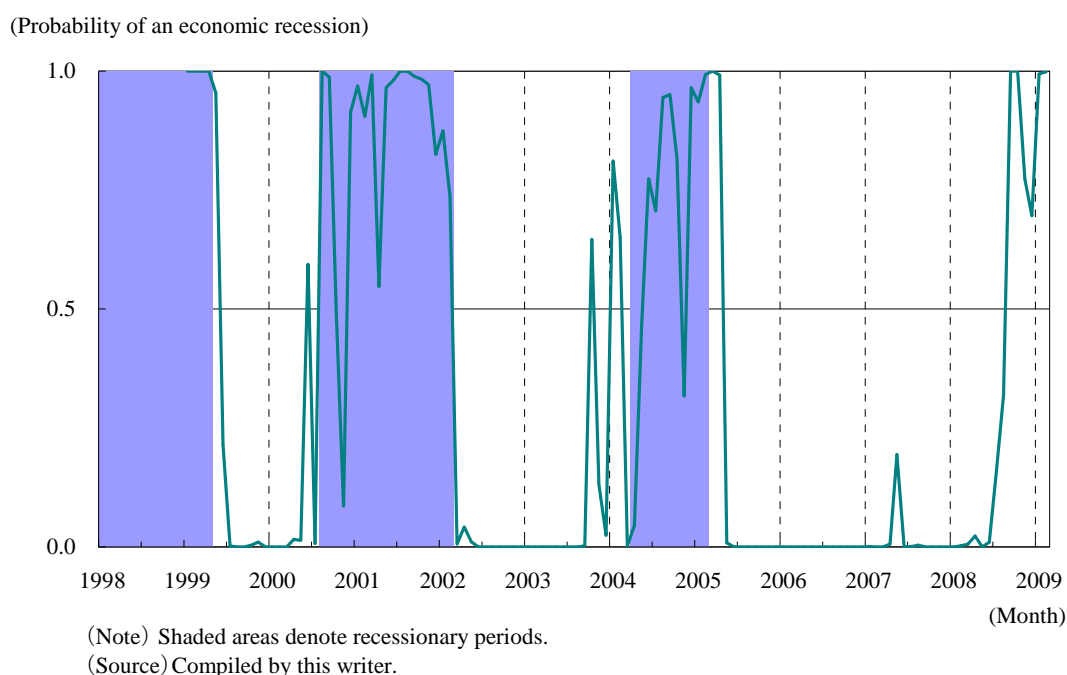
¹ <http://www.jcer.or.jp/eng/research/discussion.html>

We have also tried to identify turning points of the Chinese economy by other indices. We used the Asian Economic Index (China) of the Japan Center for Economic Research (JCER) or the leading CI (China) of the Organization for Economic Cooperation and Development (OECD). Our results were more or less the same as the above finding with respect to peaks and troughs in and after 2000.

An Early-Warning Indicator for a Year to Come

In order to predict the future of the Chinese economy, we have compiled an early-warning indicator (Figure). Its major characteristic is that it can identify the probability of an economic recession one year ahead from the date of officially released data. We use business conditions (recessionary period=1, expansionary period=0) as dependent variable, and use indicators which tell us business conditions about one year early as independent variables. In estimation, we used the data one year before as independent variables. It enables us to forecast the business conditions one year ahead by applying the present data of the independent variables..

Figure Early-Warning Indicators Suggesting the Onset of a Recessionary Period



After examination of numerous independent variable candidates, we found that the following data are suitable for forecasting the economy. Regarding to Chinese data, we chose 1) money supply (change from the previous year) as a leading indicator of the consumer price index and 2) the interest rate-adjusted price-earnings ratio (PER) of the Shanghai Stock Exchange Composite Index (SSEC) as an indicator of the deviation from the fair values of share price. As the influence of external factors has grown in recent years, we used 1) the leading CI of the United States, 2) the Dow Jones Industrial Average Index (change from the previous year) as a leading index of interest rates, and 3) the

Reuters/Jefferies CRB Index (change from the previous year), which shows changes in the international commodities markets. The estimation covered the period from January 1999 to October 2007.

Chinese Economy to Enter a Warning Zone in the Summer of 2008

Early-warning indicators are represented by figures between zero and 1. Zero denotes that the probability of an economic recession is zero, while 1 denotes that the probability is 100 percent. Due to constraints of data availability, estimation was possible only for the period from 1999 and onward, but the results have proved a accuracy of the past two periods of recession.

The estimation results show that the probability of recession began to increase from around March 2008 and will reach 100 percent in September. China's money supply has been increasing sharply and has, in fact, contributed to the rise in the inflation rate. The interest rate-adjusted PER has been declining since its peak in the autumn of 2007, but is still at a high level. The CI in the United States has been on the decline, and the Reuters/Jefferies CRB Index has been rising. Both of them push up the estimated probability. The decline in the rate of change from the previous year of the Dow Jones Industrial Average Index is the only indicator to pull down the estimated probability, as it foretells a future fall in U.S. interest rates, which in turn will have an expansionary effect on the Chinese economy.

One should, however, be a little cautious about the above results. In China, there are five-year political cycles linked to the convening of the National Congress of the Chinese Communist Party. As a result, in years ending either with a 3 or an 8 (such as 2003 and 2008), the economy tends to expand. Furthermore, the Olympic Games will be held in Beijing this year. Even after taking all these factors into account, inflation and the sense of overheating of the stock market in China, as well as disturbances in the world economy tell us that the Chinese economy has reached a warning zone.

[Reference]

OKAMOTO, Yusuke (2007), "*Chugoku no Keiki Junkan*" (Economic Cycles in China), *Keiki to Saikuru* (Business Conditions and Cycles), No.44, Japan Association of Business Cycle studies (JABC), November 2007.

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